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Access to Higher Public Education and Locational Choices of Undocumented Migrants

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Abstract

Many states have experienced a large influx of undocumented migrants in recent years. This has created new demands on higher educational systems at the state level. Some states have passed legislation to restrict the access of undocumented migrants to higher public education whereas others provide access in various forms including in-state tuition. Our research examines a related issue that has not been researched much, namely, the impact of educational access on the location decisions of undocumented migrants in the US. Undocumented migrants appear to locate in states with high average median real per capita incomes. There is also evidence of clustering of undocumented migrants in states with large migrant networks. The effect of educational access on the percentage of undocumented workers in a state is mixed and small in most specifications, a finding perhaps indicative of a trade-off between competing priorities the choice of location.

Keywords: Unauthorized migration; undocumented migrants; undocumented immigrants; illegal migration; migrant networks; network-based migration; migrant clustering, migrant location decisions.

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1. Introduction

Many states have experienced a large influx of undocumented migrants in recent years. This has created new demands on the educational systems at the state level, resulting in several state-level educational policy reforms, some favoring and others limiting access of undocumented migrants to higher public education. Our research examines the impact of differences in state-level policies regarding access to higher education (post-secondary) on the location choices of undocumented migrants.

The Pew Hispanic Center uses the term “unauthorized migrant” to refer to “a person who resides in the U.S. but who is *not* a U.S. citizen, has *not* been admitted for permanent residence, and is *not* in a set of specific authorized temporary statuses permitting longer-term residence and work.” Roughly 30% of the foreign-born population in the US in 2005 was comprised of undocumented migrants. There was also considerable variation in the percentage of undocumented migrants across states, with California (24%), Texas (14%), Florida (9%), New York (7%), Arizona (5%), Illinois (4%), New Jersey (4%), and North Carolina (3%). having the highest concentrations of undocumented migrants in 2005.¹

Different states have responded to the new and additional demands on their public educational systems in different ways. Some states have passed legislation to restrict the access of undocumented migrants to higher education whereas others provide access in various forms including in-state tuition. The National Conference of State Legislatures website indicates that eighteen states currently allow in-state tuition for undocumented students. California, Colorado, Connecticut, Florida, Illinois, Kansas, Maryland, Minnesota, Nebraska, New Mexico, New Jersey, New York, Oregon, Texas, Utah, and Washington have passed state-level statutes covering in-state tuition rates to undocumented students, while Oklahoma and Rhode Island do

¹ Passel J. S. (2005) states “The appearance of Arizona and North Carolina on this list highlights another recent trend. In the past, the foreign-born population, both legal and unauthorized, was highly concentrated. But, since the mid-1990s, the most rapid growth in the immigrant population in general and the unauthorized population in particular has taken place in new settlement areas where the foreign born had previously been a relatively small presence.”

so through Board of Regents decisions.² Arizona, Georgia, and Indiana barred undocumented students from receiving in-state tuition rates in 2006, 2008 and 2011, respectively. South Carolina and Alabama barred undocumented students from enrolling in public postsecondary institutions in 2008 and 2011, respectively. These policy changes are a part of the contentious and contested debates across the nation regarding the burdens and benefits of illegal immigration and the need for comprehensive immigration reform.

There is very little direct research on the impact of educational access on the location decisions of undocumented migrants in the US, despite the contentious nature of the matter. This study examines four broad sets of factors at the state level that arguably influence the number of undocumented migrants residing in a state as a percentage of the total state population, namely: *economic opportunities*, *educational access policies*, *size of migrant network*, and the *quality of life*. Previous research has identified greater economic opportunities as important determinant of the percentage of undocumented migrants at the state level (Cebula, Duquette, & Mixon, 2013; Cebula, Foley, & Boylan, 2014, Nair-Reichert, 2014). Our analysis of educational opportunities can be thought of as expanding the role of economic opportunities by introducing an inter-generational component, namely, the education and future income potential of part of the next generation in the U.S., the children of illegal migrants.

Undocumented migrants are more likely to locate in states that offer greater economic opportunities, which is consistent with income-maximizing behavior. Economic opportunities at the state level have been variously proxied in previous research by median family income, welfare benefits, lower cost of living, state tax rates, and rates of unionization. The welfare magnet hypothesis suggests that foreign-born welfare recipients whose objective is to maximize their incomes may be clustered in the states that offer the highest benefits.³ The current research also relates to the literature on welfare magnets because access to in-state tuition can be considered as another attractive form of benefit for undocumented migrants and their children. Undocumented migrants would likely prefer states with no income tax, *ceteris paribus*, as

² <http://www.ncsl.org/research/education/undocumented-student-tuition-state-action.aspx>

³ Borjas G. (1999); The Economic Report of the President (2005 p. 110) notes “To obtain work, some undocumented immigrants resort to using false documents, such as fake Social Security cards or green cards.”

residing in such states would lower both their tax burden and elevate the probability of detection by the government and law enforcement authorities.⁴

Network-based migration may also explain the location choice of an undocumented migrant. The economic and non-economic costs of immigration are lower in host countries with existing migrant networks and therefore influence the choice of the destination country.⁵ This same argument is applicable to the choice of the destination state once the undocumented migrant is in the US. In The Economic Report of the President (2005, p. 110), it is observed that “Once workers are here, additional undocumented immigration may take place as family members and friends join the workers.” The literature identifies climatic conditions as a quality of life variable that impact location decisions of migrants since they are more likely, *ceteris paribus*, to gravitate towards warmer and more comfortable climates where they are likely to find more work in occupations such as construction, landscaping, and farming.⁶ Passel (2006) estimated that undocumented migrants constituted approximately 24% of all workers employed in farming occupations, 17% in cleaning, 14% in construction and 12% in food preparation industries.⁷

Our results indicate that the effect of educational access on the percentage of undocumented workers in a state is mixed and very small in most specifications, indicating perhaps a trade-off between competing priorities in their choice of location. Interestingly, the interaction terms between the educational access variables and the networks variable is negative, suggesting that even among states that have a favorable education policy, undocumented migrants prefer states where there is likely to be a smaller number of undocumented migrants competing for admission.

Related Literature

⁴ Tullock, (1971); Conway & Houtenville, (2003); Gale & Heath (2000); Cebula & Alexander, (2006).

⁵ For example, Carrington, Detragiache & Vishwanath (1996); Bauer, T. K.; Epstein, G.S.; Gang, I. N. (2002), Cebula R. J. et al.. (2013).

⁶ E.g., Saltz (1998); Cebula & Alexander (2006), Gale & Heath (2000), Cebula, Duquette, & Mixon (2013).

⁷ Passel J. S. (2006).

While there is relatively little direct literature on the impact of educational access on the location choices of undocumented workers, we can gather important insights from papers examining the impact of such educational policy changes on the educational outcomes of undocumented migrants. In general, the impact of educational policy changes on educational outcomes of undocumented migrants is mixed and somewhat limited. Kaushal (2008) analyzed data for Mexican noncitizen young adults in 10 states that offered for in-state tuition benefits to unauthorized migrants in an attempt to approximate the results for the unauthorized migrant population. He concluded that that tuition benefit laws have had positive but limited effects on college enrollment by Mexican noncitizen students. The study considers only a sample of the population that came to the US before 2001 and had been in the country for at least 3 years, and it did not include non-Mexican migrants. Stella M. Flores (2010) concluded that students who are likely to be undocumented are also more likely to attend college in states with in-state tuition benefits. Flores & Horn (2009) analyzed data on in-state tuition recipients who were likely to be undocumented at a selective public institution in Texas and concluded that they were as likely to graduate as a comparable group of Latino students born in the US. Chen & Juhn (2010) exploit state and time variation in the passage of the educational laws benefitting undocumented migrants to examine the effects of these laws on the probability of attending college for 18- to 24-year-olds who have a high school degree. They use individual-level data for 2001-2005 from the American Community Surveys and the 2000 U.S. Census. They find “some evidence suggestive of a positive effect of the laws on the college attendance of older Mexican men, although estimated effects of the laws in general are not significantly different from zero.”

Zota (2008) summarizes the limited impact of these educational policies on enrollments evidenced in previous research. “In the four states that enacted tuition benefit laws prior to 2003—California (2001), New York (2002), Texas (2001), and Utah (2002)—college enrollment among Mexican noncitizen youth increased by only 1.2 percent from 1999 to 2002. From 2002 to 2005, enrollment increased by 3.5 percent. Although the increase in college enrollment among Mexican noncitizen youth is significant for that population, it is not dramatic enough to narrow the attainment gap between noncitizens and natives..... So, although the impact of the tuition benefit laws may be significant for portions of the population and for individuals, college enrollment as a whole remains largely unaffected.”

The difference between in-state and out of state tuition is substantial. Kaushal (2008) indicates that “In the 2004–2005 academic year, community colleges in states that provided in-state tuition to the undocumented had average tuition and fees of \$1,938 for residents and \$5,783 for nonresidents; the average undergraduate tuition and fees in public colleges and universities in these states was \$3,935 for residents and \$10,860 for nonresidents” (Washington Higher Education Coordination Board, 2005). Dougharty, et al. (2010) address the large negative impact of the sizable difference in out-of-state and in-state tuition and fees on undocumented migrants “...because they tend to have low family incomes (López, 2010; Mehta & Asma, 2003; Passel, 2005a, 2005b; Rangel, 2001). Compounding this problem is the fact that they are not eligible for federal financial aid (Biswas, 2005; Perry, 2004; Szelenyi & Chang, 2002) and do not qualify for state student aid except in Texas and New Mexico (Dougherty, Reid, & Nienhusser, 2006; Fischer, 2004; Tulsa World, 2007). Moreover, it is hard for undocumented students to get private funding (Hausman & Goldman, 2001).” Hence, undocumented workers who are interested in their own higher education or that of their children have an incentive to move to states with favorable educational access policies.

However, as Chen and Juhn (2010) have suggested, lack of access to financial aid (especially federal financial aid) to pay for the in-state tuition and other college expenses, and the employer sanctions under the Immigration Reform and Control Act that limit undocumented migrants’ prospects of obtaining higher level jobs even with college degrees may impede these students’ from participating in higher education, despite access to in-state tuition. Overall, the effective utilization of avenues for higher education in states with favorable in-states tuition policies appears to be somewhat limited. This in turn suggests that favorable educational policies for undocumented migrants may have a limited impact their location decisions. This is an empirical issue that we explore in the next section.

3. Analytical Framework

We adopt a cost-benefit analysis approach wherein the undocumented migrant making a location decision weighs the expected costs and benefits over her lifetime. An undocumented migrant who has decided to migrate to the US from home country i now has the choice of migrating to any of the j states (where j ranges from 1 to 50). An undocumented migrant from country i will chose to migrate to state j ($=1$) if and only if her expected net discounted present value from that action, DPV_{ij} , is both positive and is the highest net discounted present value she can obtain in comparison to locating in any of the other j states (where $j \neq 1$).⁸ This is captured by equation (1) below:

$$DPV_{ij} > 0; \text{ and } DPV_{ij} = \max(DPV_{ij}) \text{ for } j, \text{ where } j = 1, 2, \dots, 50 \quad (1)$$

We use the Tiebout-Tullock hypothesis as a framework for this analysis since it models the consumer-voter as evaluating both the government goods and services and the tax burden at the locations of choice in determining whether to migrate to state j . Several other papers have following this approach and considered two broad sets of determinants that impact DPV_{ij} namely, economic conditions and quality of life conditions in those states.⁹ The present study follows this approach and examines four broad sets of factors at the state level that influence DPV_{ij} and thus the percentage of undocumented migrants in a state, namely *economic opportunities*, *educational access policies*, *size of migrant network*, and the *quality of life*. Table 1 describes the variables and data sources. Table 2 provides the correlation coefficients for the key variables used in the analysis. Table 3 indicates the list of states that had implemented educational access policies favorable to undocumented workers by 2005.

The data on the percentage of undocumented migrants as a part of the total population at the state level is from the PEW 2005 Survey. Our dependent variable $umrate_{ij}$, is the log of the percentage of undocumented migrants in state j in 2005. We express the stock of undocumented migrants as a percent of the state's total population to facilitate comparisons of the

⁸ We do not consider factors such as distance and moving costs in calculating DPV_{ij} as reliable data are largely unavailable in the case of undocumented migrants.

⁹ For example, Riew (1973), Renas (1983), Vedder et al. (1986), Cebula & Alexander (2006) and Nair-Reichert (2014).

undocumented migrant location decisions across states. The Pew Hispanic Center estimates the total stock of undocumented migrants in the U.S. in 2005 to be 11.1 million.¹⁰ Interestingly, Passel & Cohn (2008) estimated that there were nearly 12 million undocumented migrants in the U.S. in 2008.

We consider two measures of educational access for undocumented migrants: a variable *ed_fav_im_dum* (*favorable ed. policy dummy*) that equals 1 if a state has a favorable educational policy towards undocumented migrants and equals 0 otherwise. Another variable, *ed_eff_yrs* (# of years since favorable ed policy was enacted), captures the number of years since the favorable educational policy was implemented by the state.

Undocumented migrants appear to locate in states with high average median real per capita incomes. There is also evidence of clustering of undocumented migrants in states with large migrant networks. The *economic opportunities* in state *j* are proxied by the log of real median income in 2004 *rmedinc_{ij}* and the state income tax rate dummy *inc_tax_{ij}* that equals 0 when the state has no income tax.¹¹ We use lagged values of these explanatory variables to address potential endogeneity issues and also because migration decisions in year *t* are often based on economic conditions prevailing in the previous period. The proxy for the size of the migrant network is the log of total documented Hispanic population at the state level *network_j*, as 56% of the unauthorized migrants in the US in 2005 were from Mexico.¹² The mean January temperature at the state level for the period 1971- one 2000 is a proxy for climatic conditions and quality of life in a state.

The basic model is estimated using Equation (2) below:

$$umrate_j = \alpha_1 + \alpha_2 network_j + \alpha_3 rmedinc_j + \alpha_4 jan_temp_j + \alpha_5 ed_fav_im_dum_j + \alpha_6 ed_fav_networks_j + \varepsilon \quad (2)$$

We also report other specifications with the number of years of favorable educational policy in each state (*ed_eff_yrs*) and its interaction with our network variable (*ed_eff_networks*). We

¹⁰ Passsel (2005).

¹¹ The coefficients of the logged independent variables are interpreted as elasticities.

¹² Passsel (2006).

expect the coefficients for *jan_temp* and *inc_tax* be negative and significant, and those for all other independent variables to be positive and significant coefficients with the exception of the educational access variables where the theory is indeterminate regarding the sign and significance. We report results estimated using OLS with robust standard errors in Table 4.

3. Results and Discussion

Table 4 presents the results of our analysis. The t-statistics are reported in parenthesis under the coefficients. We find that migrant networks are an important determinant of undocumented migration in all four specifications - the presence of a large documented Hispanic population in a state has a positive and significant impact on undocumented migration at the 1% level.¹³ Such clustering of undocumented migrants in states with large migrant networks is likely because the economic and non-economic costs associated with locating in such states and finding suitable employment are lower.¹⁴ Our results also support the importance of economic opportunities in an undocumented migrant's decision to locate in a state in all specifications. The coefficient of the median real income in a state is positive and statistically significant at the 1% level. The state income tax dummy and the quality of life measures in a state, namely, the average January temperature, are both statistically insignificant in all specifications.

Our main variables of interest are the two educational access policy variables, *ed_fav_im_dum* (*favorable ed. policy* dummy) and *ed_eff_yrs* (# of years since favorable educational policy was enacted). In Table 4, Models 1 and 2, we find that the coefficients of both educational policy variables are negative and statistically insignificant. This is not a surprising result since previous studies have found limited impact of favorable educational access policies on college enrolment of undocumented students. This finding in the present study suggests that a similar impact is likely with respect to location decisions. In Models 3 and 4, we interact the educational access policy variables *ed_fav_im_dum* and *ed_eff_yrs* individually with the networks variable. This approach is motivated by the fact that the presence of a sizable network in a state can, as in the

¹³ This can be interpreted as a 1% increase in the total Hispanic population in a state leading to a 0.36% increase in the percentage of illegal immigrants in a state.

¹⁴ This finding, known as the "friends and Neighbors effect," is to be expected (Cebula, Kohn, & Vedder, 1973).

case of economic opportunities, lower the economic and non-economic costs associated with access to higher education and positively influence location choice. On the other hand, it may also result in greater competition for admission to higher education, and this may serve as a disincentive to undocumented migrants to take advantage of the favorable tuition opportunity. The sign of the interaction terms will depend on which effect dominates. If the positive cost reduction effect of networks dominates its negative competition effect, we expect the interactions terms in Models 3 and 4 to be positive and significant, or vice versa.

In Model 3, the coefficient on *ed_fav_im_dum* (*favorable ed. policy dummy*) now changes signs and is positive and statistically significant as compared to Model 1, where its coefficient was negative and insignificant. The interaction term, *ed_fav_networks* is negative and statistically significant, indicating that the negative competition effect of networks is larger than the positive cost-reduction effect. The size of the network negatively moderates the impact of favorable educational access policies on location decisions and undocumented migrants appear to not to prefer residence in states with both large networks and favorable educational access policies. We use our alternate measure of educational access *ed_eff_yrs* (# of years since favorable educational access policy was enacted) and its interaction terms with our networks variable, *ed_eff_networks*, in Model 4 and find that the results in Model 3 are robust to the alternate proxy for the educational access policy variable. The policy became effective in New Mexico only in 2005, so as an additional robustness check we dropped New Mexico from the list of states with educational access policies favorable to undocumented migrants and re-estimated the regressions. The sign and significance of the educational access policy variables and their interaction terms with the network variable were similar to the results in Models 3 and 4. The other results also remained unchanged.¹⁵

4. Conclusions

Many states have experienced a large influx of undocumented migrants in recent years. This research investigates whether favorable educational access policies at the state level influenced the location decisions of undocumented migrants in the US in 2005. Our analysis suggests that there is likely to be clustering of undocumented migrants in states with large migrant networks, and

¹⁵ The results are not reported in the paper but are available from the authors upon request.

good economic opportunities, as proxied by the state's median real family income. We have some exploratory evidence on whether educational access policies at the state level influence location choices of undocumented migrants. Our initial results suggest that while larger networks provide greater access to economic opportunities, they may also increase competition for admissions to higher education in states that have favorable educational access policies towards undocumented migrants. Hence, educational access policies for undocumented migrants are, *ceteris paribus*, less likely to act as a magnet for the influx of additional undocumented migrants.

Naturally, we consider these results to be exploratory. Thus, we present these results with several caveats. This analysis is limited by lack of direct measures of the number undocumented migrants and the use of cross-sectional data for the year 2005. Although the estimates of illegal migrants are calculated using rigorous methodology, they are nonetheless subject to a margin of error. Another reason for the limited impact may be the timeframe of our study. The data on undocumented migrants is from 2005 while the first adoption of such educational access policies at the state level was in 2001 in Texas and California. Hence, there may not have been sufficient time to experience the full impact of these policies on location choices of undocumented workers. Moreover, there clearly may be several other factors that influence location decisions of undocumented migrants in the U.S., such as health care, intensity of deportation efforts at the state level, and so forth, that this study has not explicitly addressed. As better quality longitudinal data becomes more readily available, a dynamic analysis will be able to offer greater insights into the impact of educational access policies on the longer-run location choices of undocumented migrants.

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Table 1: Definition of Variables and Data Sources

Variable Name	Variable Name - Descriptive	Description	Source
<i>umrate_j</i>	% undocumented migrants (in logs), <i>umrate_j</i>	% undocumented migrants in state j's population - 2005	Pew Hispanic Center (2013), U.S. Census Bureau <i>Table 17</i> (2007).
<i>networks_j</i>	Hispanic population (logs)	total Hispanic population in state j	Population Division, Census Bureau, Table 4, July 1, 2004 (SC-EST2004-04)
<i>rmedinc_j</i>	Median real income 2004 (logs)	real median family income in 2004 in state j	Census Bureau, Table H-8. Median Household Income by State: 1984 to 2012
<i>inc_taxes_j</i>	State income tax dummy	=1 if state has income tax; 0 otherwise	U.S. Census Bureau (2005, Table 455)
<i>jan_temp_j</i>	Average Jan. temperature	average temperature in January in state j	U.S. Census Bureau (2005, Table 378)
<i>ed_fav_im_dum</i>	Favorable ed. policy	value = 1 if a state has access policies such as in-state tuition for undocumented migrants	http://www.ncsl.org/research/education/undocumented-student-tuition-state-action.aspx
<i>ed_eff_yrs</i>	# years of favorable ed policy	total # of years the policy has been in effect in the state	calculated by authors from <i>ed_fav_im_dum</i>
<i>ed_fav_networks</i>	Favorable ed. policy *networks (logs)	interaction term between favorable educational access policy and networks (logs)	
<i>ed_eff_networks</i>	# years favorable ed. policy *networks (logs)	interaction term between # years favorable educational access policy and networks (logs)	

Table 2: Correlation Matrix

	Percent undocumented workers	Networks (logs)	Average Jan. temp.	Median income (logs 2004)	State income tax dummy	Favorable ed. policy	# years favorable ed policy
Percent undocumented workers	1						
Networks (logs)	0.5755	1					
Average Jan. temp.	0.4111	0.3466	1				
Median income (logs 2004)	0.2891	0.072	-0.1287	1			
State income tax dummy	-0.2674	-0.1799	-0.0549	-0.1485	1		
Favorable ed. policy	0.28	0.4962	0.0821	0.0257	-0.111	1	
# years favorable ed policy	0.3689	0.6882	0.1318	0.0735	-0.1581	0.9242	1

Correlation coefficients in bold typeface are significant at the 5% level or higher.

Table 3: States with Educational Access Policies Favorable to Undocumented Migrants by 2005

State	Year Policy Passed	<i>ed_fav_im_dum</i>=1 for these states; =0 otherwise	ed_eff_yrs
California	2001	1	5
Illinois	2003	1	3
Kansas	2004	1	2
New Mexico	2005	1	1
New York	2002	1	4
Oklahoma	2003	1	3
Texas	2001	1	5
Utah	2002	1	4
Washington	2003	1	3

Table 4: Education Policy and Location Choices of Undocumented Migrants

<i>Dependent variable: percent undocumented workers (in logs)</i>	Model 1	Model 2	Model 3	Model 4
Networks (logs)	0.35** (6.05)	0.36** (5.92)	0.38** (5.7)	0.38** (5.91)
Average Jan. temperature	0.01 (1.18)	0.01 (1.16)	0.01 (1.14)	0.01 (1.21)
Median income (logs; 2004)	1.91** (3.98)	1.90** (4.01)	1.85** (3.99)	1.87** (4.02)
State income tax dummy	-0.23 (-1.44)	-0.25 (-1.53)	-0.27 (-1.64)	-0.27 (-1.63)
Favorable ed. policy	-0.11 (-0.67)		2.36** (2.73)	
# years of favorable ed. policy		-0.06 (-1.06)		0.47* (2.25)
Favorable ed. policy *Networks (logs)			-0.18* (-2.65)	
# years favorable ed. policy *Networks (logs)				-0.04* -2.44
Constant	-23.97** (-4.62)	-24.08** (-4.68)	-23.77** (-4.47)	-23.88** (-4.47)
# Observations	50	50	50	50
R-squared	0.70	0.71	0.72	0.72

Coefficients reported with t-values underneath. Robust standard errors.

** & * represent 1%, and 5% levels of significance respectively.