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# Immigration, Beneficiary Assumptions, and Welfare Support

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**Correspondence:** Hang Qi ([hangqi@um.edu.mo](mailto:hangqi@um.edu.mo))**Received:** 20 May 2025 | **Revised:** 3 December 2025 | **Accepted:** 29 December 2025**Keywords:** immigration | policy design | social welfare programs | target populations

## ABSTRACT

Previous research demonstrates that assumptions and perceptions about who benefits from welfare programs and the deservingness of those welfare beneficiaries play a considerable role in shaping individuals' welfare attitudes. However, a holistic understanding of how these assumptions and perceptions are formed remains limited. In this study, I indicate that elements of welfare policy design (e.g., means-testing rules) can shape native citizens' assumptions about immigrants as welfare beneficiaries. Through an original survey experiment on Cointegration Theorem, I find that including a means-testing rule makes respondents more likely to assume a welfare program benefits immigrants to the exclusion of native-born Americans. Such a rule also appears to increase assumptions that these programs primarily benefit low-skilled immigrants and newcomers from less developed countries, though the magnitude of these effects varies across policy domains. In the Pell Grant experiment, the effects are statistically stronger, whereas the corresponding effects in the Child Tax Credit experiment—though pointing in the same direction—are smaller and only marginally significant. Moreover, while certain assumptions—such as the exclusion assumption—are more strongly associated with welfare opposition among those with stronger anti-immigration views.

## 1 | Introduction

Existing studies suggest that in many advanced countries, issues of immigration are becoming increasingly significant and substantial (Alesina et al. 2021; Hero 2010; Römer 2023; Schmidt-Catran and Czymara 2023). In recent years, various strains of scholarship have been devoted to explaining how immigration affects redistribution policies and the support for social welfare (Garand et al. 2017; Larsen 2011; Magni 2024; Qi 2025; Steele and Perkins 2019; Van Oorschot 2006). For example, many native-born residents assume that welfare provisions in their countries benefit or even disproportionately benefit immigrants, whom they view as “less motivated, less willing, and less capable of working hard” (Schmidt-Catran and Spies 2016, 242). Consequently, support for social welfare among these citizens diminishes accordingly.

While citizens' assumptions and perceptions that immigrants are welfare beneficiaries could profoundly impact public opinion toward welfare programs and expenditures, the question of what prompts these native residents to form such assumptions initially remains unclear. To explore this question, in recent years, some scholars have begun to carry out relevant explorations and analyzes, and they find that both potential impacts of immigration on host countries and welfare policy designs (e.g., a work requirement) could shape such assumptions (Haselswerdt 2021, 2022).

While existing scholarship examines the role of welfare policy designs in the politics of immigration and social welfare, it has not adequately considered one paramount element of welfare program designs—the presence or absence of means testing. In addition, although previous research shows that native citizens'

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attitudes toward immigrants vary based on immigrants' characteristics (e.g., gender, religious belief, and educational attainment) and national background (De Coninck 2020; Hainmueller and Hopkins 2015; Strabac et al. 2016), less research has examined factors that might lead natives to associate welfare beneficiaries with different categories of immigrants. Answering these questions is essential, as immigration, race, and ethnicity have become widely recognized dimensions of the politics of redistribution in the United States (Elkjær and Iversen 2023; Garand et al. 2017). Moreover, given the current growth in immigration, the accumulation of economic pressures, and the rising inequality, delving into the micro-foundation and essence of public opinion on the welfare state could also contribute to the reform and improvement of American welfare programs.

I contend that, as one of the fundamental elements of welfare policy design, means-testing<sup>1</sup> not only determines the scope of welfare provision (Gugushvili and Van Oorschot 2020) but also plays a considerable role in shaping citizens' assumptions about immigrants' participation in welfare programs. This is because the means-testing rule highlights certain attributes of eligibility. Accordingly, the identity and deservingness of beneficiaries become more salient, shaping attitudes toward such welfare programs.

Through conducting an original survey experiment, I find that the inclusion of a means-testing rule makes respondents more likely to assume welfare programs benefit immigrants to the exclusion of native-born Americans. In addition, native citizens tend to perceive that low-skilled immigrants and newcomers from less developed countries are more likely to benefit from means-tested programs compared to high-skilled immigrants and foreigners from more developed countries. The empirical evidence for these patterns, however, is modest and differs across policy domains: the effects are more pronounced in the Pell Grant experiment—a need-based higher-education grant that might more readily activate skill and socioeconomic cues—while the corresponding patterns in the family-oriented Child Tax Credit experiment are weaker and only marginally supported. These contrasts underscore the need for caution in generalizing the effects of means-testing. Also, exploratory analyses indicate that some of these presumptions (e.g., the exclusion assumption) are more strongly associated with lower support among citizens holding stronger anti-immigration attitudes. However, despite these associative patterns, the experiment provides no evidence that means-testing itself interacts with immigration attitudes in shaping policy support—the direct interaction between the means-testing treatment and anti-immigrant sentiment is statistically indistinguishable from zero. A follow-up experiment conducted with a different survey vendor and a randomized question order yields broadly consistent results, with several differences becoming even clearer and more statistically pronounced.

These findings indicate that policy designs play a key role in the formation of social welfare policy preferences. They underscore the need for greater attention to the feedback mechanisms through which institutional structures and policy designs impact individuals' deservingness perceptions and support for social welfare (Laenen 2018, 2025; Larsen 2006, 2008). These results also contribute to a better understanding of the malleability of

assumptions about welfare beneficiaries and their ramifications on the politics of redistribution. Furthermore, since this study is directly related to the designs and rules of important government programs, it could assist policymakers in comprehending the core designs of government programs and their impact on public opinion. It could also facilitate public administrators in designing and implementing public programs that are more widely accepted, ultimately addressing issues of inequality and poverty.

## 2 | Policy Designs and Assumptions About Welfare Beneficiaries

In many advanced democracies, citizens' attitudes toward social welfare programs, to a great extent, can be explained by their political values or ideologies (Blekesaune and Quadagno 2003; Feldman and Steenbergen 2001), self-interest (Chong et al. 2001; Jæger 2006; Han and Qi 2026), institutional structures, policy designs, or administrative burden of social programs (Ashok and Huber 2020; Keiser and Miller 2020; Laenen 2018; Larsen 2008; Qi and Haselswerdt 2024), and perceptions about who benefits from these programs and the deservingness of those welfare beneficiaries (Baekgaard et al. 2023; Mårtensson et al. 2023; Petersen et al. 2011; Van Oorschot 2000). In terms of whether social welfare recipients are deserving or not, many individuals base their judgments on racial or ethnic considerations (Garand et al. 2017; Gilens 1999; Lieberman 2011). However, less explored is the question of how citizens form their ideas about who benefits from social programs initially (Haselswerdt 2022).

In the United States, race and ethnicity profoundly affect the politics and policies of the welfare state. For example, existing work shows that stereotypes about the work ethic and welfare dependence of Black people have sizeable impacts on support for social programs among Americans (Callaghan and Olson 2017; Gilens 1999; Harell and Larsen 2025; Lanford and Quadagno 2022). Additionally, because immigrants are usually stigmatized as welfare dependents and a drain on public benefits, many native citizens consider them one of the less “deserving” groups of welfare beneficiaries as well (Brady and Finnigan 2014; Levy 2021; Romero 2011).

However, not all social programs are affected by the racial or ethnic politics mentioned above. For some programs, such as Social Security and Medicare, American citizens usually associate these programs less with racial or ethnic concerns, although it is worth noting that these programs provide benefits to millions of individuals from minority groups (Callaghan and Olson 2017; Winter 2008). Instead, out-group resentment is more likely to be replaced by positive stereotypes and in-group solidarity (Jardina 2019; Kinder and Kam 2010; Winter 2008).

Why do only some but not all social welfare programs engender citizens' racial or ethnic concerns and resentment? One explanation proposed by existing scholarship is that institutional structures and designs of the welfare state (e.g., welfare regimes and eligibility rules for benefits) substantially shape citizens' perceptions of welfare beneficiaries and preferences for social welfare (e.g., Laenen 2018, 2025; Larsen 2006, 2008). Specifically, these institutional factors affect how individuals

perceive deservingness and influence their policy attitudes through various policy feedback mechanisms. That is, once established, social welfare programs can serve as “norm-setting and norm-enforcing institutions that might determine which deservingness criteria citizens attach importance to” and impact “how target groups are evaluated on the different deservingness criteria” (Laenen 2020, 12).

Moreover, policy design makes certain types of programs more likely to be associated with certain types of people (Faricy 2015; Skocpol 1991). According to the “social construction of target populations” approach, policy designs play an active role in socially constructing target groups among diverse audiences. Various components of policy design (e.g., work requirements, policy delivery mechanisms, and legal residency requirements) convey judgments about whether beneficiaries are deemed “deserving” or “undeserving” of receiving social welfare assistance (Ashok and Huber 2020; Ingram and Smith 1993; Schneider and Ingram 1993, 1997; Yoo 2008). As Haselswerdt (2022, 274) argues, the eligibility criteria and requirements of a welfare program may “match up with stereotypes about racial or ethnic groups, making a person more or less likely to assume the program will benefit those groups.”

To answer this question and explore the way social welfare policies are designed impacts the assumptions citizens make about the racial or ethnic constructions of the target population, some scholars have made their contributions by focusing on the potential impacts of immigration on host countries and particular elements of policy design. For example, after analyzing data from a survey experiment, Haselswerdt (2021) suggests that priming immigrants as a fiscal threat significantly increases the likelihood that individuals assume that welfare programs will benefit foreigners rather than native citizens. However, priming foreigners as cultural or demographic threats shows no significant effect. In addition, through conducting another original survey experiment, Haselswerdt (2022) finds that policy design elements, such as a work requirement, significantly affect respondents' assumptions about policy beneficiaries in terms of their race and national origin, and these assumptions in turn impact respondents' welfare support (conditional on existing attitudes about race or immigration).

Nevertheless, a fundamental distinction in the design of welfare states—whether the eligibility of a welfare program is universal or selective—merits further examination. In universal welfare programs or entitlement programs that are based on criteria other than income, since the basic principle is not to discriminate between citizens, not only the poor but also the middle class can benefit from a given welfare policy (Crepaz and Damron 2009; Rothstein and Stolle 2003). Therefore, native citizens, such as white residents, are less likely to associate these welfare programs with negatively stereotyped groups directly. Also, classifying or labeling welfare recipients in universal welfare programs is less likely, and other considerations, such as racial or ethnic concerns, should be less consequential.

On the contrary, means-tested welfare policies are intended to aid some groups but not others. In means-tested programs, such as Medicaid, Supplemental Security Income (SSI), and

the Supplemental Nutrition Assistance Programs (SNAP), eligibility for benefits is determined based on financial need, usually defined according to the poverty line (Hasenfeld and Rafferty 1989; Muñoz and Pardos-Prado 2019). Such programs are often criticized for creating moral hazards in terms of disincentives to work and save money (Deacon and Bradshaw 1983; Gugushvili and Van Oorschot 2020). For these policies, the identity and deservingness of beneficiaries are likely to play an important role in citizens' policy attitudes.

Although means-tested programs do not provide explicit information about the racial or ethnic makeup of the beneficiary population, the “selective” nature of their policy design could still reinforce social categorization effects—people's tendency to divide the world into two distinct categories, “us and them” (Baron 1989, 643) by constructing attitudes of “stark separation between individuals deserving of public support and ‘undeserving’ ones” (Crepaz and Damron 2009, 447).

Certainly, deservingness is not always about race and ethnicity, and many white Americans may see some other white Americans (e.g., unmarried mothers and unemployed men aged 18–64) as “lazy and undeserving” as well (Garand et al. 2017; Lanford and Quadagno 2022). However, in recent years, the impacts of the increased immigrant population on the daily life of native citizens have become increasingly noticeable (Alesina et al. 2021; Avdagic and Savage 2024; Choi et al. 2023; Strabac et al. 2016). Perhaps due to negative and stereotypical images of immigrants formed by news media and political elites (De Coninck 2020; Hussey and Pearson-Merkowitz 2013), immigration has become one of the predominant factors that affect people's consideration of welfare deservingness. In this case, citizens' out-group bias and stereotypes, such as immigrants “being lazy or incompetent” and “abusing social welfare benefits” (e.g., Garand et al. 2017; Lee and Fiske 2006), could make individuals more likely to assume that such means-tested programs will benefit immigrants. Therefore, compared to universal or non-selective welfare policies, welfare programs with a means-testing design that uses income tests to limit access to welfare benefits (e.g., cash assistance and health insurance) could be more likely to stoke individuals' ethnic concerns and lead them to conjecture that such policies are specifically beneficial to immigrants.

**Hypothesis 1.** *The inclusion of means testing in a welfare program will make respondents more likely to assume those programs will benefit immigrants to the exclusion of native-born Americans than they would if these programs were universal.*

Moreover, since beneficiaries from means-tested programs are usually “poor” and “destitute” (Gugushvili and Van Oorschot 2020; Hasenfeld and Rafferty 1989; Lanford and Quadagno 2022), it is possible that means-testing designs prompt citizens to more specifically presume the types of immigrants who would benefit. For example, levels or types of work skills are highly pertinent to individuals' income levels and the need to receive protection from the welfare state (Rehm et al. 2012). In particular, compared to workers with high-skill levels, low-skilled or unskilled workers are more likely to have lower incomes and, therefore, use means-tested welfare programs. Existing work also indicates that immigrants tend to be less skilled and educated than their native counterparts in

the United States and many other advanced countries, and the productivity differences substantially contribute to the earnings gap between immigrants and natives<sup>2</sup> (Dostie et al. 2023; Gelatt et al. 2022). With such an association, native-born residents could surmise that means-tested programs benefit low-skilled immigrants more than high-skilled immigrants.

**Hypothesis 2.** *The inclusion of means testing in a welfare program will make respondents more likely to assume those programs benefit low-skilled immigrants relative to high-skilled immigrants than they would if those programs were universal.*

According to the Intergroup Status Hierarchy Theory, because people overwhelmingly prefer associating with others of equal or higher status, immigrants from more developed countries or countries with “higher group status” (e.g., higher levels of GDP per capita) are less likely to cause a backlash among native-born citizens than immigrants from less developed countries or countries with “lower group status” (Kustov 2019; Weeks and Lupfer 2004). Existing scholarship indicates that citizens in advanced countries hold a more favorable attitude toward newcomers from “rich” countries than immigrants from “poor” countries since citizens assume that immigrants from wealthier countries are more socio-economically similar to native-born citizens themselves than immigrants from poor countries (De Coninck 2020). Moreover, immigrants from low-income countries are more likely to be economically disadvantaged (OECD and European Commission 2023), which may significantly impact citizens’ perceptions about welfare program beneficiaries. Thus, means-testing rules should be less likely to lead citizens to associate welfare benefits with immigrants from richer countries than their counterparts from poorer countries.

**Hypothesis 3.** *The inclusion of means testing in a welfare program will make respondents more likely to assume those programs benefit immigrants from less developed countries relative to immigrants from more developed countries than they would if those programs were universal.*

While means-testing highlights similar eligibility cues across programs, its implications may not be uniform across all types of social benefits. The rationale is that different policy domains could evoke different beneficiary images and activate different considerations. For example, a need-based higher-education grant may more readily call to mind questions of skill and socioeconomic background, whereas a family-oriented tax credit tends to foreground household structure and parental status. As a result, the extent to which means-testing shifts assumptions about immigrant beneficiaries may reasonably vary across policy areas. This possibility does not alter the directional expectations of Hypothesis 1–3, but it suggests that the magnitude of these effects may differ across policy experiments examined in this study.

In addition, I anticipate that the ways policy design elements impact these assumptions about immigrants will be consequential for social welfare support. The rationale is that by inducing citizens to link welfare programs with a particular group, these policy designs may prompt respondents to incorporate their feelings about the group (e.g., anti-immigration sentiment) into their assessments (Haselswerdt 2022). For example, citizens may view

high-skilled immigrants and those with higher group status as more capable of contributing to socioeconomic development than low-skilled newcomers and those with lower group status (De Coninck 2020; Hainmueller and Hiscox 2010). Moreover, reciprocity and identity are crucial principles in shaping considerations of deservingness and public support for social welfare (Baekgaard et al. 2023; Magni 2024; Van Oorschot 2000). In this case, means-testing design or assumptions triggered by it may more likely undermine social welfare support among citizens with stronger anti-immigration sentiments. This is because the perception that social programs disproportionately benefit immigrants, especially low-skilled immigrants or immigrants from less advanced countries, is more likely to intensify these citizens’ deservingness heuristics and heighten fears that social values or national resources are at risk.

**Hypothesis 4.** *The inclusion of means testing in a welfare program will have a larger negative impact on welfare support among respondents with higher anti-immigration attitudes than on welfare support among respondents with lower anti-immigration attitudes.*

### 3 | Experimental Design and Data

To test these hypotheses, I use data from an original survey experiment conducted via the Cint Theorem (formerly Lucid) with 1638 respondents in August 2023.<sup>3</sup> Cint Theorem is a self-service online survey platform enabling researchers to recruit high-quality samples. The original survey experiment focuses on two hypothetical prospective policies: a program that helps people afford to go to college (based on *Pell Grants*) and a program that helps families with qualifying children get a tax break (based on *Child Tax Credit, CTC*). The rationale for using hypothetical welfare policies instead of existing social programs is to reduce potential “status quo bias” in respondents’ welfare attitudes (Ashok and Huber 2020) and better isolate the effects of the means-testing rule on welfare assumptions and attitudes. Also, unlike social welfare programs such as food assistance, the aid provided by these two hypothetical programs, without explicitly emphasizing means-testing, could potentially benefit both poor and middle- or even high-income families. This attribute could reduce the likelihood that respondents naturally associate these programs with low-income families.

The experimental manipulations vary in one element: the presence of a means-testing rule for claiming the welfare benefit. Respondents were randomized into the two groups to receive policy information about these two hypothetical policies. One group was presented with a description of the hypothetical Pell Grant policy that includes a means-testing rule and a description of the hypothetical CTC policy that does not, while the other group was presented with a means-tested version of the hypothetical CTC and a non-means-tested version of the hypothetical Pell Grant. The order of the policy descriptions and associated questions is randomized within each treatment arm. Within each group, I analyze the degrees of support for these two policies and respondents’ perceptions of which social groups would benefit most from the implementation of these programs. Below is an example displaying wording for one hypothetical welfare program (CTC) and treatments.

We would like to ask your opinion on a hypothetical government program. Under this program, families with dependent children would receive a tax break to help them manage the cost of raising kids [Include/omit:] **To receive this benefit, applicants must have an annual household income at or below 100% of the federal poverty level (e.g., \$24,860 for a family of three).** This program would cost the U.S. Treasury about \$130 billion per year.

After showing the primes, I asked respondents about their support for the hypothetical policy and what “groups in American society” would most likely benefit from these welfare programs.<sup>4</sup> Subjects were first asked to give their opinions of these hypothetical welfare programs using a five-point scale, with 1 representing “oppose strongly” and 5 suggesting “support strongly,” while “neither support nor oppose” serves as the midpoint. Regarding the welfare beneficiary question, respondents were permitted to choose multiple options from a set of groups (according to multiple social, economic, and ethnic features), such as “Poor people,” “Women,” “Labor unions,” and “Immigrants.” The choice of interest is “Immigrants.” Including all of these other groups helps avoid overtly priming the immigration issue to respondents. This dependent variable is an indicator named *Exclusion assumption* coded “1” if a respondent chose “immigrants” and not “Americans born in the United States.”<sup>5</sup> This measurement approach is based on the strategy of measuring participants’ beneficiary assumptions used in Haselswerdt (2021, 2022).

After that, all respondents, regardless of what they chose, were asked the following two questions. For example, respondents received the question, “Assuming that the policy you just read about did benefit immigrants, which types of immigrants do you believe would be most likely to benefit?” Respondents were allowed to select one of two types of immigrants, “low-skilled immigrants” and “high-skilled immigrants.” This dependent variable is an indicator variable, with 1 representing “low-skilled immigrants” and 0 referring to “high-skilled immigrants.” In addition, respondents received the question, “Assuming that the policy you just read about did benefit immigrants, do you believe it would be more beneficial to immigrants from relatively poor countries, or relatively rich countries?” They had two options to choose from – “relatively poor countries” and “relatively rich countries,” which are based on the development status of the country of origin. Results from this question construct the dependent variable with 1 representing “immigrants from poorer countries” and 0 indicating “immigrants from richer countries.” I also randomize the order of the skill and national origin questions.

The primary independent variable of interest is an indicator for the experimental treatments *means-testing* (=1) versus *no means-testing* (=0). Testing Hypothesis 4 requires a variable named *Immigration opposition scale* gauging respondents’ predispositions toward immigration, which I measure using a series of questions about immigration policy adapted from the 2012 American National Election Study, following Haselswerdt (2022). This includes questions about viewpoints on government policy toward unauthorized immigrants, attitudes toward the proposal to permit foreigners who were

illegally brought into the U.S. as children to become permanent residents, stances on a law that permits checks on the immigration status of suspected unauthorized immigrants, and positions on the ideal scale of immigration and the likelihood that immigrants will compete with citizens for jobs. I re-scale this variable to fall within the range of 0 to 1 (Cronbach’s  $\alpha=0.71$ ), with higher values indicating stronger anti-immigration preferences. I use difference-of-proportions tests and report the percentages in each treatment category to test Hypothesis 1–3. I use OLS models with an interaction between *Immigration opposition scale* and the treatment indicator to test Hypothesis 4.

In addition, measurements of other variables are drawn from the Cooperative Election Study (CES) or American National Election Studies (ANES) Common Content questionnaire. These include several control variables that I include in an alternative specification of the OLS model as a robustness check: *Ideology* (five-point scale), *Partisanship* (seven-point scale), *Age* (six-point scale), *White* (“White” = 1 and “Other racial and ethnic groups” = 0), *Education* (six-point scale), *Female* (“Male” = 0 and “Female” = 1), and *Income* (sixteen-point scale). These variables also serve to establish the representativeness of the sample. Question wording and descriptive data for all variables are displayed in the Appendix. In addition, I construct survey weights using poststratification raking based on these control variables and demographic data from the 2022 CES sample. I use Stata package *ipfraking* to generate the weights. Following the strategy outlined by Pedersen and Favero (2020), *after achieving convergence, I trim the weights to fall within a range of 0.5 to 2 in order to reduce the influence of extreme values.*

Table 1 displays the demographic characteristics of the unweighted and weighted Cint Theorem samples as compared to the 2022 CES sample, which serves as the population benchmark. The Cint Theorem samples, especially the weighted one, closely resemble the CES sample in multiple demographic characteristics. I present the results of unweighted models in the main text. The weighted results are reported in the Appendix.

## 4 | Results

I first examine whether the assumption that welfare programs would benefit immigrants to the exclusion of native-born Americans is associated with a means-testing rule.<sup>6</sup> Figure 1 shows the pattern predicted by Hypothesis 1: the means-testing rule made respondents more likely to assume those programs will benefit immigrants to the exclusion of the native-born. In particular, in the hypothetical Pell Grant experiment, around 20.8% of respondents in the control group (without receiving means-testing information) assumed such a program would benefit immigrants but not native citizens, while about 26.3% of subjects in the means-testing treatment group held this assumption. A similar pattern can be observed for the hypothetical Child Tax Credit experiment: about 26.6% of recipients in the treatment group assumed that such a program would benefit immigrants only, while 21.4% of respondents in the control group made that assumption. Moreover, two-tailed difference-of-proportions tests indicate that the means-testing treatment significantly increased the endorsement of the exclusion assumption in both the Pell Grant experiment ( $p=0.01$ ) and the Child Tax Credit

**TABLE 1** | Demographic characteristics between Cint Theorem and the 2022 CES samples.

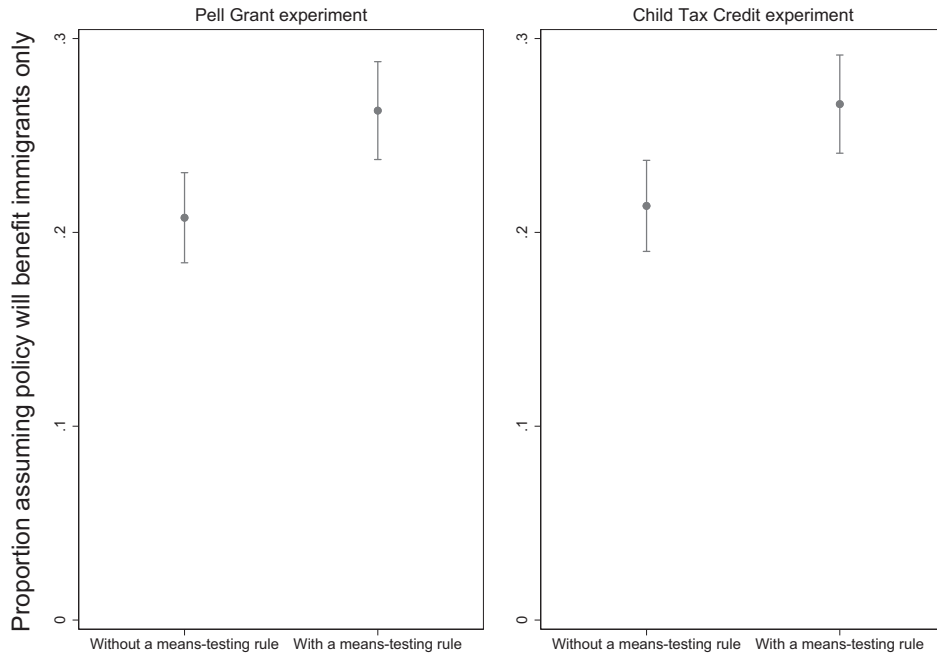
Variables	Cint Theorem (Unweighted)	Cint Theorem (Weighted)	2022 CES
<b>Gender</b>			
% Female	51.89	53.11	53.16
<b>Age</b>			
% 18–29 years old	21.17	16.41	15.42
% 30–39 years old	20.00	16.49	15.80
% 40–49 years old	18.28	15.73	15.07
% 50–59 years old	16.86	17.89	17.69
% 60–65 years old	8.25	12.25	13.60
% 65+ years old	15.45	21.23	22.41
<b>Race</b>			
% Non-White	28.82	30.28	30.83
% White	71.18	69.72	69.17
<b>Education</b>			
% No HS	2.63	4.06	4.57
% High school graduate	28.27	28.00	27.75
% Some college	26.31	23.32	22.26
% 2-year college degree	12.15	11.25	10.74
% 4-year college degree	23.38	22.56	22.29
% Postgraduate degree	7.26	10.82	12.38
<b>Household income</b>			
% Below 60k	65.69	56.31	53.98
% Between 60k and 150k	29.43	35.53	36.70
% Above 150k	4.88	8.16	9.32
<b>Party ID</b>			
% Strong Democrat	20.76	26.03	27.68
% Weak Democrat	14.22	12.42	12.09
% Lean Democrat	9.52	10.18	10.19
% Independent	14.96	15.10	15.30
% Lean Republican	9.10	8.72	8.67
% Weak Republican	12.09	9.75	9.07
% Strong Republican	19.35	17.79	17.00
<b>Ideology</b>			
% Very liberal	11.17	13.32	13.96
% Liberal	19.60	19.89	19.91
% Moderate	40.60	35.66	34.58
% Conservative	18.99	19.86	19.87
% Very conservative	9.65	11.27	11.68

Note: Missing values and “not sure” answers (CES) for each variable are not included.

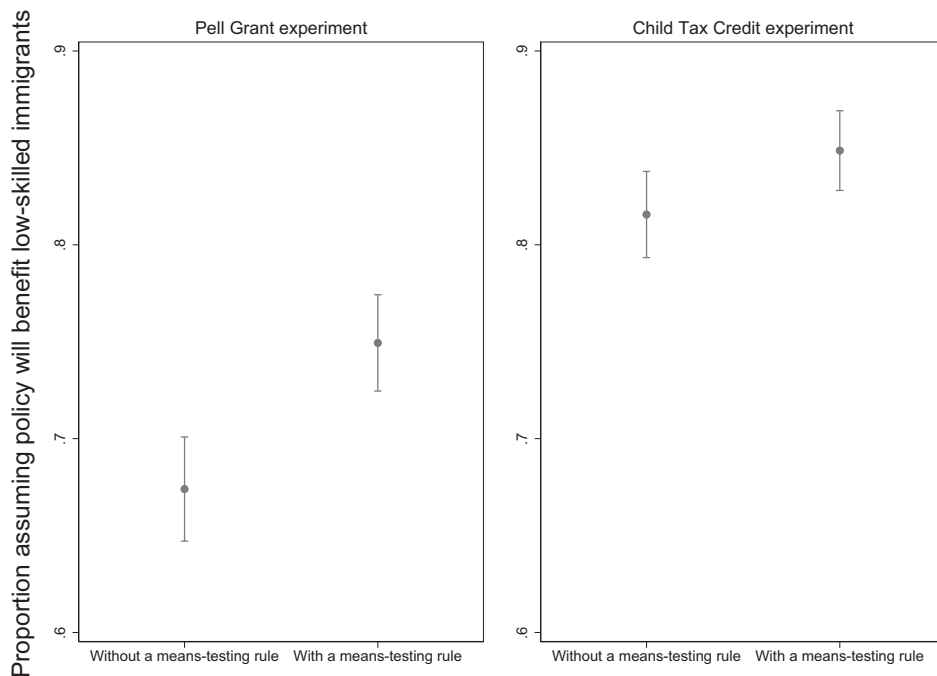
experiment ( $p = 0.01$ ).<sup>7</sup> Therefore, Hypothesis 1 received empirical support.

Next, I assess whether a means-testing rule induces respondents to associate welfare programs with specific immigrant categories based on skill level or background of origin country. As Figure 2 displays, for both experiments, treatments with a means-testing requirement resulted in a higher proportion of respondents believing that low-skilled immigrants would be

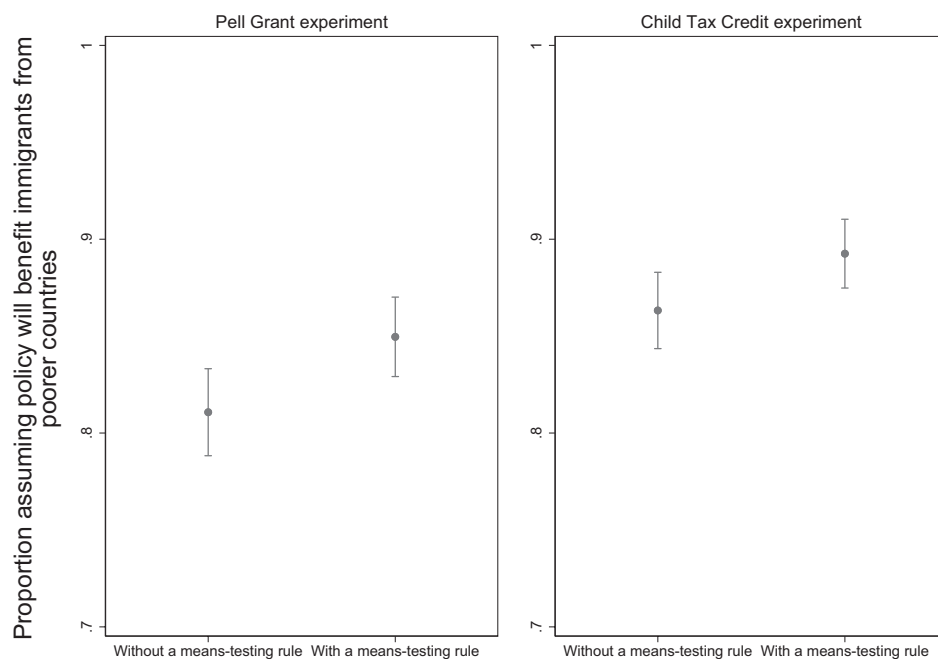
most likely to benefit from these programs (difference of proportions = 0.08,  $p < 0.01$  for the Pell Grant experiment; difference of proportions = 0.03,  $p = 0.07$  for the Child Tax Credit experiment). While the results of the Child Tax Credit experiment are only marginally significant, they still provide suggestive but notably weaker evidence in support of Hypothesis 2, which anticipates that a means-testing rule would make native dwellers assume that low-skilled immigrants are more likely to benefit than high-skilled immigrants.



**FIGURE 1** | Proportions of participants assuming described welfare programs benefit immigrants to the exclusion of native-born citizens, by experimental condition (with 90% confidence intervals). Full results are reported in Appendix Tables C.1 and C.2.



**FIGURE 2** | Proportions of participants assuming described welfare programs benefit low-skilled immigrants, by experimental condition (with 90% confidence intervals). Full results are reported in Appendix Tables C.1 and C.2.



**FIGURE 3** | Proportions of participants assuming described welfare programs benefit immigrants from less developed countries, by experimental condition (with 90% confidence intervals). Full results are reported in Appendix Tables C.1 and C.2.

Figure 3 plots the proportions of subjects who assumed that welfare policies presented to them would benefit immigrants coming from less developed countries, as expected by Hypothesis 3. In both welfare policy experiments, the means-testing condition increased this perception: the shift is statistically significant in the Pell Grant experiment (difference of proportions = 0.04,  $p = 0.04$ ) and marginal in the Child Tax Credit experiment (difference of proportions = 0.03,  $p = 0.07$ ). Although the result of the Child Tax Credit experiment does not reach conventional significance levels, the direction of the effect mirrors that in the Pell Grant experiment, which is in line with Hypothesis 3.<sup>8</sup>

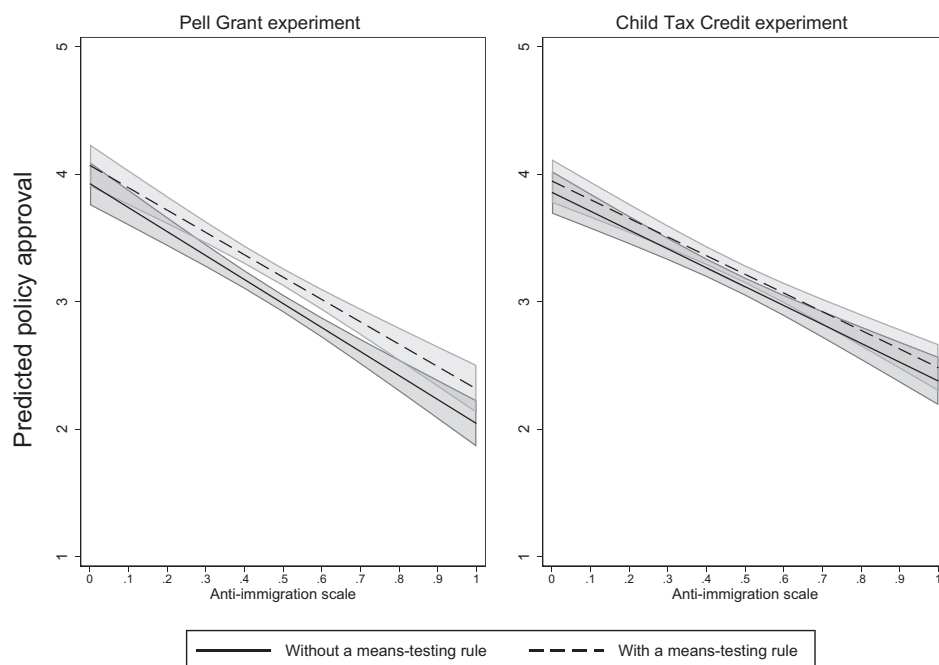
Another interesting finding is that the means-testing condition led to slightly larger shifts in perceptions of low-skilled immigrants ( $\Delta = 0.08$ ,  $p < 0.01$  vs.  $\Delta = 0.03$ ,  $p = 0.07$ ) and newcomers from less developed countries ( $\Delta = 0.04$ ,  $p = 0.04$  vs.  $\Delta = 0.03$ ,  $p = 0.07$ ) in the Pell Grant experiment compared to the Child Tax Credit experiment. However, the differences between the paired  $\Delta$  values across experiments are not statistically significant (perceptions of low-skilled immigrants:  $z = 1.45$ ,  $p = 0.15$ ; perceptions of immigrants from less developed countries:  $z = 0.41$ ,  $p = 0.68$ ). One plausible explanation is that education policy is more explicitly linked to skill acquisition (e.g., Williams 2019) and national development (e.g., Dumciuvienė 2015), making it more likely to activate changes in stereotypes or assumptions about immigrant skill levels and developmental context. In contrast, the Child Tax Credit—a program tied to family structure rather than human capital—may be less likely to cue such shifts, though its baseline associations are comparatively higher (e.g., 81.6% vs. 67.4% for skill assumption in the control group).<sup>9</sup>

Taken together, across both policy domains, the means-testing treatment changes assumptions in a consistent direction. At the same time, the magnitude and statistical strength of these effects differ considerably. The Pell Grant experiment produces

larger and more robust changes, whereas the corresponding effects in the Child Tax Credit experiment—although pointing in the same direction—are smaller and in some cases only marginally significant. These contrasts suggest that the impact of means-testing is not uniform and may depend on the substantive domain of the policy.

Turning to the conditional effects anticipated by Hypothesis 4, Figure 4 presents results from linear regression models with interaction terms between the means-testing treatment and *Immigration opposition scale*. According to these results, I detect no interaction effect to speak of—although the interaction term in each experiment has the expected sign, it is statistically insignificant (Pell Grant experiment:  $p = 0.61$  with controls; Child Tax Credit experiment:  $p = 0.95$  with controls).<sup>10</sup> Moreover, this figure displays only a slight narrowing within the scope of the anti-immigration attitude variable, indicating that the difference in predicted policy support between the means-testing and control treatments is relatively small. That is, these results do not support Hypothesis 4—there is no significant evidence that the means-testing rule has a larger dampening effect on welfare support (relative to the control treatment) among individuals who are resistant to immigration than among citizens with a low anti-immigration scale.

Why might these interactions be absent? One plausible explanation is that misperceptions or false beliefs may influence the use of the deservingness heuristic and, consequently, policy support. As Sowula (2024, 103) notes, “incorrectly used shortcuts can lead to serious mistakes in judgment,” and “such errors are most likely when heuristics are based on misinformation.” In this context, if most respondents—regardless of their immigration attitudes—overestimate the number of immigrants that receive benefits, they may associate means-testing primarily with foreigners, even if that is not accurate. Consequently, there is



**FIGURE 4** | Predicted welfare policy approval across treatment groups and immigration attitude (with 90% confidence intervals and control variables). Full results are reported in Appendix Tables D.1 (Model 2) and D.2 (Model 6).

little room for means-testing to interact significantly with anti-immigrant attitudes. Moreover, this interpretation aligns with evidence that the American public often overestimates immigrant reliance on social benefits (Garand et al. 2017; Hussey and Pearson-Merkowitz 2013) and that the general public in the US and beyond possesses limited knowledge of the welfare state and social welfare programs (Geiger 2018; Soss and Schram 2007).

Another explanation is that means-testing may evoke broader considerations of program efficiency and cost-effectiveness (Prenzler 2011; Van Oorschot 2002), which are not tightly linked to attitudinal predispositions about immigrants. If means-testing signals abuse-aversion, waste avoidance, and fiscal responsibility, these broader evaluative cues may weaken the connection to immigration attitudes. Of course, other explanations are also plausible. These may include indirect pathways, such as the ramifications of other beneficiary assumptions, and measurement limitations, where measures used in this study might not be sensitive enough to capture nuanced interactions.

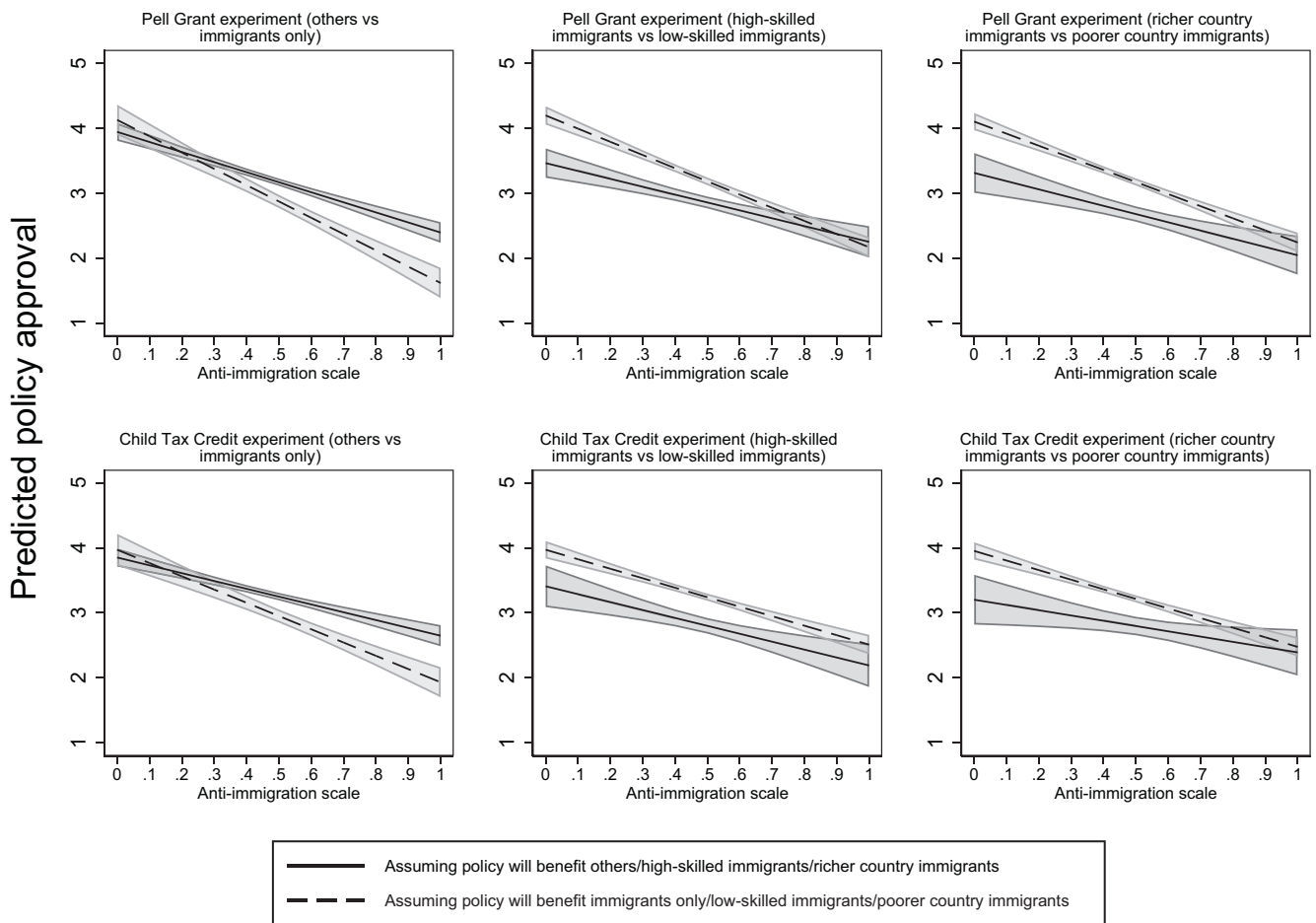
While there is no evidence of a direct interaction effect of the anti-immigration scale with the means-testing treatment, exploratory analyses suggest that when respondents perceive a program as primarily benefiting newcomers, support tends to be lower among those with stronger anti-immigrant attitudes. These associations are consistent across both policy experiments. However, they should be interpreted with caution, as they are measured after the treatment and do not establish a causal mechanism.<sup>11</sup>

A similar, though less consistent, pattern appears when social programs are perceived to benefit low-skilled immigrants or new settlers from poorer countries. These exploratory results suggest that anti-immigrant sentiment could condition the associations between some beneficiary assumptions and policy

support, rather than directly interacting with the means-testing treatment. Taken together, the absence of a direct interaction effect is itself a meaningful finding: anti-immigrant sentiment reduces support for welfare consistently, regardless of whether programs include means-testing rules. Exploratory analyses indicate that assumptions about beneficiaries—some of which are associated with means-testing—show different associations with policy support across levels of anti-immigrant attitudes. However, as mentioned before, these patterns should be interpreted cautiously, especially given the smaller effect of means-testing on some beneficiary assumptions in the Child Tax Credit experiment<sup>12</sup> (see Tables D.4 and D.5).

In addition to Figures 4 and 5, I provide additional visualizations to examine these interaction effects and associations. Figures D.1 and D.2, respectively, display linear and non-linear marginal effects of the means-testing treatment and marginal associations of its induced assumptions with policy support, per the advice of Hainmueller et al. (2019). I use Stata package *interflex* to estimate both types of marginal effects and associations, with the non-linear marginal effect and association estimates generated through the employment of the kernel estimator. In general, the results shown in Figures D.1 and D.2 validate findings regarding the interaction effects and associations outlined in the main text.

Although these conditioning patterns are informative, I must point out a potential concern about the question ordering of the Cint Theorem study. In the Cint Theorem study, I decided to place the beneficiary group assumption questions after the policy approval questions to avoid raising the salience of immigration. However, there is a downside to utilizing these assumption variables as moderators and independent variables in models where policy approval serves as the dependent variable, as this may potentially incur endogeneity problems.



**FIGURE 5** | Predicted welfare policy approval across assumptions induced by means-testing rule and immigration attitude (with 90% confidence intervals and control variables). Full results are reported in Appendix Tables D.3 (Models 10 and 14), D.4 (Models 18 and 22), and D.5 (Models 26 and 30).

To address this potential concern, I conducted a follow-up study on Prolific (see Appendix I), an online survey company that works with researchers to conduct scientific studies and surveys. In the follow-up study of 1502 respondents conducted between November 30 and December 1, 2023, I incorporated all elements of the original Cint Theorem study and randomized the order of those beneficiary group assumption questions and policy approval questions. As results in Appendix I show, no statistically significant differences in effects based on question order were detected in five out of six models that include triple interaction terms. The only exception is the coefficient for the triple interaction term in Model 77 in Table I.5, which is statistically significant at the 0.05 level ( $p = 0.01$ ). However, as indicated in Table I.6, when applying the Benjamini-Hochberg (BH) procedure with a false discovery rate of 5%, the initially significant  $p$ -value for this coefficient became statistically insignificant after adjustment for multiple comparisons. Therefore, the difference in the ordering of the beneficiary group assumption questions and policy approval questions does not lead to significantly different empirical results.

Moreover, the findings for each hypothesis in the Cint Theorem study are replicated in the Prolific study. For example, according to Tables I.10 and I.11, the difference of proportions results in both policy experiments being statistically significant at the 0.01

level.<sup>13</sup> These results alleviate a significant concern about the original design and speak to the robustness of the experimental findings.

## 5 | Discussion and Conclusion

This study explores how means testing—a crucial component of contemporary welfare policy designs—impacts Americans’ assumptions about immigrants as welfare beneficiaries and their support for welfare policies. This study contends and finds evidence that these assumptions are shaped by this element of policy design. Particularly, such a design makes respondents more likely to assume that welfare programs benefit immigrants to the exclusion of native-born Americans. It also tends to increase the likelihood that citizens associate welfare beneficiaries with low-skilled immigrants and those from less developed countries, with stronger and more consistent evidence from the Pell Grant experiment and more modest support in the Child Tax Credit experiment. One plausible interpretation is that education policy could more naturally activate the considerations of skill and development, while a family-based tax credit may provide less significant and stereotypical cues. These contrasts indicate that the ramifications of means-testing may not be uniform across policy

areas. Instead, they should be analyzed with attention to the substantive domain. At the same time, the cross-domain consistency in the direction of the effects suggests that these differences reflect variation in magnitude rather than fundamentally divergent underlying processes.

Moreover, although the means-testing design does not directly interact with immigration attitudes to depress policy support, exploratory evidence suggests that certain assumptions (e.g., the exclusion assumption) evoked by it are more closely associated with lower support among respondents who oppose immigration more. All substantive findings were replicated in a follow-up experiment using a sample recruited through a different survey vendor.

These findings have important implications for the current debate on whether the influx of immigrants undermines public support for social welfare among citizens. First, findings in this study buttress the emerging body of research that emphasizes the need to examine the roles of institutional structures and designs on public opinion toward social welfare (Ashok and Huber 2020; Laenen 2018; Larsen 2006; Muñoz and Pardos-Prado 2019; Qi and Haselswerdt 2024). As an essential factor in providing a structured approach to government decision-making, policy design also plays a substantial role in shaping “the political preferences and behaviors of ordinary citizens” (Mettler and SoRelle 2018, 117). This study indicates that, in addition to its direct impact on public attitudes toward welfare, the effects of welfare policy design on the nexus between immigration attitudes and welfare support should not be underestimated.

Second, the findings in this study highlight an imperative research question: how do different types of immigrants affect political support for social welfare among native residents? While previous studies have made great contributions to exploring and demonstrating the effects of immigrants on the politics of the welfare state (Avdagic and Savage 2024; Garand et al. 2017; Haselswerdt 2022), they have tended to treat immigrants as a monolithic target population. As a result, existing literature has not fully distinguished whether and how different categories of immigrants affect citizens' welfare beneficiary assumptions and support for welfare programs. This study suggests that assumptions about the types of immigrants who would be welfare beneficiaries are also affected by policy design. Moreover, some of these assumptions are consequential for welfare policy support. In recent decades, immigrants have been increasingly considered the least “deserved” beneficiaries, and resistance to immigration has become an increasingly notable component of the Republican agenda and conservative ideology (Brady and Finnigan 2014; Fox 2012; Romero 2011; Van Oorschot 2006). It is worth paying attention to whether and how conservative parties and politicians emphasize the corresponding policy designs and highlight specific types of immigrants in their political rhetoric to arouse the mass public's anti-social welfare awareness and attitudes during election campaigns and policymaking processes.

Of course, this study also has limitations and presents many possibilities for improvement, and future investigations are needed to validate its findings. First, race is also crucial to studying the politics and policies of the welfare state. For example, Haselswerdt (2022) finds that a work requirement can

substantially shape citizens' assumptions about welfare beneficiaries based on their race and country of origin. Clearly, failing to investigate the role of race diminishes the contribution of this research, and whether means-testing rules can allow native citizens to assume social welfare beneficiaries from a racial perspective warrants further investigation.

Second, to avoid overtly priming respondents with the immigration issue by placing “Immigrants” at the beginning or earlier part of the option list, I decided not to randomize the order of the options and placed the “Immigrants” option in the latter middle section. While this strategy could help reduce bias caused by overemphasizing immigration, the lack of full randomization remains a limitation. Future research could consider fully randomizing the order of options to minimize potential issues arising from this limitation, such as order effects and risk of anchoring or fatigue.

Third, the experimental design in this study includes two conditions: one policy prime with a means-testing rule and one without (with randomized order of presentation). While this approach could preserve statistical power, it also has a limitation—the absence of a condition in which both policies share the same means-testing status. This design feature makes it harder to isolate the independent effect of means-testing, as spillover effects may occur depending on which policy respondents saw first. Future studies could address this limitation with larger sample sizes or more refined experimental designs that allow for the independent estimation of means-testing effects across multiple policy conditions.

In addition, more work is needed to understand how and when policy designs shape public reactions. This study suggests that means-testing can shape certain beneficiary assumptions and that these assumptions are linked to welfare support, but it cannot pinpoint whether they operate as causal channels or conditional cues. Future research should more directly examine the moderating and/or mediating relationships between means-testing, social perceptions of beneficiaries, and welfare support—ideally through more refined designs that can identify mechanisms with greater precision.

Regarding the generalizability of the findings, previous research shows that welfare institutions substantially shape public preferences for social policy (Larsen 2008; Van Der Waal et al. 2013). Therefore, citizens in other liberal welfare states, such as the United Kingdom, Canada, or Australia, may exhibit comparable perceptions and preferences, especially given the rising immigrant populations and the increasingly salient debates about immigrant concerns (e.g., immigrants' access to welfare benefits) in advanced democracies (Avdagic and Savage 2024; Claassen and McLaren 2022). It is also plausible that similar patterns could be observed in other means-tested programs, such as the Supplemental Nutrition Assistance Program, which may trigger even stronger negative feedback effects because of their strong association with stigma and discrimination (Pulvera et al. 2024). However, caution is warranted: in conservative and social-democratic regimes, public attitudes toward vulnerable groups (e.g., the poor and the unemployed) remain more favorable, and welfare chauvinism is less pronounced (Van Der Waal et al. 2013). Thus, the assumptions and effects examined

in this study should be empirically tested across different institutional settings and policy domains rather than presumed to travel directly.

In addition to the means-testing rules, do other elements of welfare policy design affect welfare preferences and moderate the nexus between immigrant attitudes and public support for welfare programs? Different types of welfare policy designs are likely to have separate mechanisms affecting citizens' welfare beneficiary assumptions and attitudes toward immigrant welfare participation. Future studies can explore whether and how other important design elements of social welfare programs, such as funding sources, tax administration, and term limits, play direct or moderating roles in shaping such assumptions and native residents' welfare policy preferences.

Furthermore, as the results of this study suggest, when thinking about immigrants as potential beneficiaries, citizens can form their assumptions and perceptions based on specific characteristics and background information of immigrants. In recent years, a solid body of research has started to investigate how the basic features of immigrants, such as immigrant status, religious belief, ethnicity, and education attainment, affect native citizens' immigration support and the politics of redistribution (Aalberg et al. 2012; De Coninck 2020; Hainmueller and Hopkins 2015; Lanford and Quadagno 2022). Future scholarship should explore the effects of other immigrant characteristics on public support for redistribution policies. On the one hand, upcoming research can examine how newcomers' malleable features, such as level of education and criminal record, affect native people's welfare assumptions and attitudes toward redistribution. On the other hand, perceptions of immigrants' deservingness of aid may also vary in accordance with features that immigrants cannot easily change or control, such as their inherent features (e.g., gender) and country background (e.g., geographic locations and political regimes). Exploring these questions could help us develop a comprehensive and reflective understanding of the relationship between the growing foreign-born population and the development of redistribution.

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### Ethics Statement

The human subject research in this manuscript was reviewed and approved by the Institutional Review Board at the University of Missouri in Columbia.

### Conflicts of Interest

The author declares no conflicts of interest.

### Data Availability Statement

Please contact the corresponding author for information about the data and specific analyzes.

### Endnotes

- <sup>1</sup> By definition, means testing usually consists of income tests that seek to identify the “truly poor” and “is assumed to be the main form of selective provision,” and scholars normally use the terms “selectivity” and “means testing” interchangeably (Gugushvili and Van Oorschot 2020, 1457).
- <sup>2</sup> Despite these income disparities, immigrants are not always eligible for social welfare programs due to their immigration status (Huang et al. 2021).
- <sup>3</sup> I pre-registered this study. For details of the preregistration, see Appendix J. The institutional review boards (IRB) reviewed and approved the study design.
- <sup>4</sup> For core questions and prompts in this study, see Appendix B.
- <sup>5</sup> It is possible that some participants may implicitly view “Americans born in the United States” as the default and therefore refrain from actively selecting it. This could slightly inflate the treatment effect if the means-testing condition makes the “Immigrants” option more salient and thereby encourages omission of the “Americans born in the United States” option. However, diagnostic results do not support this mechanism. As shown in Table F.4, which presents logit regression models predicting the selection of “Americans born in the United States,” the coefficients for the means-testing treatment are statistically insignificant across all four models (Model 65:  $p=0.43$ ; Model 66:  $p=0.39$ ; Model 67:  $p=0.12$ ; Model 68:  $p=0.14$ ). These findings suggest that the treatment does not reduce the likelihood of selecting “Americans born in the United States.” Nonetheless, future research could further improve the design by asking separate binary questions for each group or by including explicit instructions reminding respondents to evaluate each group independently.
- <sup>6</sup> Table F.3 presents unconditional treatment group differences. While I do not advance a formal hypothesis for this test, reporting these results could serve as a useful baseline to assess the direct effects of the means-testing treatment on policy support before turning to the theory-driven hypotheses. For both policy experiments, the means-testing treatment led to an increase in the level of policy support. However, while the effect is statistically significant in the Pell Grant experiment ( $p < 0.01$ ), the difference in the Child Tax Credit experiment does not reach the conventional standards of statistical significance ( $p = 0.28$ ). Taken together, such results suggest that Americans may be more supportive of social welfare policies when they include a means-testing design, though this pattern is inconsistent across policy domains.
- <sup>7</sup> Details about the difference of proportions tests in this study can be found in Appendix C.
- <sup>8</sup> I also evaluate whether these experimental effects anticipated by Hypothesis 1–3 vary by race or ethnicity. Results in Appendix F suggest that, in the treatment group, non-Hispanic whites were slightly more inclined than citizens of other ethnic groups to assume that described Pell Grant program would be most likely to benefit immigrants only (26.5% vs. 25.8%,  $p = 0.83$ ), low-skilled immigrants (75.6% vs. 73.4%,  $p = 0.52$ ), or immigrants from less developed countries (85.3% vs. 84.1%,  $p = 0.67$ ). However, for the Child Tax Credit experiment, after receiving means-testing information, non-Hispanic whites were more likely than non-whites to presume such a welfare program would offer benefits to immigrants only (28.4% vs. 22.2%,  $p = 0.07$ ), low-skilled immigrants (87.2% vs. 79.1%,

$p < 0.01$ ), or immigrants from less developed countries (90.7% vs. 85.8%,  $p = 0.04$ ).

<sup>9</sup> I also detect significant differences in policy support across both policy experiments, depending on perceived beneficiaries. As shown Tables F.5 and F.6, policy support is strongest when programs are perceived to benefit both immigrants and native citizens, intermediate when only Americans benefit, and weakest when only immigrants benefit (Pell Grant experiment: means = 3.77 vs. 3.44 vs. 2.87,  $p < 0.01$ ; Child Tax Credit experiment: means = 3.89 vs. 3.58 vs. 2.92,  $p < 0.01$ ). While such results highlight a potential “welfare chauvinism” effect—the tendency to favor welfare benefits for natives over immigrants—it is also compatible with a more general preference for broader and more inclusive welfare programs.

<sup>10</sup> Full results of the linear regression models (with and without controls) can be found in Appendix D. I also apply ordered logistic models to examine the interaction effect of the experimental treatment with the anti-immigration scale. See Appendix E for detailed results of ordered logit regressions.

<sup>11</sup> See Appendix Tables D.3–D.5 for full results of OLS models. I also reported ordered logit regression results in Appendix E.

<sup>12</sup> In Tables F.7 and F.8, I report exploratory analysis results of structural equation models (with control variables) that link the means-testing treatment, beneficiary assumptions, and policy support. For each policy experiment, I specify a parallel-path model in which the treatment is allowed to affect three assumption variables (exclusion, skill, and national background) and policy support directly, and each assumption in turn is allowed to predict policy support. These models are estimated in Stata command *sem* using maximum likelihood with 1000 bootstrap replications. The indirect effects are calculated as the product of the relevant paths using the command *nlcom*. Importantly, the assumption measures were collected after the policy support outcome, and they represent broader post-treatment psychological responses not experimentally isolated from other treatment-induced processes. This lack of temporal ordering and the resulting violation of sequential ignorability mean that these estimates should be interpreted strictly as exploratory indirect associations, rather than evidence of causal mediation.

<sup>13</sup> Tables I.10–I.11 and C.1–C.2 present results of two independent datasets collected from different survey vendors. According to the sample descriptive statistics in the Appendix (see Tables H.1 and I.12), the Prolific sample is younger, more educated, less White, and exhibits lower anti-immigration sentiment and higher baseline assumptions rates than the Cint Theorem sample. These outcomes are more concentrated in the Prolific sample, which leads to reduced outcome variance and smaller standard errors, in turn enhancing statistical significance in the replication. In summary, the direction and substantive magnitude of the effects are stable across two datasets, and the replication contributes to the confidence in the robustness of the findings.

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### Supporting Information

Additional supporting information can be found online in the Supporting Information section. **Data S1:** ropr70083-sup-0001-Supinfo.pdf.