



# Standardizing the fee-waiver application increased naturalization rates of low-income immigrants

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Contributed by David D. Laitin, July 10, 2019 (sent for review April 8, 2019; reviewed by Irene Bloemraad and Amy Hsin)

**Citizenship can accelerate immigrant integration and result in benefits for both local communities and the foreign-born themselves. Yet the majority of naturalization-eligible immigrants in the United States do not apply for citizenship, and we lack systematic evidence on policies specifically designed to encourage take-up. In this study, we analyze the impact of the standardization of the fee-waiver process in 2010 by the US Citizenship and Immigration Service (USCIS). This reform allowed low-income immigrants eligible for citizenship to use a standardized form to have their application fee waived. We employ a difference-in-differences methodology, comparing naturalization behavior among eligible and ineligible immigrants before and after the policy change. We find that the fee-waiver reform increased the naturalization rate by 1.5 percentage points. This amounts to about 73,000 immigrants per year gaining citizenship who otherwise would not have applied. In contrast to previous research on the take-up of federal benefits programs, we find that the positive effect of the fee-waiver reform was concentrated among the subgroups of immigrants with lower incomes, language skills, and education levels, who typically face the steepest barriers to naturalization. Further evidence suggests that this pattern is driven by immigration service providers, who are well-positioned to help the most needy immigrants file their fee-waiver requests.**

citizenship | naturalization | immigration | integration | take-up

As the size of the foreign-born population in the United States has reached record-high levels, research has examined the value of citizenship for immigrants (1). Citizenship grants them the right to vote, ease of travel, eligibility for certain jobs, and protection from deportation. Acquiring host-country citizenship is also associated with increased wages and better employment for immigrants, as well as higher levels of social and political integration (2–7). Naturalization can also benefit the communities in which they reside (1, 6, 8).

When surveyed, most immigrants in the United States express the desire to become citizens (1, 9). Yet naturalization rates in the United States are considerably lower than in other traditional destination countries, such as Canada or Australia (1, 10). In fact, there are currently over 9 million eligible lawful permanent residents (LPRs) who have not taken advantage of their opportunity to become citizens (11). This puzzling pattern raises the question as to what barriers might hold back LPRs from naturalizing.

Previous research has revealed a variety of potential barriers. These include lack of motivation or information, insufficient language ability, and difficulty navigating the administrative system (1, 12, 13). A more recent barrier is the application fee, which has risen from \$35 in the late 1980s to \$725 today, as shown in Fig. 1 (1, 10). However, there is a paucity of research on the implications of rising fees for suppressing applications by eligible, desirous, but financially strapped LPRs. Hainmueller et al. (14) found that citizenship application rates among low-income LPRs doubled when they were awarded a voucher that

paid the application fee. Hotard et al. (15) showed that the naturalization rate among very-low-income LPRs increased by 30% when they were informed of their eligibility for a federal fee waiver. These studies suggest that the current application fees and lack of information about available options to waive them are active barriers for low-income LPRs in the naturalization process, contributing to low naturalization rates in the United States.

In this study, we build on this literature on overcoming barriers to citizenship and evaluate the impact of a recent, as-yet unexamined, federal policy intervention: changes simplifying the application process for the federal fee waiver for naturalization applications by the US Citizenship and Immigration Service (USCIS). Whereas the previous studies tested active interventions in a local context (fee vouchers and an information nudge using experiments embedded in a state-wide naturalization program in New York), our paper focuses on the nationwide effects of a federal policy change.

Before 2010, low-income immigrants could petition USCIS for a fee waiver associated with a number of immigration forms (including naturalization applications) by demonstrating their inability to pay the application fee. This required an affidavit or unsworn declaration. USCIS officers had wide discretion in evaluating the applicant's inability to pay. There was no standardized application form for a fee-waiver request and only vague internal guidance about which requests should be approved (16).

## Significance

The problem of low naturalization rates in the United States has entered policymakers' agendas in light of the societal gains associated with citizenship and an increasing number of foreign-born residents. Nevertheless, there is little evidence on what policy interventions work best to increase naturalization rates. In this research, we show that the standardization of the fee waiver for citizenship applications in 2010 raised naturalization rates among low-income immigrants. These gains were particularly sizable among those immigrants who typically face higher hurdles to accessing citizenship. These findings have implications for policymakers interested in designing policies that help disadvantaged immigrant groups overcome barriers to citizenship.

Author contributions: V.Y., M.H., D.L., J.H., and D.D.L. designed research; V.Y., M.H., D.L., J.H., and D.D.L. performed research; V.Y. and M.H. analyzed data; and V.Y., M.H., D.L., J.H., and D.D.L. wrote the paper.

Reviewers: I.B., University of California, Berkeley; and A.H., Queens College, City University of New York.

The authors declare no conflict of interest.

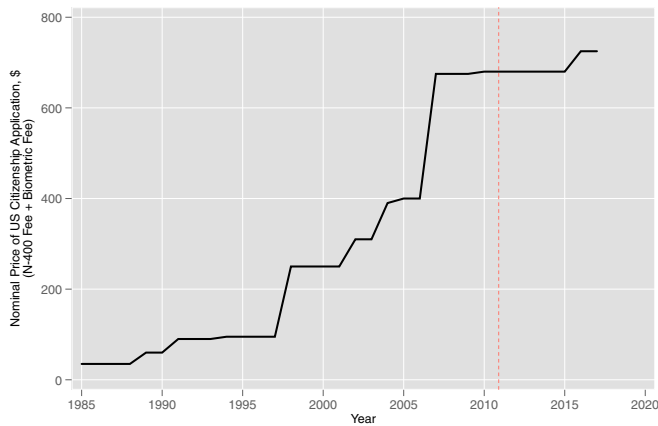
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Data deposition: Replication files have been deposited in the Harvard Dataverse database at <https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/PEETCY>.

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This article contains supporting information online at [www.pnas.org/lookup/suppl/doi:10.1073/pnas.1905904116/-DCSupplemental](http://www.pnas.org/lookup/suppl/doi:10.1073/pnas.1905904116/-DCSupplemental).

Published online August 6, 2019.



**Fig. 1.** Rise in nominal citizenship application fee. The vertical line denotes the time of the fee-waiver standardization reform. Sources: refs. 17 and 34–36. See *SI Appendix* for more details.

In November 2010, USCIS instituted a standardized fee-waiver process with a simple form (I-912) to accompany the basic application form (N-400) with clear rules for eligibility to streamline the review of fee-waiver requests. Under the new rules, immigrants could apply for the fee waiver if their household income was less than 150% of the federal poverty guidelines or if they received means-tested benefits [such as the Supplemental Nutrition Assistance Program (SNAP) or Medicaid] (17). With this administrative change, USCIS simplified its processing of naturalization applications: LPRs who were ineligible for the fee waiver paid the regular price (\$680 in 2010), while very-low-income LPRs could apply for free by filling out the newly created I-912 form.

To date, over 1,000,000 LPRs have used the new I-912 fee-waiver form (18). Given its widespread use, there is an opportunity to examine the impact of the standardization of the fee waiver on the naturalization rate of low-income LPRs.

What effects might we expect to find from the fee-waiver standardization? Generally, one might expect that the reform would increase naturalization rates among eligible LPRs. The standardization makes it easier to access the fee waiver and could thereby enable more low-income immigrants to naturalize who could not otherwise afford the application fee. This would be consistent with previous research showing that the current application fee is a barrier to naturalization (13, 14).

The question is whether standardization helps those facing the steepest barriers in accessing public benefits. Indeed, one might also expect significant heterogeneity in the impact of the fee-waiver reform. It might do little to enable the poorest of those eligible to naturalize, given that they typically face the steepest barriers to accessing public benefits. For instance, the literature provides examples where expansions of public benefit programs or interventions to make benefits easier to access were less beneficial to those who need them the most. Card et al. (19) find that at the onset of Medicare eligibility at age 65, the increase in the use of expensive medical procedures is higher among previously insured groups. Similarly, in their study of SNAP, Finkelstein and Notowidigdo (20) find that in response to an intervention designed to increase participation by the poor, healthier, white English speakers dominated the field of new applicants. These results are consistent with work in behavioral economics (21) focusing on the “bandwidth tax” imposed on the very poor in the form of complicated application processes. They are also consistent with a political economy perspective (22, 23) that posits the political survival of a welfare program only if the wealthiest of the targeted group receive benefits, as they are a key voting block.

Apart from enabling more immigrants to apply for naturalization, another potential effect of the fee-waiver reform is substitution. Substitution occurs when immigrants who would naturalize even in the absence of the reform are induced to use the fee waiver rather than pay the application fee. In this case, USCIS would face forgone revenues without increasing naturalization rates. Similar substitution effects, often called “crowd-out,” have been observed in the context of various public benefits expansions, such as health insurance (24–28), cash payments (29), and childcare (30).

In this study, we examine these theoretical predictions and ask three questions. First, did the fee-waiver reform increase naturalization rates? Second, are these effects weaker or stronger for the neediest? And, third, to what degree did it lead to substitution?

Providing evidence on these effects is important for two reasons. First, the reform had the potential to affect millions of immigrants eligible for citizenship in the United States. Second, it can inform ongoing debates about policies governing immigration fees in the United States. In 2016, a partial fee waiver was introduced specifically for naturalization applicants, which allows someone who has a household income between 150% and 200% of the federal poverty guidelines to pay half the normal naturalization fee (31). In 2018, USCIS proposed changes to the fee-waiver form and new standards for how it will determine eligibility for the program. In the proposed changes, receipt of a means-tested benefit will no longer serve as a justification for a fee waiver, and applicants will have to submit a tax transcript rather than a tax return to prove that their income falls below the required threshold (32, 33). Our analysis of the policy initiative of 2010 should inform public scrutiny of the 2018 proposal.

## Materials and Methods

**Data.** To examine the effects of the reform of the fee-waiver program, we used data from the American Community Survey (ACS) from 2007 through 2016. To limit the sample to low-income LPRs who are likely eligible for citizenship, we focused on foreign-born respondents age 18–65 who have been living in the United States for more than 6 y (or more than 4 y if married to a citizen) and less than 40 y and with a household income less than or equal to 300% of the federal poverty guidelines. The ACS does not contain information on legal status, so following ref. 37, we also excluded Mexicans with a high-school or lower education level who constitute the largest undocumented immigrant group, and therefore are ineligible for citizenship (38). For similar reasons, we also excluded immigrants who are likely on student visas, those residing in group quarters, and veterans. We then divided this subsample into a treatment and control group based on their eligibility for the standardized federal fee waiver. Specifically, respondents with household incomes of less than or equal to 150% of the federal poverty guidelines and those who receive means-tested benefits were considered eligible for the fee waiver and placed into our treatment group. LPRs who did not meet either of those criteria were ineligible and hence placed into the control group. Because the policy change occurred in late 2010 and the application process to naturalize can take up to a year after an application is submitted, we stipulated 2012 as the first year under the treatment regime.

Further details about the sample and descriptive statistics are reported in *SI Appendix*. Replication files are available in ref. 39. By design, the control group had higher incomes and were half as likely to be unemployed compared to the treatment group. Nevertheless, the two groups were well balanced on other demographic characteristics. For instance, average age, racial composition, average years of residency in the United States, and proportion reporting that they spoke English at home were virtually identical between treatment and control.

**Empirical Strategy.** Our primary identification strategy is based on a difference-in-differences framework comparing naturalization rates for eligible (treatment) and ineligible (control) immigrants before and after the changes to the fee-waiver program came into effect in 2012. In particular, we estimate the following fixed-effects regression:

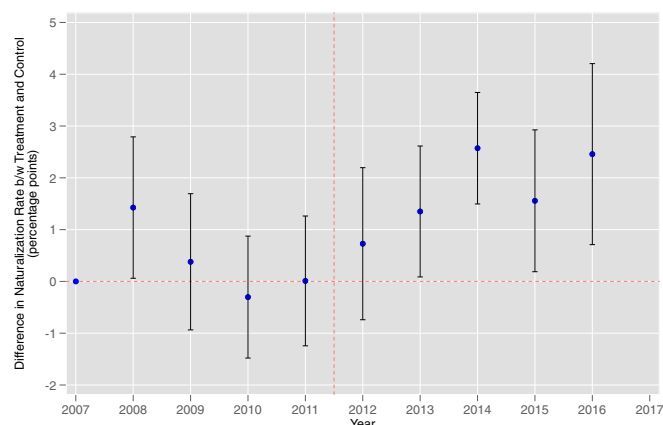
$$y_{ist} = \alpha + \beta_1 \text{Treatment}_{ist} + \beta_2 \text{Post}_t + \beta_3 \text{Treatment}_{ist} \times \text{Post}_t + \beta_4 X_{ist} + \beta_5 W_{st} + \gamma_s + \sigma_t + \epsilon_{ist}.$$

In this equation,  $y_{ist}$  is the outcome coded as one if immigrant  $i$  from state  $s$  is naturalized in year  $t$  and zero otherwise;  $\text{Treatment}_{ist}$  is a treatment group indicator; and  $\text{Post}_t$  denotes 2012 or later years. The vector  $X_{ist}$  includes controls for personal characteristics (gender, race, age, age squared, education, area of origin, residency, residency squared, residing in a metropolitan area, indicators for being married and married to a citizen, whether the respondent speaks English at home, wage, and labor force status), and  $W_{st}$  similarly includes state-level controls (unemployment rate, average wages, and state-specific linear time trends). Next,  $\gamma_s$  denotes state fixed effects, which control for permanent differences in naturalization rates across localities. We also control for year fixed effects ( $\sigma_t$ ), accounting for aggregate fluctuations common to all LPRs, such as the effect of changes in N-400 fees or the mobilizing effect of federal elections. Lastly,  $\alpha$  is the intercept and  $\epsilon_{ist}$  is the error term.

The coefficient of interest is  $\beta_3$ , which identifies the average treatment effect on the treated, meaning the average difference in the naturalization rate in the treatment group relative to the control group due to the fee-waiver standardization after accounting for an array of personal and state-level characteristics. The identification assumption states that, in the absence of the standardization of the fee-waiver program, naturalization behavior across our treatment and control groups would have followed parallel trajectories. We provide evidence supporting this parallel-trends assumptions by examining naturalization trends prior to 2012. Specifically, we interact the treatment group variable ( $\text{Treatment}_{ist}$ ) with indicators for each year. Similar trends prior to the policy are consistent with small and statistically insignificant values for the interactions before 2012.

## Results

**Effects on Naturalization Rate.** Fig. 2 displays the main results from the difference-in-differences regressions. For each year before and after the fee-waiver standardization, it shows the estimated coefficient of the interaction term of the treatment group dummy and year indicator. There are two main findings. First, naturalization rates increased at different rates for the eligible (treatment) group compared to the ineligible (control) group following the changes to the fee-waiver program. When averaging over the 3-y period before (2009–2011) and after (2012–2014) the reform, the results suggest that the fee-waiver standardization increased the naturalization rate in treatment relative to control by about 1.5 percentage points (p.p.) (95% CI 1.1–2; see *SI Appendix*, Table S2 for details and alternate time windows).



**Fig. 2.** The impact of the fee-waiver reform on naturalization rates. Following the federal fee-waiver reform, naturalization rates increased in the eligible (treatment) relative to the ineligible (control) group. Dots denote point estimates, and vertical lines correspond to 95% CIs. The number of observations is 739,301.

Second, consistent with the parallel-trends assumption, we generally find no significant differences in the trends of the naturalization rates between the two groups prior to the fee-waiver standardization in 2012. The only exception is the interaction in 2008, which is likely explained by a large citizenship-fee increase in 2007 (from \$400 to \$675) that led to a significant but somewhat differential surge in applications right before its enactment (40).

In *SI Appendix*, we report a series of robustness checks which demonstrate that the results are similar when we use alternative poverty cutoff levels for the control group, change the sample restrictions, control for state-specific linear trends in naturalizations, include low-educated immigrants from Mexico, control for citizenship question imputation in the ACS, and use 2011 (instead of 2012) as the first year post-waiver standardization.

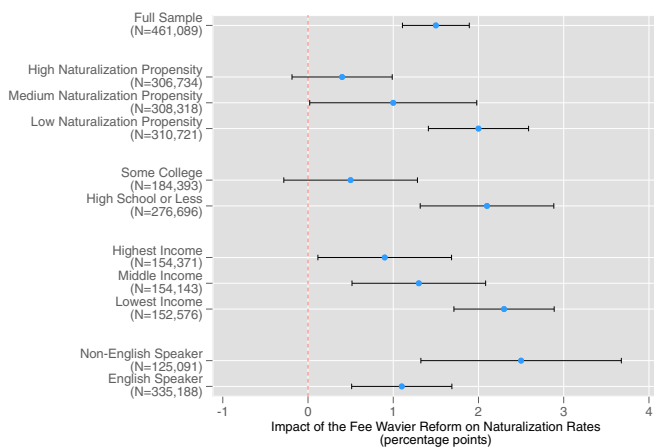
**Magnitude.** Our results show that the changes to the fee-waiver program enabled low-income immigrants to become citizens. To interpret the 1.5-p.p. average increase as estimated in our regression, consider the year 2013, when there were approximately 5.02 million foreign-born residents who were eligible for the fee waiver and who met our sample definition. The changes to the fee-waiver process enabled 1.5% of this group, or roughly 75,318 eligible LPRs, to become citizens who otherwise would not have applied. This increase amounts to about 10% of all submitted naturalization applications in 2013 or about 48% of all the 156,465 fee-waiver applications that were approved for naturalizations in 2013 (18) (see *SI Appendix* for details).

**Effect Heterogeneity.** For which immigrant groups was the fee-waiver reform most effective? Previous research on take-up of federal benefits has shown that they often benefit the least disadvantaged among the eligible groups, since the poorest often have greater difficulty accessing the benefits (19–21, 41). Given this finding, we might expect that the fee-waiver reform, since it makes it easier to access the benefit, would have the largest effect among eligible LPRs who face weaker barriers to applying—e.g., those with relatively higher incomes, better language skills, and higher education levels.

Fig. 3 shows the effects of the fee-waiver standardization on the naturalization rate when we stratify the sample by income, language, education, and the propensity to naturalize. The propensity to naturalize is estimated by following the methodology discussed in ref. 42 (see *SI Appendix* for details). In contrast to expectations, we find that the fee-waiver reform had a larger impact on precisely those LPR groups who are most likely to be deterred by burdensome, complicated application processes. The treatment effect of easing the access to the fee waiver is more than two times as large for households without an English speaker (2.5 p.p. versus 1.1 p.p.;  $P = 0.028$ ), more than twice as large for immigrants in the lowest income tercile (2.3 p.p. versus 0.9 p.p.;  $P = 0.012$ ), and four times higher for individuals with lower education (2.1 p.p. versus 0.5 p.p.;  $P = 0.004$ ). It is also much higher for those with the lowest as opposed to the highest propensity to naturalize (2.0 p.p. versus 0.4 p.p.;  $P < 0.001$ ).

**Mechanisms.** What might explain the finding that the impact of the fee waiver is concentrated among the most disadvantaged eligible LPRs? It stands to reason that the subgroup of eligible LPRs who have lower levels of education, lower incomes, and lower English skills are, if anything, less well-informed about the federal fee-waiver program compared with eligible LPRs with more resources (15). Therefore, differences in information about the fee waiver are unlikely to explain the heterogeneity in its effects on the naturalization rate. Instead, our conjecture is that part of the enabling effect is driven by immigration service providers (ISPs). Previous research demonstrates the





**Fig. 3.** Heterogeneous effects of the impact of the fee-waiver reform across different subsamples. The reform was more effective among LPRs who face higher barriers to naturalizing. Dots denote point estimates, and horizontal lines correspond to 95% CIs.

importance of local civic structures and community organizations in mobilizing immigrants to naturalize (43, 44). ISPs often assist the most disadvantaged LPRs, such as those with limited English proficiency, with their citizenship applications. And, in turn, many ISPs routinely screen their clients for fee-waiver eligibility and help them apply. Because the reform simplified the administrative process, it likely enabled ISPs to assist or encourage more clients to apply for the fee waiver. Therefore, if ISPs are a mechanism for encouraging people to claim the federal fee waiver, this could explain why the impact of the fee-waiver reform was bigger for those LPRs who face the highest barriers to citizenship.

We conducted two tests to examine the validity of this conjecture. First, we stratified the sample geographically based on the density of ISPs in the state where the LPRs reside (45). The results suggest that the effects of the fee-waiver standardization were about six times larger in states with a higher density of ISPs (9.0 p.p. versus 1.1 p.p.;  $P = 0.004$ ) (see *SI Appendix* for details). Second, using survey data collected from fee-waiver-eligible registrants for a state-wide naturalization program in New York (Stanford University Institutional Review Board Protocol 34554), we examined various predictors of fee-waiver use. In a regression with a series of personal characteristics, we find that ISP assistance is by far the most important predictor of fee-waiver use. In fact, we find that, when applying for naturalization, LPRs receiving ISP assistance were 21.5 p.p. more likely to use the fee waiver ( $P = 0.000$ , 95% CI 10.0–33.0; see *SI Appendix* for details), controlling for demographics such as age, years of residency, household income, country of origin, and education. Taken together, these results suggest that assistance efforts by ISPs help explain why the reform raised the take-up rates especially among those who were most in need of the fee-waiver program.

**Enabling vs. Substitution.** Apart from enabling immigrants to claim the fee waiver more easily and apply for naturalization, did the reform also result in substitution effects? Consider again the year 2013, when the USCIS approved 156,462 fee-waiver applications for citizenship. From this number, we subtract our estimated 75,318 newly enabled naturalizers attributed to the fee-waiver reform. This leaves us with ~81,144 naturalizers who we do not classify as enabled by the policy reform. The question is what percentage of this group were substituters. It would be straightforward to estimate the substitution effect were there public data on the number of naturalization fee waivers prior

to the reform; alas, these data are not available. However, using the best available auxiliary data and a set of assumptions detailed in *SI Appendix*, we calculated that only between 33,000 and 45,000 of those 81,144 fee-waiver users likely would have filed a fee-waiver application had the prereform fee-waiver rules remained in place. Therefore, the remaining 36,000–48,000 fee waivers are likely attributable to substitution, meaning that they resulted from naturalizers who were induced by the reform to use a fee waiver instead of paying out of pocket. Taken together, this decomposition suggests that, of all the fee waivers approved in 2013, about half were due to newly enabled applicants, roughly a quarter were due to substitution, and roughly a quarter would have occurred anyway even under the old rules (see *SI Appendix* for details). This 25% substitution effect is encouragingly lower than the documented higher substitution effects on the order of 40–60% in other public benefit programs, such as health insurance (24–28), cash assistance (29), and child care (30).

### Discussion

In this study, we raised three questions. On the first question, as to whether the fee-waiver reform increased naturalization rates, we provide evidence of a substantial increase in naturalization rates among low-income LPRs. On the second question of whether these effects are weaker or stronger for the neediest, we find that the effect is concentrated among the most disadvantaged LPRs, who have lower levels of education, lower English-language skills, and lower incomes. On the third question, we find that the data are consistent with at least some substitution, but our calculations suggest that the enabling effect exceeded the substitution effect.

The result that among the eligible poor, the effects are stronger for the most needy stands in some tension to expectations coming from both behavioral economics and political economy. Still, the greater increase in participation among the more disadvantaged applicants is sustained despite the relatively high bandwidth tax that the most marginalized applicants may still face, even after the reform. Instead of being explained by a bandwidth constraint, our results are more consistent with a framework of “structured mobilization” (43), in which the interaction of the policy reform and the efforts of grassroots organizations channel the expression of individual agency. In particular, ISPs, which have an incentive to locate their offices in poor areas with concentrated immigrant populations, likely facilitated fee-waiver take-up. The most disadvantaged therefore have had greater proximity to organizations poised to take advantage of a reduction in the bandwidth tax. We thus get a result that is more consistent with maximizing the social gains of a benefit program than would be predicted by results from similar interventions for other targeted benefits.

Similarly, the results on substitution suggest that, in contrast to the findings from some other public-benefits programs, the primary effect of the fee-waiver reform was to enable new applicants rather than incentivize substitution. It enabled considerably more LPRs to apply for naturalization than it induced LPRs who would have applied anyway to substitute a fee waiver for paying out of pocket. While better data are needed to more precisely estimate the magnitude of the substitution effect, it appears that the fee-waiver reform compares favorably to other public-benefits interventions.

More broadly, our results are consistent with findings from the small, but growing, literature examining the returns to policy interventions designed to lower barriers to naturalization among low-income immigrants. Previous work has demonstrated that fee vouchers and an information nudge result in substantial increases in citizenship-application rates (14, 15). Here, we find similar, albeit smaller, increases from a related federal

intervention that improved access to the fee waiver through the introduction of a standardized form and clear rules for eligibility. One potential reason why the magnitude of the effects found for this intervention is smaller is that those experiments were focused on subpopulations who had identified themselves as being interested in applying for citizenship. Another potential reason is that streamlining the fee-waiver process constitutes a weaker intervention than a personalized fee voucher or information nudge.

Overall, these findings suggest that the high application fees and difficulties accessing the fee waiver are barriers to citizenship for low-income LPRs. While these are not the only factors con-

tributing to the relatively low naturalization rates in the United States, our results suggest that examining the returns to policy interventions designed to facilitate access to citizenship is an important avenue for future research. Such evidence is essential to clarify the factors behind low naturalization rates and to guide policymakers and ISPs interested in raising them.

**ACKNOWLEDGMENTS.** We thank members of the Immigration Policy Lab at Stanford University for helpful comments and suggestions. Some of this material is based upon work supported by Robin Hood Grant SPO 123714 and The New York Community Trust Grant P16-000101. The funders had no role in the data collection, analysis, decision to publish, or preparation of the manuscript.

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