The Journal of Higher Education

ISSN: 0022-1546 (Print) 1538-4640 (Online) Journal homepage: https://www.tandfonline.com/loi/uhej20

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To cite this article: Elizabeth Bell (2020): The Politics of Designing Tuition-Free College: How Socially Constructed Target Populations Influence Policy Support, The Journal of Higher Education, DOI: 10.1080/00221546.2019.1706015

To link to this article: https://doi.org/10.1080/00221546.2019.1706015

Published online: 09 Jan 2020.

THE JOURNAL OF HIGHER EDUCATION
https://doi.org/10.1080/00221546.2019.1706015

Routledge
Taylor & Francis Group

The Politics of Designing Tuition-Free College: How Socially Constructed Target Populations Influence Policy Support

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ABSTRACT

As tuition-free college policies spread rapidly across the states, an increasingly important policy debate has emerged regarding the optimal policy design of tuition-free college. However, existing scholarly evidence has focused almost exclusively on student outcomes, leaving the political decision-making processes among the public and policymakers unexamined. In this article, I leverage a nationally representative survey experiment and policy design theory to explore the power of social constructions of target populations in shaping a cornerstone of politically feasible tuition-free college—public opinion. In line with theoretical expectations, the analysis reveals that including a minimum high school GPA requirement increased support for tuition-free college, while targeting benefits to low-income families reduced perceptions of fairness, relative to a universal policy design. The findings also reveal that the effect of policy design on public perceptions of tuition-free college is moderated by region and age. Together, these findings reveal how a nationally representative sample of the public view the key policy design debates on tuition-free college and demonstrate the importance of social constructions of target populations for the study of higher education policy processes.

ARTICLE HISTORY
Received 28 January 2019
Accepted 13 December 2019

KEYWORDS
Policy process; policy design; tuition-free college; college promise; public opinion; politics of higher education

College affordability concerns dominate discussions of higher education policy, with over 70 percent of parents expressing concern about how to finance their child's college education (Callahan, Perna, Yamashita, Wright, & Santillan, 2018; Jones, 2015). In response to this growing concern, the tuition-free college—or college promise—movement, has gained traction in recent years with 16 states implementing some form of tuition-free college policy (Perna & Leigh, 2017). While each of these policies have the shared goal of expanding college access and affordability, they employ substantially different approaches to policy design, with some states—such as Oregon—facing considerable difficulty in establishing political feasibility and sustainability (Lobosco, 2017; Perna & Leigh, 2017). Despite the importance of politics in shaping the design, adoption, and sustainability of tuition-free college, studies investigating promise programs have focused almost entirely on student outcomes (Andrews, DesJardins, & Ranchhod, 2010; Bartik,

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Hershbein, & Lachowska, 2015; Bozick, Gonzalez, & Engberg, 2015; Carruthers & Fox, 2016; Gonzalez et al., 2014; Page, Iriti, Lowry, & Anthony, 2018), which is an essential area of study, but leaves the political dynamics understudied.

This article diverges from previous literature by putting the politics of public opinion in the spotlight, leveraging a theoretical framework from public policy literature and a nationally representative survey experiment of 2,850 respondents to uncover the causal impact of variation in policy design on public support for tuition-free college. In doing so, this article helps answer a salient question on the mind of many policymakers around the nation: How do we craft politically feasible tuition-free college? As such, this paper answers the call to address questions that are both practically important for policymakers and theoretically important for scholars in higher education policy (Hillman, Tandberg, & Sponsler, 2015; McLendon, 2003). To retain the practical importance while also contributing to theoretical development, I leverage policy design theory (PDT)—an underutilized theoretical framework in the study of higher education policymaking—and strategically chose the most salient policy design debates among policymakers and pundits. In turn, the key research questions in this study include:

(1) How does the inclusion of a family income cap shape public perceptions of tuition-free college?
(2) How does the inclusion of academic merit requirements shape public perceptions of tuition-free college?

To answer these questions, I conduct a survey experiment in which each respondent was randomly assigned to one of four potential tuition-free college policy prompts. These treatments vary along two dimensions: whether the policy includes a family income cap and a minimum GPA requirement. After being exposed to the treatments, respondents were asked to answer follow-up questions regarding their preferences and beliefs about the tuition-free college policy.

The analysis reveals support for the key theoretical hypotheses—support for tuition-free college is significantly impacted by variation in policy design and the salient target population. First, respondents were more willing to support tuition-free college policies when the policy incorporated a minimum high school GPA requirement. This finding aligns with the theoretical framework, suggesting that the public is more supportive of tuition-free college when the target population is perceived as more deserving or "college ready." Second, the findings reveal that the public is more likely to view universal tuition-free college policies as fair, relative to a means-tested policy design. This finding also aligns with the theoretical expectations from PDT, suggesting that the public is less likely to accept a policy design that limits the allocation of benefits to low-income families with lower levels of political power.

Third, the analysis reveals that the effect of policy design on public support for tuition-free college was moderated by characteristics such as age and region. For instance, the results reveal that targeted tuition-free college would be more supported in the South while universal tuition-free college would have higher levels of support in the Northeast. Additionally, older respondents were more likely to support targeted tuition-free college, while younger respondents were more likely to support universal eligibility. On the other hand, in opposition to previous research in policy areas such as welfare and affirmative action, the effect of the policy design treatments was not significantly moderated by ideology (Bell, Forthcoming; Lawrence, Stoker, & Wolman, 2013).

The following sections begin with a description of the tuition-free college movement including a discussion of the variation in policy design and scholarly research to date. Then, I leverage the insights from PDT to formulate a set of hypotheses and present the survey experiment, analytical approach, and results. Finally, in light of the call to engage in more policy-relevant research that can be of use to policymakers (Hillman et al., 2015), I conclude by discussing the policy implications of the findings.

Background on college promise/tuition-free college movement

In 2015, the Obama Administration proposed the America's College Promise program through a $60 million-dollar matching grant program aimed at eliminating tuition and fee expenses for students in the first two years of community college. This program was modeled after the Tennessee Promise program, implemented by Republican Governor Bill Haslam in 2014 for all students in the state. Ever since the implementation of the Tennessee Promise, the policies have been spreading like wildfire across states. As of 2018, 16 states have enacted and funded tuition-free college/college promise programs with over 289 estimated policies total across states, regions, and localities (Mishory, 2018a; Perna & Leigh, 2017).

For state and local officials, these policies address multiple interconnected public issues (Swanson, Watson, Ritter, & Nichols, 2017). First, tuition-free college policies are seen as a way to address the rising cost of college and the increasing proportion of the population that face crippling student loan debt. Second, these policies are also seen as an economic development initiative that will keep students in local or state geographic areas and will contribute to the health and growth of industry (Miller-Adams, 2015). Finally, many tuition-free college policies, as opposed to previous forms of financial aid, are easily understood with a clear affordability message which may encourage more students to consider going to college and increase educational attainment in the community. So far, the evidence shows that some tuition-free college policies are successful in accomplishing these goals, with scholars' findings increasing housing prices and population in local areas affected (Bartik, Eberts, & Huang, 2010; Bartik et al., 2015; LeGower &

Walsh, 2017; Sohn, Rubenstein, Murchie, & Bifulco, 2017), increasing student performance and likelihood of graduating from high school (Bartik & Lachowska, 2013; Carruthers & Fox, 2016; Gonzalez et al., 2014), and increasing levels of college enrollment, persistence, and graduation for recipients of tuition-free college scholarships (Andrews et al., 2010; Bartik et al., 2015; Bozick et al., 2015; Carruthers & Fox, 2016; Gonzalez et al., 2014; Gurantz, 2019; Page et al., 2018). However, this is not to say that these goals will be achieved in every tuition-free college program—these studies investigate different types of tuition-free college policies, with each policy containing unique variation in the design that are likely key determinants of effectiveness.

For instance, most tuition-free college programs have some merit or need component in the eligibility requirements—according to data from Penn AHEAD, 51 percent of promise programs include a merit requirement and 30 percent of programs are means-tested (Perna & Leigh, 2017). These requirements often come in the form of an income limit, like in the New-York Excelsior Scholarship, where families making over $125,000 are not eligible for the scholarship. Merit requirements are often in the form of minimum high school GPA or a minimum ACT/SAT. Eight of the 16 state tuition-free college programs have a merit requirement in the eligibility (Mishory, 2018b). By limiting eligibility for the programs through these two mechanisms, state officials can keep the cost of the program down and ensure that the financial aid is going to students that either come from middle or working-class families or have demonstrated a degree of college readiness.[1] Each of these design components—and especially the eligibility requirements—represents a strategic choice by policymakers on who will get what, when, and how.

Theoretical framework

Higher education scholars have previously investigated the political processes that produce financial aid policy (Doyle, 2012; Ness, 2010, 2008), demonstrating the explanatory power of theories such as the advocacy coalition framework, punctuated equilibrium, multiple streams, and policy diffusion (McClendon, Cohen-Vogel, & Wachen, 2003; Ness & Gándara, 2014). For Ness (2008), Ness (2010) leverages these policy theories to construct a framework for determining the adoption of eligibility criteria for merit-based financial aid. This framework is an important development in the understanding of higher education policy adoption, but it misses an essential mechanism that shapes the policy design strategies of policy entrepreneurs and policymakers—the social construction of target populations. Indeed, a recent study has shown the explanatory power of PDT, when combined with the existing model by Ness (2010) in predicting policymakers' behavior the context of performance-based funding in Colorado (Gándara, 2019). In this study, I extend this discussion by demonstrating the importance of social

constructions of target populations in shaping another element of the political machinery in the policy design process—public opinion. In the next section, I expand upon PDT and develop the set of theoretical hypotheses on the impact of policy design on public opinions on tuition-free college.

Policy design theory (PDT) and the politics of socially constructed target populations

Variation in the design of tuition-free college eligibility establishes the most important element of political decision-making by providing the guidelines for who gets what, when and how (Lasswell, 1971)—effectively, by structuring the allocation of tuition-free college policy benefits to target groups, the variation in design creates the winners and the losers of tuition-free college. For instance, a tuition-free college policy such as the Oklahoma's Promise that includes a $50,000 family income cap creates a substantial benefit for low-income students but excludes many middle-class families that may also be struggling to pay for college. This target group is very different from the beneficiary of a program structured so that eligibility is open to all in-state students who demonstrated academic merit. In opposition to the first means-tested policy design, the latter program expands the beneficiary population to a broader subset of students that have demonstrated some degree of "college readiness." As a result of the various beneficiary groups in these different forms of tuition-free college policies, the level of public support also likely varies. In fact, in other policy areas, the relationship between target populations, politics, and public support has been explained in detail by policy scholars interested in the role of power and social constructions in shaping public and elite decision-making.

PDT posits that social constructions, or powerful rhetorical images and stereotypes that are associated with groups of people, are normative and evaluative, portraying groups as positive or negative with symbolic language that labels groups as deserving or undeserving (Schneider & Ingram, 1993). Moreover, because the public and political elites are boundedly rational and rely on heuristics and stereotypes, target groups are categorized based on levels of political power and deservingness, creating four main categories: advantaged, contenders, dependents, or deviants (Schneider & Ingram, 2012). Groups with high levels of political power and positive social constructions are categorized as advantaged (Ex: business interests) while groups with high levels of political power but negative social constructions are categorized as contenders (Ex: wall street). Groups with positive social constructions but low levels of political power are categorized as dependents (ex: children, mothers, students) while deviants are those groups with both low levels of political power and perceptions of deservingness (Ex: criminals) (Schneider & Ingram, 2012). These categorizations substantially impact public preferences for allocations of policy benefits and burdens, which shapes decisions by political elites on policy design (Bell,

Forthcoming; Boushey, 2016; Lawrence et al., 2013; Mettler, 2007; Pierce et al., 2014; Reich & Barth, 2010; Schneider & Ingram, 2012; Soss & Schram, 2007; Stein, 2001). Specifically, elected officials engage in what scholars have called "anticipatory feedback"—that is, they base policy design decisions on what they anticipate the public will support or oppose for the salient target populations in order to maximize the probability of reelection (Campbell, 2012; Schneider & Ingram, 2019). In fact, the body of evidence on PDT suggests that public opinion plays a central role in the policy window by creating the boundaries around what kinds of policy designs enhance policymakers' chances of reelection—specifically, policymakers respond to public sentiment on which target groups are considered deserving or undeserving by leveraging policy design to allocate policy benefits to powerful, "deserving" target populations and burdens to less powerful, "undeserving" target populations (Boushey, 2016; Pierce et al., 2014; Schneider & Ingram, 2012, 2019). In particular, policymakers and the public have been found to be more supportive of policies that allocate salient benefits to advantaged groups, implement hidden or submerged benefits for contenders, enact stigmatizing and demeaning benefits for dependents and allocate harsh burdens to deviants (Boushey, 2016; Pierce et al., 2014; Schneider & Ingram, 2012). A great example of these dynamics comes from a recent study that applied this theory to performance-based funding in Colorado, finding that policymakers avoided extending benefits to racial/ethnic minorities in their performance-based funding model because of the potential backlash from the public (Gándara, 2019). On the other hand, the findings demonstrate that more powerful institutions were allocated the most benefits and less powerful rural institutions of higher education were allocated burdens (Gándara, 2019). This study demonstrates the importance of target populations and policy design for shaping the decision-making of public officials and illuminates that policymakers engage in anticipatory feedback in their avoidance of designs that may cause public backlash. In this way, policy design serves as a lever for ensuring that a broad swath of the public will support the policy and become a mobilized constituency in support of their reelection (Schneider & Ingram, 2019).

When applied to tuition-free college, PDT also provides insight into the political dynamics driving public opinion on policies with varying policy designs. In the context of tuition-free college policies, this theory would predict that public support for tuition-free college would substantially shift as a result of eligibility requirements such as the family income cap or a minimum academic merit requirement due to the salient socially constructed target population of interest —the key causal mechanism. For instance, limiting eligibility to students that meet merit requirements creates a positively constructed, meritorious or "college-ready" target population that may be more likely to be perceived as deserving of the tuition-free college policy benefit. In fact, recent surveys indicate that one of the main reasons that respondents have supported tuition-free college was a desire for *qualified* students to go to college regardless of family income (Gerchick, 2018).

This suggests that students meeting academic merit standards are likely to be positively socially constructed as "qualified," "deserving," and "college-ready." Therefore, I expect that tuition-free college policies targeting students that are required to meet minimum academic merit standards will elicit higher levels of support.

Hypothesis 1: Tuition-free college policies that require students to meet merit requirements will elicit higher levels of public support.

Policymakers also have a choice when designing tuition-free college as to whether the policy will target low-income populations, with low levels of political power, or be open to all in-state students including more powerful groups such as the middle-class. This choice of target population likely also significantly shifts public perceptions of tuition-free college policies. In the case of a policy that limits eligibility to students with family incomes under $50,000 a year, the public may be less supportive because they may rather the benefits be available to the positively socially constructed groups like the "hard-working middle class." Indeed, means-tested policies, relative to universally designed policies like Social Security are more likely to face stigma and disinvestment (Hacker, 2004; Wilson, 2012). In the context of welfare policies, previous research reveals that universally designed programs, as opposed to targeted means-tested programs shift the focus away from the controversial redistribution and instead invoke a uniting purpose that appeals to the market insecurities in both working and middle-class families (Jakobsen, 2011; May, 1991). In this way, universal designs "help incorporate beneficiaries as full members of society, bestowing dignity and respect on them. Conversely, means-tested programs may convey stigma and thus reinforce or expand beneficiaries' isolation" (Mettler & Stonecash, 2008, p. 275). Therefore, in the context of tuition-free college, means-tested policies with family income caps may elicit lower levels of public support relative to a policy that is universally designed. Universal policy designs, therefore, may expand the constituency of the program and may convey less stigma and isolation, instead of knitting the fabric of communities together. In fact, this proposition was put forth by recent analysis at the Century Foundation, in which the author argues that if more people benefit from the tuition-free college program, the policy will be more sustainable (Mishory, 2018b). This paper provides the first empirical assessment of this proposition, with the expectation that the public will be more likely to support universal tuition-free college.

Hypothesis 2: Universally targeted tuition-free college policies, relative to means-tested programs, will receive higher levels of public support.

Finally, I predict that some characteristics will moderate the effect of policy design on public preferences. One of the major criticisms of PDT is

that public perceptions of deservingness are assumed to be homogenous, which recent studies have called into question (Bell, Forthcoming; Lawrence et al., 2013). These studies have found that the public is not homogenous in perceptions of deservingness of target populations, with ideology playing an important moderating role in the relationship between policy design and public support—specifically, conservatives distinguish between target populations on the basis of perceived deservingness in their evaluations of public policies much more than liberals (Bell, Forthcoming; Lawrence et al., 2013). For example, in the context of affirmative action, conservatives were significantly impacted the framing of the target group as "high-achieving" while liberals already saw racial/ethnic minorities and low-income students as deserving of affirmative action benefits regardless of the achievement framing (Bell, Forthcoming). Based on these findings, I predict that conservative respondents will be more likely to be impacted by variation in the policy design of tuition-free college policies.

Hypothesis 3: Conservatives will be more likely to be significantly impacted by variation in socially constructed target populations.

To further build on this work, I also test whether education, income, age, and region moderate the relationship between policy design and public opinion. While no previous work on PDT has identified these as moderating factors from a theoretical standpoint, it is possible that these factors will be important in shaping how the public perceives tuition-free college policy designs. Connecting back to the goal of advancing practical knowledge for policymakers (Hillman et al., 2015; McLendon, 2003), these interactions provide a more nuanced depiction of how different groups of the public are likely to respond to variation in the design of tuition-free college. By better understanding the potential importance of design across different regions and demographic groups, policymakers may be better able to design politically feasible and sustainable tuition-free college policies.

A window into political feasibility: Existing evidence on support for tuition-free college

Public opinion polls on support for tuition-free college policies have been common in the news media as an increasing number of states, local governments, and colleges implement place-based tuition-free college programs. These polls have found that support for tuition-free college is associated with race, income, and age. In a variety of public opinion polls, younger, liberal, nonwhite, and middle and working class respondents are more likely to support tuition-free college policies (Gerchick, 2018). The main reason the majority of respondents supported making public colleges tuition-free was

a desire for *qualified* students to go to college regardless of lacking financial resources (Gerchick, 2018).

While these polling results provide insight into the potential factors that are descriptively related to support for tuition-free college, they overlook the variation in policy design. Given that tuition-free college policies come in so many forms, the heterogeneity in program design likely influences public perceptions of tuition-free college as much, if not more, than the set of demographic and political factors identified in previous studies. Therefore, this study advances this line of inquiry by investigating how variation in policy design of tuition-free college policies impacts the propensity to support these policies. Moreover, this study diverges from previous public opinion polls by utilizing a survey experiment technique in which random assignment avoids the problems of selection bias and facilitates causal identification instead of descriptive correlations.

Research design

To investigate the influence of policy design on support for tuition-free college, I fielded a nationally representative survey experiment in Qualtrics in November 2017. The 2,850 respondents were all over the age of 18 and over 50% of respondents had children aged 5–25. This quota ensured that at least half of the respondents had recent experience with education issues and had some stake in college affordability. Appendix Table A1 shows that the sample is representative of the demographics in the national population according to data from the U.S. Census, with the survey sample reflecting slightly higher levels of education and lower incomes. To improve the generalizability of results, standard post-stratification weights are applied to the data, as described in detail in the Appendix.

The survey experiment began with a general question where respondents ranked support for state-wide tuition-free college policies, more generally, before they were presented with the randomly assigned policy design treatment prompts. This pretest measure helps to isolate the causal impact of policy design on public support by controlling for the level of baseline support before respondents are exposed to the variation in program design. After completing the pretest, respondents were randomly assigned to receive one of the four treatment groups summarized in Table 1 and were asked to rank levels of support or opposition to the state-wide tuition-free college policy.[2]

The experiment was set up so that the treatments groups varied along two dimensions: the inclusion or exclusion of a family income cap and the inclusion or exclusion of a high school GPA requirement. Two groups of respondents were presented with a tuition-free college policy targeting all in-state students regardless of family income. One of these two treatment

Table 1. Randomly assigned policy design treatments.

		High school GPA requirement	
		Yes	No
Family Income Cap	Yes	**Target Population**: Students with family incomes of $50,000 or less; maintaining a 2.0 GPA **Prompt**: Imagine the following situation: Your state has implemented a new policy that fully covers tuition and fees at any college in the state for resident students with family incomes less than $50,000. Students receiving this aid must maintain a 2.0 grade point average (GPA) (C average) or higher.	**Target Population**: Students with family incomes of $50,000 or less **Prompt**: Imagine the following situation: Your state has implemented a new policy that fully covers tuition and fees at any college in the state for resident students with family incomes less than $50,000. There is no grade point average (GPA) requirement for students receiving financial aid through this program.
	No	**Target Population**: All in-state students maintaining a 2.0 GPA **Prompt**: Imagine the following situation: Your state has implemented a new policy that fully covers tuition and fees at any college in the state for resident students, regardless of family income. Students receiving this aid must maintain a 2.0 grade point average (GPA) (C average) or higher.	**Target Population**: All in-state students **Prompt**: Imagine the following situation: Your state has implemented a new policy that fully covers tuition and fees at any college in the state for resident students, regardless of family income. There is no grade point average (GPA) requirement for students receiving financial aid through this program.

The full prompt can be viewed in Appendix A.

groups incorporated a 2.0 minimum high school GPA requirement while the other treatment group explicitly excludes merit requirements. The next two groups of respondents received a prompt describing a tuition-free college policy targeting students with family incomes less than $50,000. Again, one of the treatments includes a 2.0 high school GPA requirement while the second specifies that the policy does not have a GPA requirement.

In order to overcome a lack of public awareness, the second section of each treatment prompt presents fictitious quotes from state officials expressing opinions and concerns. This is an important element of the design as it approximates what the public might be exposed to in the public discourse on tuition-free college and provides credible information from stakeholders on both sides of the debate. In each of the treatment groups the University President of the state flagship university, Rebecca Wilson, advocates for expanding access to benefits, while the State Department of Education official, Emma McDaniel, worries about the financial sustainability of the policy. After the respondents read the treatment prompt describing the policy targeting in question, they were presented with a series of questions regarding their opinions on the policy. These outcome variables and other non-dichotomous measures are described in detail in Table 2.[3]

Table 2. Measurement and wording of non-binary measures.

Outcome measure	Question wording	Measurement
Support for tuition-free college policy	Do you support or oppose the financial aid policy described above?	5 - Strongly Support 4 - Somewhat Support 3 - Neither Support nor Oppose 2 - Somewhat Oppose 1 - Strongly Oppose
Perceptions of fairness	Please rate the degree to which you agree or disagree with the following statement. The policy described above is fair.	5 - Strongly Agree 4 - Somewhat Agree 3 - Neither Agree nor Disagree 2 - Somewhat Disagree 1 - Strongly Disagree
Income	Was the estimated annual income for your household in 2016	1–10 Less than $10,000–$100,000 11–20 $100,000 to $200,000 or more
Education	What is the highest level of education you have COMPLETED?	1 - Less than High School 2 - High School/GED 3 - Vocational or Technical Training 4 - Some College - NO degree 5 - 2-year College/Associate's Degree 6 - Bachelor's Degree 7 - Master's degree 8 - Doctorate/PhD/JD(Law)/MD
Ideology	On a scale of political ideology, individuals can be arranged from strongly liberal to strongly conservative. Which of the following categories best describes your views?	1 - Strongly liberal 2 - Liberal 3 - Slightly liberal 4 - Middle of the road 5 - Slightly conservative 6 - Conservative 7 - Strongly conservative

Data description

The descriptive statistics for the full weighted dataset are summarized in Table 3. The sample is 81 percent white, 49 percent male, and the average respondent is 46 years old and makes around $50,000 to $60,000 a year. The average ideology is middle of the road, and 44 percent of the sample either leaning Republican or identifying as Republican. In line with the demographic characteristics of the country, 37 percent lived in the South, 20 percent lived in the Midwest or West and 18 percent lived in the Northeast. Table 3 also reveals that the average respondent neither supports nor opposes tuition-free college before being randomly assigned the policy design treatments (Mean = 3.04). However, the data also show that there is variation in the pretest support measure based on the respondents' ideology—while 56 percent of conservatives somewhat or strongly supported tuition-free college, 74 percent of liberals somewhat or strongly supported tuition-free college before receiving a treatment prompt.

Table 3. Descriptive statistics with post-stratification weights.

Variable	*N*	Mean	SD	Min	Max
Support for tuition-free college					
Pretest support	2,823	3.04	1.06	1	5
Posttest support	2,832	3.72	1.05	1	5
Posttest perceptions of fairness	2,823	3.50	1.01	1	5
Control Variables					
Exposure to tuition-free college	2,850	0.24	0.43	0	1
White	2,850	0.81	0.39	0	1
Male	2,850	0.49	0.50	0	1
Income	2,796	6.70	4.70	1	21
Age	2,839	46.52	17.42	18	91
Education	2,841	4.52	1.79	1	8
Ideology	2,836	4.04	1.68	1	7
Party ID- Republican	2,731	0.44	0.50	0	1
Voted in Last Election	2,731	0.77	0.42	0	1
Region					
Region-Northeast	2,850	0.18	0.38	0	1
Region-South	2,850	0.37	0.48	0	1
Region-Midwest	2,850	0.23	0.42	0	1
Region-West	2,850	0.22	0.42	0	1

To visually portray the variation in the key-dependent variables, I graph the percentage of respondents somewhat or strongly supporting tuition-free college or agreeing that the policy is fair for each randomly assigned treatment group in Figure 1.[4] This variation across the treatment groups is explored further in the forthcoming analysis.

Analytical approach

To formally estimate the impact of the policy design treatments on public support and perceptions of fairness, I estimate a weighted OLS model with robust standard errors.[5] This model, summarized in Equation 1, predicts support for tuition-free college (Y_i) (1 reflecting strongly oppose and 5 reflecting strongly support) as a function of the randomly assigned treatments (T_i), the control variables (X_i), the intercept (a_i), and an error term (ε_i).

$$Y_i = a_i + \emptyset_i T_i + \beta_i X_i + \varepsilon_i \quad (1)$$

I include three distinct, yet complementary analytical strategies to provide both the average treatment effects across the two dimensions and across the four separate treatment groups. In the first specification, I combine the treatment groups into two main variables of interest for ease of interpretation. The first treatment variable captures whether the tuition-free college policy included a family income cap or whether it was open to all in-state students and the second treatment variable reflects whether the policy included a 2.0 minimum GPA requirement or not. Therefore, the first variable captures the average effect of the family income cap averaged across the merit requirement

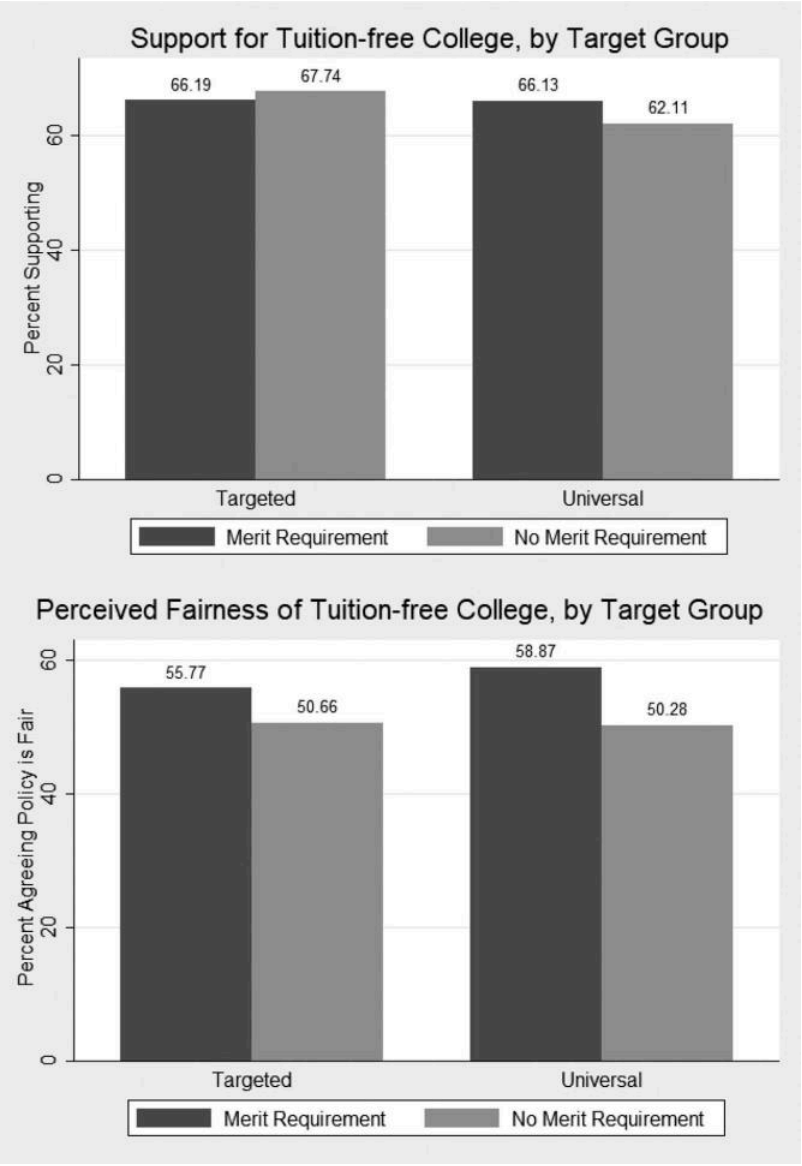

Figure 1. Percentage strongly or somewhat supporting tuition-free college or agreeing that the tuition-free college policy is fair, by randomly assigned target population.

treatments and the second variable portrays the average effect of the merit requirement treatment, averaged across the family income cap treatments. In the second specification, I conduct separate models for each of the four treatment groups. These models provide an added level of nuance by revealing the effect of each policy design treatment on the outcomes of interest. Finally, to further isolate the effect of each treatment dimension, I conduct a series of models that reveal the effect of one treatment dimension while holding the other constant. First, I measure the change in opinion based on the family

income cap while holding the merit requirement constant—in these models, I compare the universal, merit-based policy design with the targeted merit-based design and do the same for the treatments that exclude merit requirements. Then, I compare the variation in public opinion that results from the inclusion of merit requirements while holding variation in the targeting constant—in these models, I compare the treatment group assigned the universal, merit-based design to the treatment group assigned a universal design with no merit requirement and do the same comparison across the two treatment groups that include a family income cap.

Results

Table 4 presents the results of the first specification, which reveals the average effect of the family income cap and the academic merit requirement on policy support and perceptions of fairness. Model 1 reveals that the inclusion of an academic merit requirement significantly increased the level of support for tuition-free college—when all other covariates are held at the mean, the marginal effect of the merit requirement treatment increased policy support by approximately 0.095 on the 5-point scale. On the other hand, the family income cap treatment did not significantly impact the level of support for tuition-free college. Therefore, the first specification provides support for hypothesis 1, suggesting that positive messages of deservingness/college readiness increase the likelihood of policy support among the public. The control variables in Models 1 and 2 are all in expected directions based on previous polling data—nonwhite, lower-income, and liberal respondents were more likely to support tuition-free college. In terms of magnitude on the 5-point support scale, identifying as a conservative reduced support by 0.082, identifying as white reduced policy support by 0.062 and identifying as high income reduced support by 0.059 when all other covariates are held at the mean. Together, this model reveals that tuition-free college policies with merit requirements draw higher levels of public support but that respondents are no less likely to support tuition-free college policies with family income cap provisions.

Model 2 of Table 4 provides evidence on the causal impact of variation in the two policy design treatment dimensions on public perceptions of fairness. First, this model reveals that the inclusion of a $50,000 family income cap reduced respondents' perceptions of fairness relative to the universal tuition-free college design. In terms of magnitude, the inclusion of a $50,000 family income cap reduced perceptions of fairness by 0.15 on the 5-point scale when all covariates are held at the mean. This finding aligns with hypothesis 2, suggesting that respondents are more likely to view universally designed policies as fair compared to policies that only target low-income families. Model 2 also reveals that the inclusion of academic merit requirements also significantly influenced

Table 4. Regression results for average effect of each treatment dimension.

Explanatory variables	(1) Support	(2) Fairness
Treatment 1: Family income cap	−0.001	−0.118***
	(0.043)	(0.045)
Treatment 2: Academic merit requirement	0.111**	0.195***
	(0.044)	(0.046)
Controls		
Exposure to tuition-free college	0.062	0.017
	(0.046)	(0.051)
White	−0.136***	0.008
	(0.052)	(0.056)
Male	0.029	0.065
	(0.044)	(0.046)
Income	−0.0219***	−0.0148***
	(0.005)	(0.006)
Age	0.000	−0.002
	(0.001)	(0.002)
Northeast	0.087	0.047
	(0.065)	(0.068)
South	0.072	0.081
	(0.060)	(0.059)
Midwest	0.064	0.091
	(0.065)	(0.070)
Education	0.003	−0.003
	(0.014)	(0.015)
Ideology	−0.0434***	−0.001
	(0.016)	(0.019)
Party ID-Republican	−0.012	−0.126**
	(0.055)	(0.061)
Voted in last election	0.080	0.048
	(0.054)	(0.057)
Baseline support	0.474***	0.354***
	(0.025)	(0.025)
Constant	4.852***	4.273***
	(0.121)	(0.140)
N	2,624	2,614
R^2	0.28	0.177

Each model includes post-stratification weights and controls for the pretest measure of support for tuition-free community college policies (Baseline Support). Robust Standard Errors in parentheses. *$p < 0.10$ **$p < 0.05$ ***$p < 0.01$.

public perceptions of fairness. Table 4 shows that respondents were significantly more likely to view tuition-free college policies with academic merit standards as fair. In fact, perceptions of fairness increase by approximately 0.17 on the 5-point scale as a result of the inclusion of the 2.0 GPA requirement. Taken together, these results support hypotheses 1 and 2, suggesting that the inclusion of merit requirements increases the level of support for tuition-free college while the family income cap decreases perceptions of fairness.

Next, I present the second specification which provides the treatment effect estimates for each of the four treatment groups separately in Table 5.[6] For the treatment group with a family income cap and merit requirement, the results are null for support and perceptions of fairness. However, when the policy includes a family income cap and no merit requirement, the results show that

Table 5. Regression results for effect of each treatment group on beliefs about tuition-free college policy.

Explanatory variables	(1) Support	(2) Fairness	(3) Support	(4) Fairness	(5) Support	(6) Fairness	(7) Support	(8) Fairness
Family income cap & merit requirement	0.0584	0.0543						
	(0.051)	(0.049)						
Family income cap & no merit requirement			−0.067	−0.224***				
			(0.053)	(0.060)				
Universal & merit requirement					0.083*	0.196***		
					(0.045)	(0.049)		
Universal & no merit requirement							−0.088*	−0.051
							(0.050)	(0.053)
Constant	4.890***	4.293***	4.925***	4.365***	4.892***	4.269***	4.929***	4.321***
	(0.118)	(0.138)	(0.117)	(0.137)	(0.119)	(0.138)	(0.118)	(0.138)
Covariates	X	X	X	X	X	X	X	X
N	2,624	2,614	2,624	2,614	2,624	2,614	2,624	2,614
R^2	0.278	0.164	0.278	0.173	0.278	0.171	0.278	0.164

Each model includes post-stratification weights and controls for the pretest measure of support for tuition-free community college policies (Baseline Support) as well as a series of control variables. Robust Standard Errors in parentheses. *$p < 0.10$ **$p < 0.05$ ***$p < 0.01$.

respondents were less likely to view the policy as fair. The next treatment group, with the universal and merit-based design, was significantly more likely to have higher levels of support and perceived fairness. Finally, the universal tuition-free college policy with no merit requirement was less likely to be supported by the public. Ultimately, these findings show how that the most supported version of tuition-free college is universal and includes a merit requirement. On the other hand, the treatments that exclude merit requirements were less likely to be supported or less likely to be viewed as fair.

Finally, I present the results of a series of comparisons that isolate the effects of each treatment dimension in Table 6. The first four models of Table 6 isolate the effect of the family income cap while holding the merit requirement treatment constant. These results reveal that perceptions of fairness were lower in the family income cap treatment groups, regardless of whether the policy included a merit requirement. Next, Models 5–8 in Table 6 reveal the effect of the merit requirement while holding targeting constant. These models show that the inclusion of merit requirements significantly increased both support and perceptions of fairness, regardless of the targeting of the policy. These findings further support Hypothesis 1 and Hypothesis 2, suggesting that the social construction of target populations significantly shapes public perceptions of tuition-free college.

Table 6. Regression results isolating the effect of each treatment dimension.

Explanatory variables	(1) Support	(2) Fairness	(3) Support	(4) Fairness	(5) Support	(6) Fairness	(7) Support	(8) Fairness
Treatment 1 (Family Income Cap & Merit Requirement) compared to Treatment 3 (Universal & Merit Requirement)	−0.023 (0.058)	−0.101* (0.057)						
Treatment 2 (Family Income Cap & No Merit Requirement) compared to Treatment 4 (Universal & No Merit Requirement)			0.011 (0.064)	−0.139** (0.070)				
Treatment 1 (Family Income Cap & Merit Requirement) compared to Treatment 2 (Family Income Cap & No Merit Requirement)					0.109* (0.065)	0.226*** (0.068)		
Treatment 3 (Universal & Merit Requirement) compared to Treatment 4 (Universal & No Merit Requirement)							0.129** (0.057)	0.178*** (0.061)
Constant	4.980*** (0.148)	4.431*** (0.168)	4.844*** (0.190)	4.383*** (0.215)	4.980*** (0.148)	4.431*** (0.168)	5.096*** (0.158)	4.302*** (0.191)
Covariates	X	X	X	X	X	X	X	X
N	1,362	1,352	1,262	1,262	1,362	1,352	1,314	1,313
R^2	0.305	0.178	0.263	0.181	0.305	0.178	0.331	0.171

Each model includes post-stratification weights and controls for the pretest measure of support for tuition-free community college policies (Baseline Support) as well as a series of control variables. Robust Standard Errors in parentheses. *$p < 0.10$ **$p < 0.05$ ***$p < 0.01$.

Subgroup analysis

So far, the analysis has focused on aggregated results, which may neglect underlying heterogeneity in the impact of tuition-free college policy design on public opinion across subgroups. Therefore, in this section, I break down the analysis by a variety of subgroups to explore the potential moderating influences in the relationship between policy design and public perceptions of tuition-free college policies.

Table 7. Regression results, by conservative ideology.

Variables	(1) Support	(2) Fairness
Family income cap*Conservative	−0.131*	−0.153**
	(0.078)	(0.078)
Academic merit requirement*Conservative	0.153*	0.137*
	(0.079)	(0.078)
Conservative	−0.141**	−0.0735
	(0.070)	(0.067)
Family income cap	0.0171	−0.102**
	(0.041)	(0.042)
Academic merit requirement	0.0462	0.121***
	(0.041)	(0.042)
Constant	4.720***	4.309***
	(0.099)	(0.102)
Covariates	X	X
N	2,734	2,725
R^2	0.243	0.163

Each model includes post-stratification weights and controls for the pretest measure of support for tuition-free community college policies (Baseline Support) as well as a series of control variables.

The full results with the estimates for each covariate are available in the Appendix. Robust Standard Errors in parentheses. *$p < 0.10$ **$p < 0.05$ ***$p < 0.01$.

First, I test whether ideology moderates the relationship between policy design and public opinion. In Table 7, I interact a dichotomous variable for respondents identifying as conservative with each policy design treatment dimension. First, the coefficients for the interaction between conservative ideology and policy design are all statistically significant. However, the difference between the effect of each policy design treatment for conservatives is not significantly different from non-conservatives. Therefore, these findings do not support hypothesis 3, suggesting that ideology does not moderate the influence of policy design and support for tuition-free college policies.

In Appendix Tables B4-B7, I test whether region, income, age, and education moderate the impact of policy design on the outcomes of interest, respectively. Appendix Table B4 shows significant variation in the impact of the treatments across regions. Specifically, respondents in the Northeast were less likely to support tuition-free college with an income cap and respondents in the South were more supportive of means-tested tuition-free college. When all other covariates are held at the mean, the income cap decreased policy support among respondents from the Northeast by 0.21 on the 5-point scale. For respondents from the South, the targeting treatment increased policy support by 0.15 on the 5-point scale. While the underlying reason for this variation across regions is not captured in the survey, it is possible that respondents from the South may be more likely to be concerned about the price tag of a universal tuition-free college policy, and the potential tax increases this policy could create. On the other hand, respondents in the Northeast may be more likely to support universal tuition-free college because of the desire to expand college affordability for low-income

populations in addition to the middle class, regardless of the economic viability of the policy. Ultimately, these differences in the perception of tuition-free college policies based on the design is an important finding for better understanding the fate of these policies in different parts of the country.

Appendix Tables B5 and B6 reveal that income and education did not significantly moderate the relationship between policy design and public opinion on tuition-free college.[7] On the other hand, Table B7 reveals that older respondents were more likely to support tuition-free college with a family income cap (0.19 on the 5-point scale) while younger respondents were less likely to support tuition-free college with the family income cap (0.22 on the 5-point scale). Finally, in Table B8 I interact an indicator for whether the respondent was exposed to a state-level tuition-free college during or prior to the time of the survey. The results from Table B8 in the Appendix demonstrate that exposure to a state-level tuition-free college policy did not moderate the impact of policy design on public perceptions of tuition-free college.

Conclusion

Tuition-free college policies have been rapidly spreading across states and cities, outpacing the accumulation of scholarly literature on the topic. So far, scholars studying tuition-free college have focused almost entirely on student outcomes, leaving the political dynamics of tuition-free college policies understudied. In light of the recent calls for theoretically rigorous and policy-relevant research on higher education policy (Hillman et al., 2015), this study integrates a prominent public policy theory into the context of tuition-free college and provides insight into the most supported policy design in the eyes of the public.

Utilizing a nationally representative survey experiment, I highlight how socially constructed target groups invoked in policy designs impact public support for tuition-free college. The results of the survey experiment suggest that when tuition-free college policies are designed universally, so that all students in the residential area are eligible, rather than limiting eligibility to families making less than $50,000 a year, respondents were more likely to view the policy as fair. Additionally, when tuition-free college policies incorporate academic merit requirements, the public is more likely to support the policy and more likely to view the policy as fair. This suggests that, in line with PDT, the level of perceived deservingness and political power of target groups meaningfully shapes the level of public support for tuition-free college.

Moreover, the main results are not entirely consistent across subgroups. Older members of the public are more likely to support targeted tuition-free college, while younger respondents were more likely to support universally targeted tuition-free college. Additionally, targeted tuition-free college was more popular among respondents from the South while universal tuition-free

college was more supported in the Northeast. Finally, in opposition to previous research, the subgroup analysis for ideology reveals that the effect of policy design was not significantly moderated by whether the respondents identified as a conservative. While this is surprising, it is not without potential explanations. Compared to the policy areas studied in previous literature, such as affirmative action and welfare, tuition-free college has a less stark ideological divide and involves target populations with less salient social constructions. For instance, compared to "welfare recipients" and "racial/ethnic minority students," college students (even low-income students that meet a minimum 2.0 high school GPA requirement) are a more heterogeneous group in terms of deservingness (Bell, Forthcoming; Lawrence et al., 2013). If the policy design targeted more salient target populations that invoked significantly different social constructions among liberals and conservatives, ideology would likely have moderated the effect of policy design on public opinion.

The findings in this study make three main contributions to existing literature. First, they provide a theoretical foundation that explains the underlying mechanism driving differences in public opinion on tuition-free college policy designs—the social construction of target populations. The results demonstrate that the political power and perceived deservingness of the target populations invoked in policy designs are important in shaping whether tuition-free college commands a broad swath of support among the public. These findings also extend PDT by providing valuable insight into the ways in which different subgroups of the public view design components of tuition-free college, suggesting that the public is not homogenous in the perceptions of deservingness and perceptions of fairness (Bell, Forthcoming). Specifically, the findings suggest that the political feasibility of different tuition-free college policy designs will depend on the region and age of the constituency. Together, these findings support the key hypotheses regarding the role of social constructions in shaping public opinions of tuition-free college, demonstrating the explanatory power of PDT in the study of higher education policy processes.

Second, the findings of this study empirically assess key propositions made in current policy discussions regarding the most feasible and sustainable tuition-free college policy design (Garcia, 2018; Millett, 2017; Tisch, 2018). By shedding light on the political dynamics of public opinion on tuition-free college, this study advances current discussions on political feasibility, which have almost solely focused on the funding streams and neglected the influences of political constituencies (Garcia, 2018; Millett, 2017; Tisch, 2018). Given the challenges many tuition-free college policies have already had maintaining sustainability in funding and political support (Oregon, for instance), it is imperative to better understand which programs are likely to mobilize an active constituency committed to its longevity. In a representative democratic system in which political elites must justify policies to the public in order to get reelected, scholars interested in policy design and tuition-free college must recognize that "there

is social value in making policies correspond to common perceptions of fairness" (Weimer & Vining, 2017, p. 141). When policies are perceived as legitimate and enjoy support from political elites and the public, they gain constituencies committed to retaining the status quo, which make it harder to abolish or disinvest in programs (Campbell, 2012; Hacker, 2004; May, 1991). This study reveals that the arguments made by Mishory (2018b) regarding the benefits of universally designed tuition-free college policies ring true empirically—universal tuition-free college was more likely to draw a broader base of support among the public. This means that designing tuition-free college with universal eligibility instead of a family income cap may reduce the likelihood of disinvestment and increase the sustainability, especially if the policy is located in the Northeast (Hacker, 2004; Mettler & Stonecash, 2008).

Finally, the findings on the inclusion of merit requirements increasing policy support reveal the potential for degenerative politics in tuition-free college policies (Schneider & Ingram, 2012). There is a substantial body of evidence suggesting that merit-based financial aid widens the gap between rich and poor in college access and success (Dynarski, 2000, 2002; Heller & Marin, 2002). In fact, recent experimental evidence suggests that the inclusion of merit requirements may undermine the ability of tuition-free college policies to expand college access and affordability and reinforce existing inequality (Harris et al., 2018). Therefore, if tuition-free college policies become the next form of merit-based aid, they may fail to accomplish the goals of expanding college access and success.[8] This means that the most politically feasible design may not necessarily be the most effective for expanding college access and success. Moving forward, scholars should be cognizant of this potential tension between equity and political feasibility and be ready to aid policymakers in striking an effective compromise.

This paper represents the first step toward understanding the impact of policy design on public support for tuition-free college. That said, there is much more work to do in better understanding the relationship between tuition-free college policy designs and sustainability. For instance, a limitation of this study is the inability to capture which public preferences may matter most to policymakers. There is some debate in political science research on whether policymakers exhibit differential responsiveness to different subgroups of the population—some studies find that the actions of policymakers are more reflective of policy preferences of higher income citizens (Gilens, 2005, 2009), while others find an equal level of responsiveness across the socioeconomic spectrum (Soroka & Wlezien, 2008). In the future, research investigating the influence of policy design should analyze whether policymakers are responsive to some groups more than others in the context of tuition-free college. It is entirely possible that groups like the middle-class or the wealthy could have more sway over political decisions about policy design, which could influence the anticipatory feedback calculations of politicians hoping to gain a plurality of support in the next election. This empirical question should be the subject of

future research on policymaking in higher education. Future research should also address the impacts of other elements of design on the feasibility and sustainability of tuition-free college and investigate the politics involved in the design and adoption of promise policies. It is possible, for instance, that whether the aid is last-dollar or first-dollar will have more of a substantive impact than the target population—this should be tested in future research especially given the somewhat modest size of the effects for the targeting treatment. The most effective, feasible, and sustainable tuition-free college policy is still up for debate. Higher education policy scholars should be weighing into this debate as policymakers look to balance politics, economics, and effectiveness of tuition-free college.

Notes

1. In addition to eligibility requirements, tuition-free college programs also vary in terms of whether they are publicly or privately funded, whether they are last-dollar or first-dollar, whether they apply only to two-year colleges instead of all in-state colleges, whether they include student supports, post-graduation residency requirements, and whether they cover just tuition and fees or the full cost of attending college. For a comprehensive list of the variation in policy design see Perna and Leigh (2017).
2. Appendix C displays the randomization check, which was conducted using seemingly unrelated regressions where I predict each covariate with an indicator for each of the four treatment groups. The results provide evidence of successful randomization.
3. It is important to note that while the survey experimental design is optimal for identifying causal effects, survey experiments based on survey vignettes produce estimates of stated preferences and not necessarily revealed preferences. Indeed, when the full sociopolitical context comes into play in the case of natural experiments, preferences may be different than they would be in a survey (Barabas & Jerit, 2010).
4. This technique simplifies the variation in the dependent variables utilized in the formal analysis (measured as 1–5 scales) but provides an easily interpretable representation of the variation across treatment groups.
5. I also conducted these models as ordinal logistic regressions and the results are consistent, although less easily interpretable. I also perform the analysis without the post-stratification weights and find that the results are consistent across specifications.
6. Each of the following tables include covariates and the full results for each control variable can be viewed in the Appendix.
7. Regardless of policy design, higher income respondents are less likely to support tuition-free college and are less likely to view tuition-free college as fair.
8. It should be noted, however, that in this study the minimum high school GPA requirement is substantially lower than merit-based aid programs like the Georgia HOPE, which require a 3.0 GPA.

Acknowledgments

The author is thankful for the support of Deven Carlson, Nina Carlson, Hank Jenkins-Smith, and Carol Silva.

Disclosure statement

No potential conflict of interest was reported by the author.

Funding

The survey data collection was funded and implemented by the Center for Risk & Crisis Management at the University of Oklahoma.

References

Andrews, R. J., DesJardins, S., & Ranchhod, V. (2010). The effects of the Kalamazoo promise on college choice. *Economics of Education Review*, *29*(5), 722–737. doi:10.1016/j.econedurev.2010.05.004

Barabas, J., & Jerit, J. (2010). Are survey experiments externally valid? *American Political Science Review*, *104*(2), 226–242. doi:10.1017/S0003055410000092

Bartik, T., Eberts, R., & Huang, W.-J. (2010). *The Kalamazoo promise, and enrollment and achievement trends in Kalamazoo public schools*. Kalamazoo, MI: Upjohn Institute.

Bartik, T. J., Hershbein, B. J., & Lachowska, M. (2015). *The effects of the Kalamazoo promise scholarship on college enrollment, persistence, and completion* (SSRN Scholarly Paper No. ID 2624727). Kalamazoo, MI: Upjohn Institute.

Bartik, T. J., & Lachowska, M. (2013). The short-term effects of the Kalamazoo promise scholarship on student outcomes. In *New analyses of worker well-being, research in labor economics* (Vol. 38, pp. 37–76). Bingley, UK: Emerald Group Publishing Limited. Retrieved from http://dx.doi.org/10.1108/S0147-9121(2013)0000038002

Bell, E. (Forthcoming). Deserving to whom? The heterogeneous effects of social constructions on mass opinion. *Policy Studies Journal*.

Boushey, G. (2016). Targeted for diffusion? How the use and acceptance of stereotypes shape the diffusion of criminal justice policy innovations in the American states. *American Political Science Review*, *110*(1), 198–214. doi:10.1017/S0003055415000532

Bozick, R., Gonzalez, G., & Engberg, J. (2015). Using a merit-based scholarship program to increase rates of college enrollment in an urban school district: The case of the pittsburgh promise. *Journal of Student Financial Aid*, *45*, Article 2.

Callahan, M., Perna, L. W., Yamashita, M., Wright, J., & Santillan, S. (2018). *2018 indicators of higher education equity in the United States: Historical trend report*. The Pell Institute for the Study of Opportunity in Higher Education, Council for Opportunity in Education and Alliance for Higher Education and Democracy of the University of Pennsylvania, Philadelphia, Pennsylvania.

Campbell, A. L. (2012). Policy makes mass politics. *Annual Review of Political Science*, *15*(1), 333–351. doi:10.1146/annurev-polisci-012610-135202

Carruthers, C. K., & Fox, W. F. (2016). Aid for all: College coaching, financial aid, and post-secondary persistence in Tennessee. *Economics of Education Review*, *51*, 97–112. doi:10.1016/j.econedurev.2015.06.001

Doyle, W. R. (2012). The politics of public college tuition and state financial aid. *The Journal of Higher Education*, *83*(5), 617–647. doi:10.1353/jhe.2012.0033

Dynarski, S. (2000). *Hope for whom? Financial aid for the middle class and its impact on college attendance* (Working Paper No. 7756). Cambridge, MA: National Bureau of Economic Research.

Dynarski, S. (2002). The behavioral and distributional implications of aid for college. *American Economic Review*, *92*(2), 279–285. doi:10.1257/000282802320189401

Gándara, D. (2019). How the sausage is made: An examination of a state funding model design process. *The Journal of Higher Education*, 1–30. doi:10.1080/00221546.2019.1618782

Garcia, S. (2018). *4 principles for a free community college program that works for all*. Retrieved from https://www.americanprogress.org/issues/education-postsecondary/news/2018/05/24/451337/4-principles-free-community-college-program-works/

Gerchick, A. (2018). *Americans overwhelmingly embrace free college tuition's promise of economic opportunity*. Retrieved from https://www.freecollegenow.org/poll_econopp_feb

Gilens, M. (2005). Inequality and democratic responsiveness. *Public Opinion Quarterly*, *69*(5), 778–796. doi:10.1093/poq/nfi058

Gilens, M. (2009). Preference gaps and inequality in representation. *PS: Political Science & Politics*, *42*(2), 335–341. doi:10.1017/S1049096509090441

Gonzalez, G. C., Bozick, R., Daugherty, L., Scherer, E., Singh, R., Suárez, M. J., & Ryan, S. (2014). *Transforming an urban school system – progress of new haven school change and new haven promise education reforms (2010–2013)*. Santa Monica, CA: RAND Corporation.

Gurantz, O. (2019). What does free community college buy? Early Impacts from the Oregon Promise. *Journal of Policy Analysis and Management*. Retrieved from https://doi.org/10.1002/pam.22157

Hacker, J. S. (2004). Privatizing risk without privatizing the welfare state: The hidden politics of social policy retrenchment in the United States. *The American Political Science Review*, *98*(2), 243. doi:10.1017/S0003055404001121

Harris, D. N., Farmer-Hinton, R., Kim, D., Diamond, J., Reavis, B., Rifelj, K. K., & Carl, B. (2018). The promise of free college (and its potential pitfalls). *Brown Center for Education Policy, the Brookings Institution*, 38.

Heller, D. E., & Marin, P. (2002). *Who should we help? The negative social consequences of merit scholarships*. Retrieved from https://eric.ed.gov/?id=ED468845

Hillman, N. W., Tandberg, D. A., & Sponsler, B. A. (2015). Public policy and higher education: Strategies for framing a research agenda. *ASHE Higher Education Report*, *41*(2), 1–98. doi:10.1002/aehe.2015.41.issue-2

Jakobsen, T. G. (2011). Welfare attitudes and social expenditure: Do regimes shape public opinion? *Social Indicators Research*, *101*(3), 323–340. doi:10.1007/s11205-010-9666-8

Jones, J. (2015). U.S. Parents' college funding worries are top money concern. *Gallup*. Retrieved from https://news.gallup.com/poll/182537/parents-college-funding-worries-top-money-concern.aspx

Lasswell, H. D. (1971). *A pre-view of policy sciences*. Princeton, NJ: American Elsevier Pub. Co.

Lawrence, E., Stoker, R., & Wolman, H. (2013). The effects of beneficiary targeting on public support for social policies. *Policy Studies Journal*, *41*(2), 199–216. doi:10.1111/psj.2013.41.issue-2

LeGower, M., & Walsh, R. (2017). Promise scholarship programs as place-making policy: Evidence from school enrollment and housing prices. *Journal of Urban Economics*, *101*(SupplementC), 74–89. doi:10.1016/j.jue.2017.06.001

Lobosco, K. (2017, August 22). Oregon promised free tuition. Now it's cutting back. *CNNMoney*. Retrieved from https://money.cnn.com/2017/08/22/pf/college/oregon-free-tuition-promise-scholarship/index.html

May, P. J. (1991). Reconsidering policy design: Policies and publics. *Journal of Public Policy*, *11*(2), 187–206. doi:10.1017/S0143814X0000619X

McClendon, M., Cohen-Vogel, L., & Wachen, J. (2003). Understanding education policy-making and policy change in the American states: Learning from contemporary policy

theory. In *Handbook of education politics and policy* (2nd ed., pp. 86–117). Routledge Handbooks Online.

McLendon, M. K. (2003). The politics of higher education: Toward an expanded research agenda. *Educational Policy*, *17*(1), 165–191. Retrieved from https://doi.org/10.1177/0895904802239291

Mettler, S. (2007). *Soldiers to citizens: The G.I. Bill and the making of the greatest generation* (1 ed.). Oxford, UK: Oxford University Press.

Mettler, S., & Stonecash, J. M. (2008). Government program usage and political voice. *Social Science Quarterly*, *89*(2), 273–293. doi:10.1111/j.1540-6237.2008.00532.x

Miller-Adams, M. (2015). *Promise nation: Transforming communities through place-based scholarships*. Kalamazoo, MI: Upjohn Press.

Millett, C. (2017). Designing sustainable funding for college promise initiatives. *ETS Research Report Series*, *2017*(1), 1–55. doi:10.1002/ets2.12161

Mishory, J. (2018a). *The future of statewide college promise programs*. Retrieved from https://tcf.org/content/report/future-statewide-college-promise-programs/

Mishory, J. (2018b, July 12). *"Free College:" Here to stay?* Retrieved from https://tcf.org/content/report/free-college-stay/

Ness, E. (2008). *Merit aid and the politics of education*. New York, NY: Routledge.

Ness, E. C. (2010). The politics of determining merit aid eligibility criteria: An analysis of the policy process. *The Journal of Higher Education*, *81*(1), 33–60. doi:10.1080/00221546.2010.11778969

Ness, E. C., & Gándara, D. (2014). Ideological think tanks in the states: An inventory of their prevalence, networks, and higher education policy activity. *Educational Policy*, *28*(2), 258–280. doi:10.1177/0895904813515328

Page, L. C., Iriti, J. E., Lowry, D. J., & Anthony, A. M. (2018). The promise of place-based investment in postsecondary access and success: Investigating the impact of the Pittsburgh promise. *Education Finance and Policy*, *14*(4), 1–60.

Perna, L. W., & Leigh, E. W. (2017). Understanding the promise: A typology of state and local college promise programs. *Educational Researcher, 47*, 155–180.

Pierce, J., Siddiki, S., Jones, M., Schumacher, K., Pattison, A., & Peterson, H. (2014). Social construction and policy design: A review of past applications. *Policy Studies Journal*, *42*(1), 1–29. doi:10.1111/psj.2014.42.issue-1

Reich, G., & Barth, J. (2010). Educating citizens or defying federal authority? A comparative study of in-state tuition for undocumented students. *Policy Studies Journal*, *38*(3), 419–445. doi:10.1111/psj.2010.38.issue-3

Schneider, A., & Ingram, H. (1993). Social construction of target populations: Implications for politics and policy. *American Political Science Review*, *87*(2), 334–347. doi:10.2307/2939044

Schneider, A. L., & Ingram, H. M. (2012). *Deserving and entitled: Social constructions and public policy*. Albany, NY: SUNY Press.

Schneider, A. L., & Ingram, H. M. (2019). Social constructions, anticipatory feedback strategies, and deceptive public policy. *Policy Studies Journal*, *47*(2), 206–236. doi:10.1111/psj.v47.2

Sohn, H., Rubenstein, R., Murchie, J., & Bifulco, R. (2017). Assessing the effects of place-based scholarships on urban revitalization: The case of say yes to education. *Educational Evaluation and Policy Analysis*, *39*(2), 198–222. doi:10.3102/0162373716675727

Soroka, S. N., & Wlezien, C. (2008). On the limits to inequality in representation. *PS: Political Science & Politics*, *41*(2), 319–327.

Soss, J., & Schram, S. F. (2007). A public transformed? Welfare reform as policy feedback. *American Political Science Review*, *101*, 111–127. doi:10.1017/S0003055407070049

Stein, S. J. (2001). 'These are your Title I students': Policy language in educational practice. *Policy Sciences*, *34*(2), 135–156. doi:10.1023/A:1010323227348

Swanson, E., Watson, A., Ritter, G., & Nichols, M. (2017). *Promises fulfilled? A systematic review of the impacts of promise programs* (SSRN Scholarly Paper No. ID 2849194). Social Science Research Network.

Tisch, M. (2018). *Free-college programs are valuable, but must be done right*. Retrieved from http://thehill.com/opinion/education/389399-free-college-programs-are-valuable-but-must-be-done-right

Weimer, D., & Vining, A. (2017). *Policy analysis: Concepts and practice*. New York, NY: Taylor & Francis.

Wilson, W. J. (2012). *The truly disadvantaged: The inner city, the underclass, and public policy* (2nd ed.). Chicago, IL: University of Chicago Press.

Appendix A

(1) Full Treatment Prompts

Prompt 1: Imagine the following situation: Your state has implemented a new policy that fully covers tuition and fees at any college in the state for resident students with family incomes less than $50,000. Students receiving this aid must maintain a 2.0 grade point average (GPA) (C average) or higher. Officials in your state are divided on the best design of the policy. On one hand, Rebecca Wilson, President of the flagship university, argues that while she appreciates expanded state support for low-income students with high GPAs, she also believes that the current policy should be expanded to include middle-class families struggling to pay for college and low-income students below the current GPA threshold. On the other hand, State Department of Education Secretary, Emma McDaniel argues that the current policy targets those who need help the most and would not be financially sustainable if all students were eligible.

Prompt 2: Imagine the following situation: Your state has implemented a new policy that fully covers tuition and fees at any college in the state for resident students with family incomes less than $50,000. There is no grade point average (GPA) requirement for students receiving financial aid through this program. Officials in your state are divided on the best design of the policy. On one hand, Rebecca Wilson, President of the flagship university, argues that while she appreciates expanded state support for low-income students, she believes that the current policy should be expanded to include middle-class families also struggling to pay for college. On the other hand, State Department of Education Secretary, Emma McDaniel argues that the current policy targets those who need help the most and would not be financially sustainable if all students were eligible.

Prompt 3: Imagine the following situation: Your state has implemented a new policy that fully covers tuition and fees at any college in the state for resident students, regardless of family income. Students receiving this aid must maintain a 2.0 grade point average (GPA) (C average) or higher. Officials in your state are divided on the best design of the policy. On one hand, Rebecca Wilson, President of the flagship university argues that while she appreciates expanded state support for students with high GPAs, she also believes that the current policy should be expanded to include students below the current GPA threshold. On the other hand, State Department of Education Secretary, Emma McDaniel argues that the current policy targets those who need help the most and would not be financially sustainable if all students were eligible.

Prompt 4: Imagine the following situation: Your state has implemented a new policy that fully covers tuition and fees at any college in the state for resident students, regardless of family income. There is no grade point average (GPA) requirement for students receiving financial aid through this program. Officials in your state are divided on the best design of the policy. On one hand, Emma McDaniel, State Department of Education Secretary, argues the policy is not financially sustainable and should be targeted at the students who need help the most. On the other hand, President of the flagship university, Rebecca Wilson, argues that she appreciates expanded state support for both middle-class and low-income students, as well as those students whose GPAs prevent them from receiving other forms of financial aid.

(2) Survey Methodology & Weighting

The survey respondents were recruited by Qualtrics through partnerships with 20 online panel firms that provide a set of diverse respondents across the country. Qualtrics aggregates a sample that meets the quotas and demographic proportions needed for a nationally representative sample. The quotas set in this survey required every respondent to be age 18 + and 50% of respondents to have children anywhere between 5 years to 25 years of age. The

standard post-stratification weights are created by first calculating the proportion of the U.S. population that shares the demographic characteristics of each respondent according to Census data. Then, I calculate the proportion of the sample that shares the demographics of each respondent. Finally, I divide the population proportion from the Census by the sample proportion to provide a weight for each respondent.

Table A1. Demographic attributes of survey respondents compared to 2016 US census estimation.

Demographic	Percentage of U.S. population 18 Yrs. of age and above[a]	Survey respondents (%)
Gender		
Female	51.3	61.2
Male	48.7	38.8
Age		
18–29	21.5	18.8
30–49	33.3	43.2
50+	45.1	38.0
Education		
High School Graduate or higher	87.4	98.1
Bachelor's Degree or higher	31.2	26.2
Ethnicity		
Hispanic	15.8	12.5
Non-Hispanic	84.2	87.5
Race		
White	78.5	78.9
Black or African American	12.8	11.2
American Indian or Alaska Native	1.1	0.8
Asian	5.6	6.6
Native Hawaiian or Pacific Islander	0.2	0.04
Two or more races	1.8	1.5
Household income		
$0–49,999	46.7	46.6
$50,000–99,999	29.8	36.2
$100,000–149,999	13.0	11.5
$150,000–or more	10.4	5.7
Census region		
Northeast	18.0	18.9
Midwest	21.2	22.5
South	37.8	36.1
West	23.1	22.5

[a]U.S. Population estimates exclude AK, HI, and the District of Columbia. Population estimates were obtained from the U.S. Census Annual Estimates of the Resident Population by Sex, Age, Race, and Hispanic Origin for the United States and States: April 1, 2010, to July 1, 2016.

Appendix B. Models with Covariates

Table B1. Regression results with results for each treatment group.

Explanatory variables	(1) Support	(2) Fairness	(3) Support	(4) Fairness	(5) Support	(6) Fairness	(7) Support	(8) Fairness
Family income cap & merit requirement	0.0584	0.0543						
	(0.051)	(0.049)						
Family income cap & no merit requirement			−0.067	−0.224***				
			(0.053)	(0.060)				
Universal & merit requirement					0.083*	0.196***		
					(0.045)	(0.049)		
Universal & no merit requirement							−0.088*	−0.051
							(0.050)	(0.053)
Controls								
Exposure to tuition-free college policy	0.061	0.014	0.061	0.017	0.060	0.013	0.061	0.013
	(0.046)	(0.051)	(0.046)	(0.051)	(0.046)	(0.051)	(0.046)	(0.051)
White	−0.135**	0.011	−0.137***	0.007	−0.136***	0.009	−0.134**	0.012
	(0.053)	(0.056)	(0.053)	(0.056)	(0.053)	(0.056)	(0.053)	(0.056)
Male	0.031	0.067	0.030	0.065	0.031	0.067	0.032	0.068
	(0.044)	(0.047)	(0.044)	(0.046)	(0.044)	(0.046)	(0.044)	(0.046)
Income	−0.022***	−0.0147**	−0.022***	−0.0151***	−0.022***	−0.0143**	−0.022***	−0.0145**
	(0.005)	(0.006)	(0.005)	(0.006)	(0.005)	(0.006)	(0.005)	(0.006)
Age	0.000	−0.002	0.000	−0.002	0.000	−0.002	0.000	−0.002
	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)
Northeast	0.087	0.051	0.085	0.049	0.083	0.045	0.087	0.050
	(0.065)	(0.069)	(0.064)	(0.068)	(0.065)	(0.069)	(0.065)	(0.069)
South	0.072	0.076	0.074	0.084	0.071	0.075	0.068	0.073
	(0.060)	(0.059)	(0.060)	(0.059)	(0.060)	(0.059)	(0.060)	(0.059)
Midwest	0.064	0.088	0.066	0.094	0.064	0.088	0.062	0.087
	(0.066)	(0.071)	(0.066)	(0.071)	(0.066)	(0.070)	(0.066)	(0.071)
Education	0.004	0.000	0.004	−0.001	0.003	−0.003	0.004	−0.001
	(0.014)	(0.015)	(0.014)	(0.015)	(0.014)	(0.015)	(0.014)	(0.015)
Ideology	−0.043***	−0.001	−0.043***	−0.001	−0.043***	−0.001	−0.043***	0.000

(*Continued*)

Table B1. (Continued).

Explanatory variables	(1) Support	(2) Fairness	(3) Support	(4) Fairness	(5) Support	(6) Fairness	(7) Support	(8) Fairness
	(0.016)	(0.018)	(0.016)	(0.019)	(0.016)	(0.019)	(0.016)	(0.018)
Party ID-republican	−0.011	−0.124**	−0.0107	−0.128**	−0.00767	−0.120**	−0.00847	−0.122**
	(0.055)	(0.060)	(0.055)	(0.061)	(0.055)	(0.060)	(0.055)	(0.059)
Voted in last election	0.0762	0.0361	0.079	0.0457	0.0795	0.0439	0.0761	0.036
	(0.054)	(0.057)	(0.054)	(0.057)	(0.054)	(0.057)	(0.054)	(0.057)
Baseline support	0.473***	0.351***	0.475***	0.354***	0.475***	0.354***	0.473***	0.351***
	(0.025)	(0.026)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.026)
Constant	4.890***	4.293***	4.925***	4.365***	4.892***	4.269***	4.929***	4.321***
	(0.118)	(0.138)	(0.117)	(0.137)	(0.119)	(0.138)	(0.118)	(0.138)
N	2,624	2,614	2,624	2,614	2,624	2,614	2,624	2,614
R^2	0.278	0.164	0.278	0.173	0.278	0.171	0.278	0.164

Each model includes post-stratification weights and controls for the pretest measure of support for tuition-free community college policies (Baseline Support). Robust Standard Errors in parentheses. *$p < 0.10$ **$p < 0.05$ ***$p < 0.01$.

Table B2. Regression results isolating the effect of each treatment dimension.

Explanatory variables	(1) Support	(2) Fairness	(3) Support	(4) Fairness	(5) Support	(6) Fairness	(7) Support	(8) Fairness
Family income cap & merit requirement vs. universal & merit requirement	−0.023	−0.101*						
	(0.058)	(0.057)						
Family income cap & no merit requirement vs. universal & no merit requirement			0.011	−0.139**				
			(0.064)	(0.070)				
Family income cap & merit requirement vs. family income cap & no merit requirement					0.109*	0.226***		
					(0.065)	(0.068)		
Universal & merit requirement vs. universal & no merit requirement							0.129**	0.178***
							(0.057)	(0.061)
Controls								
Exposure to tuition-free college Policy	0.077	−0.066	0.051	0.104	0.097	0.077	−0.002	−0.054
	(0.063)	(0.066)	(0.066)	(0.076)	(0.063)	(0.072)	(0.065)	(0.071)
White	−0.195***	−0.036	−0.070	0.051	−0.087	0.092	−0.183***	−0.067
	(0.074)	(0.070)	(0.075)	(0.089)	(0.078)	(0.077)	(0.070)	(0.082)
Male	0.016	0.091	0.048	0.050	−0.034	0.032	0.080	0.084
	(0.058)	(0.057)	(0.064)	(0.072)	(0.064)	(0.068)	(0.058)	(0.062)
Income	−0.020***	−0.013*	−0.024***	−0.016*	−0.023***	−0.0162**	−0.021***	−0.014*
	(0.007)	(0.007)	(0.007)	(0.009)	(0.007)	(0.008)	(0.007)	(0.008)
Age	−0.002	−0.001	0.002	−0.004	0.0045**	−0.001	−0.00405**	−0.003
	(0.002)	(0.002)	(0.002)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)
Northeast	0.063	0.000	0.111	0.088	−0.079	−0.058	0.217***	0.131
	(0.085)	(0.089)	(0.098)	(0.105)	(0.099)	(0.095)	(0.080)	(0.096)
South	0.004	0.048	0.148	0.099	0.134	0.118	0.013	0.039
	(0.077)	(0.073)	(0.092)	(0.095)	(0.090)	(0.089)	(0.077)	(0.075)
Midwest	0.024	0.056	0.081	0.088	−0.019	0.021	0.156*	0.162*
	(0.088)	(0.088)	(0.099)	(0.109)	(0.097)	(0.106)	(0.085)	(0.091)
Education	0.012	0.018	−0.007	−0.025	0.012	−0.014	−0.006	0.011
	(0.019)	(0.017)	(0.019)	(0.024)	(0.020)	(0.022)	(0.017)	(0.020)
Ideology	−0.035	−0.0376*	−0.0528**	0.037	−0.071***	−0.009	−0.028	0.001
	(0.023)	(0.022)	(0.022)	(0.029)	(0.024)	(0.030)	(0.021)	(0.022)

(*Continued*)

Table B2. (Continued).

Explanatory variables	(1) Support	(2) Fairness	(3) Support	(4) Fairness	(5) Support	(6) Fairness	(7) Support	(8) Fairness
Party ID-Republican	0.0721	0.00864	−0.106	−0.276***	−0.0356	−0.215**	0.0237	−0.0317
	(0.078)	(0.069)	(0.076)	(0.096)	(0.078)	(0.093)	(0.076)	(0.075)
Voted in last election	0.168**	0.0434	−0.00052	0.0315	0.0569	0.104	0.0795	−0.00663
	(0.077)	(0.070)	(0.075)	(0.090)	(0.082)	(0.089)	(0.068)	(0.072)
Baseline support	0.479***	0.340***	0.464***	0.378***	0.416***	0.362***	0.523***	0.344***
	(0.033)	(0.034)	(0.039)	(0.035)	(0.038)	(0.035)	(0.031)	(0.034)
Constant	4.980***	4.431***	4.844***	4.383***	4.649***	4.140***	5.096***	4.302***
	(0.148)	(0.168)	(0.190)	(0.215)	(0.177)	(0.199)	(0.158)	(0.191)
N	1,362	1,352	1,262	1,262	1,310	1,301	1,314	1,313
R^2	0.305	0.178	0.263	0.181	0.254	0.193	0.331	0.171

Each model includes post-stratification weights and controls for the pretest measure of support for tuition-free community college policies (Baseline Support). Robust Standard Errors in parentheses. *$p < 0.10$ **$p < 0.05$ ***$p < 0.01$.

Table B3. Regression results, by conservative ideology.

Variables	Model 1: support	Model 2: fairness
Family income cap*Conservative	−0.131*	−0.153**
	(0.078)	(0.078)
Academic merit requirement*Conservative	0.153*	0.137*
	(0.079)	(0.078)
Conservative	−0.141**	−0.0735
	(0.070)	(0.067)
Family Income Cap	0.0171	−0.102**
	(0.041)	(0.042)
Academic merit requirement	0.0462	0.121***
	(0.041)	(0.042)
Exposure to tuition-free college policy	0.0182	0.00103
	(0.041)	(0.041)
White	−0.126***	−0.065
	(0.043)	(0.045)
Male	0.0483	0.0777**
	(0.038)	(0.039)
Income	−0.0169***	−0.0139***
	(0.005)	(0.004)
Age	−0.00176	−0.00286**
	(0.001)	(0.001)
Northeast	0.054	−0.0218
	(0.056)	(0.056)
South	0.0511	0.036
	(0.048)	(0.048)
Midwest	0.0369	0.0333
	(0.053)	(0.053)
Education	0.011	0.00724
	(0.011)	(0.011)
Voted in last election	0.0775*	0.0591
	(0.042)	(0.043)
Baseline support	−0.459***	−0.347***
	(0.020)	(0.019)
Constant	4.720***	4.309***
	(0.099)	(0.102)
N	2,734	2,725
R^2	0.243	0.163

Each model includes post-stratification weights and controls for the pretest measure of support for tuition-free community college policies (Baseline Support). Robust Standard Errors in parentheses. *$p < 0.10$ **$p < 0.05$ ***$p < 0.01$.

Table B4. Regression results, by region.

	Northeast		Midwest		South		West	
Variables	(1) Support	(2) Fairness	(3) Support	(4) Fairness	(5) Support	(6) Fairness	(7) Support	(8) Fairness
Family income cap*Region	−0.255**	−0.162	−0.155	−0.120	0.234***	0.152	0.060	0.046
	(0.102)	(0.112)	(0.104)	(0.116)	(0.089)	(0.094)	(0.104)	(0.105)
Academic merit requirement*Region	0.018	−0.061	0.005	−0.015	−0.073	0.007	0.086	0.061
	(0.102)	(0.113)	(0.107)	(0.119)	(0.089)	(0.095)	(0.106)	(0.107)
Region	0.149*	0.086	0.081	0.107	−0.057	−0.043	−0.148	−0.127
	(0.086)	(0.102)	(0.098)	(0.104)	(0.079)	(0.082)	(0.090)	(0.095)
Family income cap	0.046	−0.0851*	0.034	−0.0869*	−0.0894*	−0.171***	−0.016	−0.125**
	(0.048)	(0.050)	(0.048)	(0.050)	(0.053)	(0.058)	(0.048)	(0.053)
Academic merit requirement	0.107**	0.206***	0.108**	0.198***	0.139***	0.195***	0.0901*	0.182***
	(0.049)	(0.052)	(0.049)	(0.051)	(0.054)	(0.059)	(0.049)	(0.053)
Exposure to tuition-free college policy	0.060	0.008	0.0655	0.005	0.0667	0.00986	0.063	0.00363
	(0.046)	(0.051)	(0.046)	(0.051)	(0.046)	(0.051)	(0.046)	(0.051)
White	−0.131**	−0.001	−0.139***	−0.0112	−0.129**	0.00072	−0.135***	−0.0055
	(0.051)	(0.056)	(0.051)	(0.056)	(0.052)	(0.056)	(0.051)	(0.056)
Male	0.030	0.068	0.0264	0.0677	0.0224	0.0646	0.0284	0.0688
	(0.044)	(0.046)	(0.044)	(0.046)	(0.044)	(0.046)	(0.044)	(0.046)
Income	−0.022***	−0.015***	−0.022***	−0.015***	−0.022***	−0.015***	−0.021***	−0.015***
	(0.005)	(0.006)	(0.005)	(0.006)	(0.005)	(0.006)	(0.005)	(0.006)
Education	0.004	−0.004	0.00314	−0.0042	0.00408	−0.0037	0.00423	−0.0036
	(0.014)	(0.015)	(0.014)	(0.015)	(0.014)	(0.015)	(0.014)	(0.015)
Ideology	−0.045***	−0.006	−0.044***	−0.005	−0.044***	−0.0051	−0.045***	−0.0055
	(0.016)	(0.019)	(0.016)	(0.019)	(0.016)	(0.019)	(0.016)	(0.019)
Party ID-Republican	−0.006	−0.120**	−0.0045	−0.118**	−0.0061	−0.121**	−0.0083	−0.123**
	(0.054)	(0.061)	(0.055)	(0.060)	(0.055)	(0.061)	(0.054)	(0.061)
Voted in last election	0.071	0.038	0.0763	0.0384	0.0759	0.0381	0.0749	0.0364
	(0.053)	(0.055)	(0.053)	(0.055)	(0.052)	(0.055)	(0.053)	(0.055)
Baseline support	0.475***	0.355***	0.476***	0.356***	0.475***	0.355***	0.476***	0.356***
	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)
Constant	4.889***	4.265***	4.906***	4.264***	4.929***	4.290***	4.952***	4.312***
	(0.102)	(0.119)	(0.104)	(0.121)	(0.109)	(0.125)	(0.103)	(0.121)
N	2,634	2,624	2,634	2,624	2,634	2,624	2,634	2,624
R^2	0.282	0.176	0.281	0.176	0.283	0.177	0.281	0.176

Each model includes post-stratification weights and controls for the pretest measure of support for tuition-free community college policies (Baseline Support). Robust Standard Errors in parentheses. *$p < 0.10$ **$p < 0.05$ ***$p < 0.01$.

Table B5. Regression results, by education.

Variables	(1) Support	(2) Fairness
Family income cap*Education	0.024	−0.022
	(0.024)	(0.026)
Academic merit requirement*Education	0.031	0.0570**
	(0.024)	(0.026)
Education	−0.026	−0.022
	(0.023)	(0.025)
Family income cap	−0.109	−0.015
	(0.117)	(0.123)
Academic merit requirement	−0.028	−0.064
	(0.121)	(0.128)
Exposure to tuition-free college policy	0.061	0.019
	(0.046)	(0.051)
White	−0.137***	0.009
	(0.053)	(0.056)
Male	0.032	0.069
	(0.043)	(0.046)
Income	−0.0218***	−0.0147***
	(0.005)	(0.006)
Age	0.000	−0.002
	(0.001)	(0.002)
Northeast	0.083	0.039
	(0.065)	(0.068)
South	0.070	0.073
	(0.060)	(0.059)
Midwest	0.059	0.077
	(0.066)	(0.069)
Ideology	−0.0432***	−0.003
	(0.016)	(0.018)
Party ID-Republican	−0.013	−0.122**
	(0.055)	(0.059)
Voted in last election	0.078	0.046
	(0.054)	(0.057)
Baseline support	0.476***	0.355***
	(0.025)	(0.025)
Constant	4.990***	4.375***
	(0.153)	(0.163)
N	2,624	2,614
R^2	0.281	0.180

Each model includes post-stratification weights and controls for the pretest measure of support for tuition-free community college policies (Baseline Support). Robust Standard Errors in parentheses. *$p < 0.10$ **$p < 0.05$ ***$p < 0.01$.

Table B6. Regression results, by income.

Variables	Model 1: Support	Model 2: Fairness
Family income cap*Income	0.001	−0.008
	(0.009)	(0.010)
Academic merit requirement*Income	0.010	0.014
	(0.009)	(0.010)
Income	−0.0277***	−0.0181**
	(0.008)	(0.009)
Family income cap	−0.009	−0.064
	(0.072)	(0.079)
Academic merit requirement	0.043	0.103
	(0.073)	(0.080)
Exposure to tuition-free college policy	0.061	0.015
	(0.046)	(0.051)
White	−0.134**	0.014
	(0.052)	(0.056)
Male	0.030	0.065
	(0.044)	(0.046)
Age	0.000	−0.002
	(0.001)	(0.002)
Northeast	0.088	0.050
	(0.065)	(0.069)
South	0.071	0.079
	(0.060)	(0.059)
Midwest	0.062	0.088
	(0.065)	(0.070)
Education	0.004	−0.002
	(0.014)	(0.015)
Ideology	−0.0438***	−0.002
	(0.016)	(0.019)
Party ID-Republican	−0.012	−0.126**
	(0.055)	(0.060)
Voted in last election	0.080	0.049
	(0.054)	(0.057)
Baseline support	0.475***	0.354***
	(0.025)	(0.025)
Constant	4.895***	4.299***
	(0.125)	(0.146)
N	2,624	2,614
R^2	0.280	0.178

Each model includes post-stratification weights and controls for the pretest measure of support for tuition-free community college policies (Baseline Support). Robust Standard Errors in parentheses. *$p < 0.10$ **$p < 0.05$ ***$p < 0.01$.

Table B7. Regression results, by age.

Variables	Model 1: support	Model 2: fairness
Family income cap*Age	0.008***	0.002
	(0.003)	(0.003)
Academic merit requirement*Age	−0.002	0.003
	(0.003)	(0.003)
Age	−0.003	−0.005
	(0.002)	(0.003)
Family income cap	−0.365***	−0.229
	(0.138)	(0.155)
Academic merit requirement	0.206	0.061
	(0.137)	(0.156)
Exposure to tuition-free college policy	0.066	0.017
	(0.046)	(0.051)
White	−0.144***	0.006
	(0.053)	(0.056)
Male	0.034	0.067
	(0.043)	(0.046)
Income	−0.0214***	−0.0150***
	(0.005)	(0.006)
Northeast	0.092	0.045
	(0.064)	(0.069)
South	0.081	0.079
	(0.060)	(0.059)
Midwest	0.071	0.089
	(0.066)	(0.071)
Education	0.004	−0.003
	(0.014)	(0.015)
Ideology	−0.0474***	−0.001
	(0.016)	(0.019)
Party ID-Republican	−0.002	−0.126**
	(0.055)	(0.060)
Voted in last election	0.075	0.043
	(0.054)	(0.056)
Baseline support	0.472***	0.355***
	(0.025)	(0.025)
Constant	4.993***	4.408***
	(0.158)	(0.178)
N	2,624	2,614
R^2	0.284	0.178

Each model includes post-stratification weights and controls for the pretest measure of support for tuition-free community college policies (Baseline Support). Robust Standard Errors in parentheses. *$p < 0.10$ **$p < 0.05$ ***$p < 0.01$.

Table B8. Regression results, by exposure to state tuition-free college policy.

Variables	(1) Support	(2) Fairness
Family income cap*Exposure to tuition-free college	0.083	0.108
	(0.092)	(0.101)
Merit requirement*Exposure to tuition-free college	0.028	−0.160
	(0.092)	(0.101)
Exposure to tuition-free college	0.007	0.046
	(0.083)	(0.090)
Family income cap	−0.021	−0.144***
	(0.051)	(0.053)
Merit requirement	0.104**	0.234***
	(0.052)	(0.055)
White	−0.137***	0.005
	(0.052)	(0.056)
Male	0.030	0.069
	(0.044)	(0.046)
Income	−0.022***	−0.015**
	(0.005)	(0.006)
Age	0.000	−0.002
	(0.001)	(0.002)
Northeast	0.090	0.051
	(0.065)	(0.068)
South	0.074	0.079
	(0.060)	(0.059)
Midwest	0.067	0.091
	(0.066)	(0.071)
Education	0.003	−0.004
	(0.014)	(0.015)
Ideology	−0.043***	−0.001
	(0.016)	(0.019)
Party ID-Republican	−0.011	−0.125**
	(0.055)	(0.061)
Voted in last election	0.081	0.048
	(0.054)	(0.057)
Baseline support	0.475***	0.356***
	(0.025)	(0.025)
Constant	4.863***	4.268***
	(0.121)	(0.141)
N	2,624	2,614
R^2	0.280	0.178

Each model includes post-stratification weights and controls for the pretest measure of support for tuition-free community college policies (Baseline Support). Robust Standard Errors in parentheses. *$p < 0.10$ **$p < 0.05$ ***$p < 0.01$.

Appendix C. Balance test

Table C1. Test of baseline equivalence.

	Treatment 1: Family income cap + Merit-based	Treatment 2: Family income cap + No merit requirement	Treatment 3: Universal + Merit-based	Treatment 4: Universal + No merit requirement
White	−0.01	0.01	0.01	0.00
	(0.02)	(0.02)	(0.02)	(0.02)
Male	−0.03	0.02	0.00	0.01
	(0.02)	(0.02)	(0.02)	(0.02)
Income	−0.05	0.15	0.14	0.08
	(0.21)	(0.20)	(0.22)	(0.21)
Age	−0.69	−1.27	0.06	0.12
	(0.71)	(0.77)	(0.81)	(0.77)
Region	−0.06	0.05	−0.03	−0.03
	(0.05)	(0.05)	(0.05)	(0.04)
Education	−0.01	−0.05	0.00	0.15
	(0.08)	(0.04)	(0.08)	(0.08)
Ideology	−0.12	0.14	−0.03	0.01
	(0.08)	(0.08)	(0.08)	(0.07)
Party ID-Republican	−0.04	0.05*	0.00	0.00
	(0.02)	(0.02)	(0.02)	(0.02)
Voted in last election	−0.01	−0.01	−0.01	−0.02
	(0.02)	(0.02)	(0.02)	(0.02)
Baseline support	−0.08	−0.01	0.06	0.07
	(0.05)	(0.05)	(0.05)	(0.05)
Joint significant chi2	9.60	16.96	3.77	10.25
Prob > chi2	0.48	0.08	0.96	0.42
N	2,638	2,638	2,638	2,638

Robust standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$; The results reveal that each Chi-squared test is unable to reject the null hypothesis that the coefficients are jointly equal to zero at the 0.05 significance level, providing evidence of successful randomization.