Examining Mobility Outcomes in the Housing Choice Voucher Program: Neighborhood Poverty, Employment, and Public School Quality

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Abstract

Low-income housing policies seeking to deconcentrate poverty and increase opportunities through mobility have produced mixed results. The Moving to Opportunity (MTO) program, for example, resulted in some beneficial outcomes for low-income households moving from high- to low-poverty neighborhoods, but it did not produce the widespread positive effects anticipated by many policymakers and researchers. The Housing Choice Voucher Program (HCVP) does not require moves to low-poverty neighborhoods, as MTO did, but rather it relies on a weaker policy of choice to achieve more income-diverse neighborhoods. As compared with what researchers have learned about the MTO participants, less is known concerning the mobility behavior and outcomes of HCVP recipients. Using survey data from voucher holders under the jurisdiction of two local housing authorities in California combined with secondary data from multiple sources, this article examines a range of outcomes, including neighborhood poverty rates, employment, and school quality, associated with mobility in the HCVP. The results of the analyses show that movers did not have better outcomes than nonmovers but, compared with conditions in their previous residence, movers lived in neighborhoods with lower poverty rates and better school quality after they moved. By contrast, employment for movers dropped significantly from before to after their moves.

Introduction

Compelling arguments about the harmful effects of poverty concentration contributed to a shift in federal policy during the past two decades. Support for the development of large public housing projects, common before 1970, faded, and approaches to promoting mixed-income environments were at the center of the policy discourse. The rehabilitation of public housing through Housing Opportunities for People Everywhere (HOPE VI) and policies aimed at discouraging poverty concentration in the Housing Choice Voucher Program (HCVP) emerged as strategies to thwart the replication of social problems in impoverished communities. Strong empirical evidence of the effects of these policies was notably limited at the time of their initial implementation.

Debates about policies promoting poverty deconcentration and mixed-income living environments are informed increasingly by empirical research in the United States and abroad; however, the research evidence as a whole remains mixed, with some purported benefits unsupported by the research (see Bolt and Van Kempen, 2011; Joseph, Chaskin, and Webber, 2007; Sanbonmatsu et al., 2011; and Sautkina, Bond, and Kearns, 2012). Much of our recent knowledge about poverty deconcentration comes from research on the Moving to Opportunity (MTO) program, a long-term, five-site experiment designed to discern the effects on low-income households of moving with housing assistance from high- to low-poverty neighborhoods. Researchers considered a wide range of potential MTO effects, including on individuals' mental and physical health, employment and economic conditions, educational attainment, criminal and risky behavior, social networks, and living environments (Sanbonmatsu et al., 2011).

MTO provided a wealth of information about the effects of mobility from high- to low-poverty neighborhoods within the context of a carefully designed experiment. The purpose of the experiment was to identify cause-and-effect relationships more clearly. In the social world, however, it is difficult to design such a policy experiment without limitations and to account for all, even most, possible influences on the variable of interest. Researchers have documented these shortcomings for MTO, which among others include the use of neighborhood poverty rate alone to capture troubled living environments, a lack of initial attention to proximate neighborhoods that might affect a target neighborhood, the number of participants, and the differences in site contexts and study designs that muddle the generalizability of the findings (see Briggs, Popkin, and Goering, 2010; and Goering, Feins, and Richardson, 2003). Despite these limitations, MTO offers valuable results that indicate that neighborhood poverty levels matter for some social outcomes, and it raises questions and motivates discussion about future housing policies and research evaluation designs.

MTO, by virtue of its design, operated differently than does the regular HCVP. The HCVP policies support residential mobility with the hope that voucher holders will improve their circumstances by moving, but it does not require any subset of clients to locate in lower poverty neighborhoods. Federal performance assessment of local housing authorities (LHAs), the agencies charged with local administration of the voucher program, explicitly values poverty deconcentration as part of the program. As a result, LHAs may set payment standards to try to encourage voucher holders to locate in low-poverty areas; nevertheless, voucher holders may choose neighborhoods for personal reasons rather than poverty levels (Basolo and Nguyen, 2009, 2005; Williamson, Smith, and Strambi-Kramer, 2009). These policies appear too weak to greatly influence voucher holders'

residential location decisions and noticeably affect poverty concentration among voucher holders at the regional scale. That is, they are very unlikely to produce mixed-income neighborhoods on a widespread basis.

Housing policy researchers support the conclusion that the HCVP does not induce significant poverty deconcentration (McClure, 2008; Varady, 2010). The HCVP has been studied far less intensely than the MTO program, however, with little attention to the range of possible outcomes associated with voucher-holder mobility. This article examines a set of outcomes using unique microlevel data for voucher holders under the administration of two LHAs in the same California county. In addition to considering the poverty rate in voucher neighborhoods, this research also investigates employment outcomes for voucher holders and school quality, a potentially key factor in the prospects for children of voucher holders. Specifically, the research explores the following questions.

1. What factors are associated with neighborhood poverty levels, employment status, and school quality? Particularly, are these outcomes different for movers versus nonmovers in the voucher program?
2. Are neighborhood poverty levels, employment status, and school quality different before and after residential relocation for the movers in the voucher program?

In the next section, I provide a brief overview of the rationale for mobility in housing programs and a summary of key research findings from programs aimed at deconcentrating poverty and fostering mixed-income environments. I then provide a discussion of the methods and data. I follow with a brief overview of the county and the LHAs associated with the voucher holders in this study, the descriptive statistics, and other analyses (including multivariate models) aimed at answering the research questions. The final section presents the research and policy implications of this study's findings.

Persistent Poverty and Policy: Mobility, Mixing Incomes, and Poverty Deconcentration

For decades, scholars and policy researchers have argued that residential space and location affect individual outcomes and that social structure is replicated through space (see Bolt and Van Kempen, 2011; Jargowsky, 1997; and Lefebvre, 1991). Of particular interest to urban and housing researchers is the longstanding concern with the effects of geography on social outcomes, principally the relationship among spatial location, the persistence of poverty, and individuals' health and welfare.

Scholarly contributions from Lewis (1966, 1959) concerning poverty in Mexican and Puerto Rican families sparked an early debate on intergenerational poverty. Lewis asserted that the responses of low-income people to their circumstances resulted in a subculture of poverty, which created seemingly insuperable barriers to exiting the impoverished lower class. Lewis influenced the poverty policy discussion in the 1960s, as evidenced by findings from a 1965 U.S. Department of Labor (DOL) report. The report, commonly known by the eponymous title, the Moynihan Report, was an analysis of poverty that focused on African-American families. The author of the report, Daniel Patrick Moynihan, asserted that cultural pathologies in low-income, African-American communities perpetuated a cycle of poverty (Gans, 2011; O'Connor, 2001).

The Moynihan Report was a DOL internal report and was not intended initially for widespread distribution. Aspects of the report became known publicly, however, and drew heavy criticism from social activists and others. This controversy essentially overwhelmed the totality of the report and rendered it ineffective as support for public policy change (Massey and Sampson, 2009; Wilson, 2009).

The scholarly debate about poverty, especially intergenerational poverty, in the 1960s coincided with social turmoil, social action, and new social policies. For housing policy, a landmark event during this period was a class action lawsuit, *Gautreaux v. Chicago Housing Authority*, filed in 1966. The plaintiffs charged racial discrimination by the Chicago Housing Authority (CHA) and the U.S. Department of Housing and Urban Development (HUD) based on the concentration of public housing projects in primarily African-American neighborhoods and the segregation of public housing tenants by race into neighborhoods of the same race. As one of the attorneys in the case wrote about this period, "The CHA is now a black system. Its tenants and applicants were mostly black, and its developments were practically all in black neighborhoods" (Polikoff, 2006: 48). Race was clearly the central issue in the Gautreaux case, but it was inseparable from poverty in this instance given the population of public housing residents. The Gautreaux case faced many legal challenges and was not resolved quickly, but ultimately the plaintiffs prevailed and the U.S. Supreme Court instructed the CHA to deconcentrate the African Americans served by its public housing. To accomplish this charge, the CHA was to build scattered-site public housing that would not concentrate these developments in African-American neighborhoods and would provide opportunities for African Americans in scattered-site public housing to live in majority-White neighborhoods. Ultimately, slow implementation by the CHA and the Court's ruling concerning HUD's responsibilities in the case resulted in an approach that used rental certificates and relocation counseling to move low-income, central-city, African-American households to predominantly White Chicago suburbs (Gill, 2012; Polikoff, 2006).

The Gautreaux program[1] has been studied intensely by researchers. Findings from this research show that moves, on average, resulted in lower neighborhood poverty rates and that movers reported better residential conditions after moving (DeLuca et al., 2010; Popkin and Cunningham, 2002). Rosenbaum (1995) found that movers to more affluent, majority-White neighborhoods were more likely to have jobs than the comparison group who moved to low-income, majority-African-American neighborhoods within Chicago. In a more recent analysis of employment outcomes using supplementary data from official sources, however, Mendenhall, DeLuca, and Duncan (2006) found that certain characteristics of the neighborhood, not their urban or suburban location, affected these outcomes. Of particular interest to researchers were outcomes for children. Based on her qualitative study, Keels (2008: 242) wrote that Gautreaux participants "... spoke of the desire to improve all aspects of their children's developing environments (neighborhood, housing, school, and peers)." Improved school quality was expected to be an institutional change that would produce better educational outcomes for Gautreaux children. Research reveals that Gautreaux parents noted the high standards of their children's suburban schools and had a positive view of these

[1] The discussion in this article focuses on the original Gautreaux program, referred to as "Gautreaux One," which was active into the late 1990s. "Gautreaux Two" was initiated in 2002, with race and income as explicit considerations for neighborhoods receiving participants (see Duncan and Zuberi, 2006).

schools' academic quality (Keels, 2008; Rosenbaum, 1995). Initially, Gautreaux children had some adjustment issues at suburban schools, but over time, research shows that children of suburban movers had a lower high school dropout rate and a higher college-attendance rate than children of city movers (Rosenbaum, 1995).

The Gautreaux program and related research continued, as social observers resurrected the culture-of-poverty thesis in the 1980s. Arguments elucidating the structural barriers that low-income people faced countered aggressive arguments touting a middle-class model and calling for an end to social programs, including housing subsidies (O'Connor, 2001). William Julius Wilson, a distinguished sociologist, did not dismiss individual or structural arguments. In his book, *The Truly Disadvantaged*, Wilson (1987) argued that poverty, especially in the African-American ghettos in the United States, is the result of a complex set of historical, structural, economic, and situational factors. A few years later, he wrote that these factors "... cannot be reduced to the easy explanations of a 'culture of poverty' that have been advanced by those on the right, or of racism, posited by those on the left" (Wilson, 1992: 641).

These arguments concerning the causes of poverty were not merely academic, because the persistence of poverty was a social problem without an effective policy. This argument, however, seemed to get quieter as positive results emerged from the Gautreaux program. These results gave policy observers and policymakers a reason to be optimistic that poverty deconcentration could provide real opportunities to low-income people and break the cycle of poverty. Concerns persisted, however, that the Gautreaux program was not designed to make strong causal statements and, thus, results should be interpreted cautiously.[2] In this context, MTO was conceived and began implementation in 1994.

MTO aimed to evaluate the effects of mobility from high- to low-poverty neighborhoods for low-income households with housing assistance. Designed as an experiment, MTO consisted of three groups: an experimental treatment group, (high- to low-poverty neighborhood movers), a Section 8 (HCVP) treatment group, and a control group. Implemented in five cities around the country, it was designed as a long-term experiment with the goal of making causal claims. Although researchers have discussed MTO's research limitations—including the varying contexts across sites, number of subjects, and proximate-neighborhoods issue—the experiment and its results remain some of the most valuable research contributions to low-income housing policy (Briggs, Popkin, and Goering, 2010; Sanbonmatsu et al., 2011).

Analyses of the MTO program produced a range of results about physical and mental health, social interaction, employment, wages, housing quality, neighborhood conditions, feelings of safety, school quality, and educational and other outcomes for children. The following is a select set of results from the final evaluation.[3] First, the final results show that residential quality, as measured by the poverty rate, improved for the treatment groups as compared with the control group, but the magnitude of this effect lessened over time (Ludwig, 2012). Second, in the long term, MTO

[2] See DeLuca et al. (2010) for a discussion of the shortcomings of the research design used to assess the Gautreaux program.

[3] A more detailed discussion of the MTO program and its results appears in a recent issue of *Cityscape* (volume 14, number 2) and in the HUD final report (Sanbonmatsu et al., 2011).

had no effect on employment. During the course of the program, employment rates varied for the groups and slightly over time. In fact, the experimental group had lower employment rates initially, possibly because the move caused an employment disruption, but other explanations are also likely. By the end of the experiment, however, no real differences in employment rates emerged among the groups (Sanbonmatsu et al., 2012). Third, analyses found that MTO resulted in minimal and mixed effects on school quality (Sanbonmatsu et al., 2011).

The Gautreaux and MTO programs focused on deconcentration, or neighborhood racial and income *mixing*. Federal policy also promotes mixed-income communities through the HOPE VI program, an initiative aimed at the redevelopment of public housing sites.[4] HOPE VI is different than the neighborhood mobility programs in scale, intervention, and other characteristics. For this reason, HOPE VI research results are not directly comparable with results from the other programs. The HCVP operates at the neighborhood scale, similar in this respect to the Gautreaux and MTO programs, but it is different in that it relies on voucher holders to deconcentrate poverty through their choices without strong support from the program.[5] Therefore, although results from other mobility programs inform HCVP research and practice, it is important to study the HCVP as implemented routinely by LHAs to gain an understanding of voucher holders' decisions and outcomes concerning residential location.

Research on the HCVP is relatively limited given the size and importance of the program.[6] Nonetheless, existing studies have provided some important results.[7] For example, immigrants and minorities in the voucher program tend to live in more distressed neighborhoods than do nonimmigrants and nonminorities (Basolo and Nguyen, 2009; Pendall, 2000), but HCVP movers experience better neighborhood conditions, less minority-concentrated neighborhoods, and neighborhoods with lower poverty rates (Basolo and Nguyen, 2005; Climaco et al., 2008). Although these results are valuable, researchers have not examined the range of outcomes considered in the Gautreaux and MTO programs for voucher holders in the regular HCVP.

Methods and Data

This research was designed to answer questions about housing voucher households and their decisions concerning residential choice. The study, therefore, required household- or individual-level data that included voucher holders' addresses, residential preferences, socioeconomic characteristics, and other microlevel data. Whereas researchers can access summary LHA administrative data on voucher holders via the HUD website, microlevel address data are not publicly available on this

[4] See Kleit (2005) and Kleit and Manzo (2006) for research on public housing households' decisions and outcomes related to HOPE VI.

[5] Researchers have written about the HCVP's and other mobility programs' limitations to achieve policy goals, with suggestions for improving opportunities for the recipients of housing assistance (see Briggs and Turner, 2006; McClure, 2010).

[6] HUD's 2009 "A Picture of Subsidized Households" reported 2,233,628 units in the program nationwide. See http://www.huduser.org/portal/datasets/assthsg.html.

[7] See Varady (2010) for a review of the recent literature on mobility programs, including research on the HCVP.

site.[8] Schultheis, Russ, and Lucey (2012) observed that the lack of easily accessible location data for voucher households has been problematic for researchers concerned with voucher holders' spatial outcomes. These researchers noted that LHA's administrative data include location information that may be available to researchers who partner with an LHA and provide certain assurances concerning confidentiality. For this study, I took a collaborative approach, partnering with two LHAs in Orange County, California, to select a representative sample of voucher holders from each LHA's population and to acquire specific administrative data, including addresses of the voucher holders in the samples.

These administrative data were necessary for the research, but they were inadequate to analyze the full range of questions associated with the study. For this reason, the research was designed to collect additional, detailed microlevel data via a mail sample survey of voucher holders. The two LHA partners were the Santa Ana Housing Authority (SAHA) and the Orange County Housing Authority (OCHA). For the SAHA, the survey sample (n = 830) consisted of approximately 32 percent of the population (with oversampling for movers) and, for the OCHA, the survey sample (n = 2,010) was about 25 percent of the population of voucher holders (with oversampling for families).

The initial draft of the survey questionnaire was based on the study's goals and informed by previous studies in the literature. LHA staff reviewed the questionnaire and provided suggestions to improve its clarity and content; a revised draft questionnaire was prepared for the formal pretest. The LHAs assisted in recruiting current voucher holders to participate in focus groups and to pretest the questionnaire. After the focus groups, slight revisions were made to the questionnaire, which was then finalized for implementation in the field. At this point, guided by the available demographic information for the voucher-holder population in Orange County, survey materials were translated into Spanish and Vietnamese and, to ensure accuracy, bilingual LHA staff reviewed the translations.

The survey design followed methods recommended by Dillman (2000) to optimize the response rate. For example, an introduction letter, describing the study and signed by the researcher and an LHA representative, was mailed to the respondents with the survey. The letter provided the same information in three languages—English, Spanish, and Vietnamese—and offered to provide the questionnaire in the voucher holder's preferred language.[9] The initial mailing was followed by a reminder postcard and, for nonrespondents, letters with a copy of the survey were mailed again, twice if necessary, at 2- to 3-week intervals.

The survey field period lasted for 5 months and concluded in August 2002. Response rates for the two areas were a concern from the planning stage of the project, because the literature suggests that certain characteristics associated with the voucher population, such as race, low incomes, and lower educational achievement, may affect survey response rates, although these results have varied across studies (DeMaio, 1980; Hennigan et al., 2002; Krysan et al., 1994). The response rates, however, were good for both LHAs, with 63 percent (n = 1,268) from the OCHA group and 56.3 percent (n = 467) in the SAHA sample.

[8] These data are contained in the "Resident Characteristics Report," which can be viewed and downloaded at http://portal.hud.gov/hudportal/HUD?src=/program_offices/public_indian_housing/systems/pic/50058/rcr.

[9] Survey questionnaires were completed in Spanish, Vietnamese, and, in one instance, Farsi (special request by a respondent). Across the two LHAs, however, less than 2 percent of the questionnaires were completed in a language other than English.

The current addresses of all voucher holders and the previous addresses for voucher holders who moved in the past 3 years were geocoded using Geographic Information Systems. Census-tract information from the 2000 census, summary files 1 and 3, was attached for all current and previous addresses to capture neighborhood characteristics, such as the poverty rate. School quality was measured by the Academic Performance Index (API), which is produced by the California Department of Education.[10] The public schools were linked to each address using district boundary maps and school-locator search engines available through individual school districts; the schools and their API scores were then added for every address in the database. Finally, select LHA administrative data (for example, contact rent) were merged with the final dataset.

The full dataset contains 1,706 cases and is used when comparing movers with nonmovers. An exception is the analysis of public school quality, which has 1,522 cases for analysis. The sample contains 570 movers, but the lack of reliable previous address and school information resulted in fewer cases for analysis, and the number varies by the focus of the analysis. In these instances, the number of cases in an analysis is shown in the corresponding exhibit.

A caveat concerning the generalization of the results from these data is necessary for several reasons. First, the analyses use unweighted data.[11] Second, some cases could not be confidently geocoded because of incomplete address information and had to be dropped from the analyses.[12] Third, school-quality data used in several of the analyses were unavailable for approximately 12 percent of the addresses in the sample.

Analysis

Background on LHAs

The LHAs are in Orange County, in Southern California. Orange County was historically a suburban county, with residents often referring to the *Orange Curtain*, a sociodemographic line separating Orange County from the urban conditions of Los Angeles County, its neighbor to the north. Moreover, Orange County has and had a majority White population, with a higher median income and lower poverty rate than the state of California as a whole.[13] Orange County has been changing, however, as its communities age and is experiencing increasing racial, ethnic, and economic diversity.

[10] The California Public Schools Accountability Act of 1999 created the API score, a measure used to assess and track school performance over time. The score, which ranges from 200 to 1,000, is based on student performance on statewide testing. The California Department of Education publishes these scores annually for public elementary, middle, and high schools throughout the state. For this research, I calculated the average API for the schools serving each address; however, in some cases, it was not clear whether a school served a specific address, so that school was not included in the calculation. For most cases, I had API scores for all three schools (elementary, middle, and high), but in some cases I had to average scores for only two schools, and in even fewer cases (less than 1 percent), I had only one school's API score.

[11] Weighting to address oversampling in each area was not done, because the samples were combined and response analyses showed some sociodemographic differences for responders in both samples (see Basolo and Nguyen, 2009, for a more detailed discussion of the response bias analyses for these data).

[12] For these analyses, I filled missing values with the mean or mode of the variable, including missing values for the neighborhood poverty rate, which were a result of incomplete address information (1.2 percent of the cases).

[13] See Basolo and Nguyen (2009) for Orange County demographic information in 2000.

The LHAs are also operating in one of the most expensive housing markets in the state and in the country. Despite the significant price downturn in housing markets throughout Southern California, Orange County has remained a relatively high-cost housing market and now appears to be rebounding in sales volume and median price for single-family homes (Lazo, 2012). The median contract rent in Orange County consistently exceeds the state and national figures.

Orange County has four LHAs that administer the HCVP. In general, the OCHA administers approximately 50 percent more vouchers than the next largest LHA (in Anaheim) and more than four times as many vouchers as the smallest LHA in the county (in Garden Grove). Its relative size among the LHAs in the county was the reason it was selected for the study. The SAHA has the third largest voucher program in the county, but was chosen for its location in the central city of Orange County, based on size, age, demographics, and, to a lesser extent, its role as the government center for the county.

Exhibit 1 shows voucher program characteristics for the OCHA and SAHA. The characteristics for 2000 and 2004 are presented primarily because the 2002 data (the year of the survey) were unavailable from the "A Picture of Subsidized Households" dataset on the HUD website. Also, however, these data allow for temporal comparisons for each LHA and comparisons between LHAs. In doing so, I recognize that the occupancy and reporting rates vary across the years and for the LHAs.[14]

The indicators provide a snapshot of the occupants using voucher assistance in 2000 and how voucher holders changed during the 4-year period. Both LHAs show an increase over time in seniors (defined as residents age 62 or older) with vouchers, although the OCHA provides about 5 percent more of its vouchers to seniors than does the SAHA. In 2000, SAHA vouchers served significantly more minorities proportionately (88 percent) than did OCHA vouchers (56 percent), with only a 1-percent decrease in minority voucher holders for the SAHA and a 1-percent increase for the OCHA from 2000 to 2004. Both LHAs showed a reduction in the average number of people

Exhibit 1

Voucher Program Characteristics by LHA, 2000 and 2004

Voucher Program Characteristics	Orange County			Santa Ana		
	2000	2004	Change 2000–04	2000	2004	Change 2000–04
Age 62 or older (%)	30.0	39.0	9.0	27.0	34.0	7.0
Minority (%)	56.0	57.0	1.0	88.0	87.0	– 1.0
Average number of people in unit	2.8	2.4	– 0.4	3.4	2.9	– 0.5
Average annual household income ($)	14,800	15,700	900	15,600	17,200	1,600
Average tenant portion of monthly rent ($)	382	383	1	370	423	53
Total units	8,169	9,619	1,450	2,033	2,558	525
Occupied units (%)	79.0	98.0	19.0	93.0	99.0	6.0
Reporting (%)	100.0	91.0	– 9.0	97.0	86.0	– 11.0

LHA = local housing authority.

Source: U.S. Department of Housing and Urban Development, "A Picture of Subsidized Households." Available at http://www.huduser.org/portal/datasets/assthsg.html.

[14] The variation in reporting rates is one criticism of using the administrative data from this source, because incomplete reporting can introduce bias into analytic results.

in the units subsidized by vouchers during the 4-year period, with the SAHA exhibiting a slightly greater decrease. Interestingly, although voucher holders' average annual household income increased for both LHAs during the period, the SAHA showed a much greater increase than the OCHA ($900 versus $1,600).[15] Given the average income data, it is not surprising that the tenant portion of the rent, on average, increased more for the SAHA ($53) than for the OCHA ($1) over time.

Descriptive Statistics and Analyses

The variables used in the analyses and their measurement are presented in exhibit 2. Most of the variables come from the household survey. The exceptions are the neighborhood poverty rate, which was downloaded from the U.S. Census Bureau website; the annual household income and monthly rent, which came from the LHA's client file database; and the public school quality measure (average API score). Note that the average neighborhood poverty rate for the sample is 14.8 percent, which is relatively low compared with the conventional rate of 40 percent used to identify concentrated poverty. The average API score for the sample is 665, however, much less than the California Department of Education goal of 800 for all schools.

Moves in the HCVP, in nearly every case, are the choices of voucher holders.[16] Although this research is primarily interested in the outcomes associated with those moves, it is helpful to briefly consider whether moving choices are associated with any basic voucher-holder characteristics.

Exhibit 2

Descriptive Statistics for Variables Used in Analyses

Variables	Measurement	Mean	Std. Dev.
Dependent variables			
Neighborhood poverty rate	Percentage of people in poverty	0.148	0.073
Employment status	1 = employed; 0 = not	0.489	0.500
Public school quality	Average of school API scores	665.909	71.258
Independent variables			
Mover	1 = moved in last 3 years; 0 = did not	0.334	0.472
Age	In years	52.590	14.482
Gender	1 = male; 0 = female	0.458	0.498
Minority	1 = minority; 0 = White, not Hispanic	0.753	0.432
Foreign born	1 = foreign born; 0 = not	0.685	0.465
Marital status	1 = married; 0 = not	0.532	0.499
Child present	1 = child in household; 0 = none	0.650	0.477
Education	1 = high school gradute; 0 = not	0.667	0.472
Annual household income	In dollars	16,184.740	8,208.897
Monthly rent	In dollars	988.928	244.979
Lives in central city	1 = lives in Santa Ana; 0 = does not	0.178	0.383

API = Academic Performance Index. Std. Dev. = standard deviation.

N = 1,706.

[15] This difference may be attributable to the larger population of seniors in the OCHA, because they are less likely to be working and more likely to be on a fixed income.

[16] An involuntary move can occur through eviction or if the housing unit falls below the quality or affordability standards of the LHA.

Exhibit 3 presents a range of sociodemographic characteristics and one locational item (lives in central city) for movers and nonmovers in the sample. For the most part, movers and nonmovers appear to be very similar sociodemographically and in relation to location within the central city. They differ on only age and rent. On average, movers tended to be younger and to pay more in monthly rent.

The main analyses focus on a move within the past 3 years. Voucher holders may have moved multiple times during this period, however, or they could have been anticipating a move in the coming year. Because intentions to move and the frequency of moving are relevant to understanding mobility and also because these characteristics are rarely discussed in studies of the HCVP, in exhibit 4, I present this information for the voucher holders in the study. Voucher holders who had not moved and voucher households that had moved three or more times in the past 3 years were less likely to be planning a move in the upcoming year; however, a chi-square analysis found no statistically significant association between frequency of moves and intention to move among these voucher holders.

Exhibit 3

Voucher Characteristics, by Mover Status

(a) Chi-Square (X^2) Analysis

Voucher-Holder Characteristics	Mover		Nonmover		Total	
	N	%	N	%	N	%
Male	261	33.4	521	65.5	782	45.8
Female	309	33.4	615	66.6	924	54.2
Minority	438	34.1	846	65.9	1284	75.3
Nonminority	132	31.3	290	68.7	422	24.7
Foreign born	375	32.1	794	67.9	1169	68.5
Not foreign born	195	36.3	342	63.7	537	31.5
Married	289	31.9	618	68.1	907	53.2
Not married	281	35.2	518	64.8	799	46.8
Child present	363	63.7	207	36.3	570	33.4
No child present	745	65.6	391	34.4	1136	66.6
High school graduate	375	33.0	762	67.0	1137	66.6
Not a high school graduate	195	34.3	374	65.7	569	33.4
Lives in central city	99	32.6	205	67.4	304	17.8
Does not live in central city	471	33.6	931	66.4	1402	82.2

(b) Difference of Means (t-test)

Voucher-Holder Charactistics	Mover Mean	Nonmover Mean	Mean Difference	t
Age	51.185	53.295	– 2.100	– 2.845**
Annual household income	16005.003	16274.925	– 269.922	– 0.640
Rent	1036.144	965.237	70.970	5.691***

***p ≤ .01. ***p ≤ .001.*

Notes: Based on Chi-square analyses (p = .05). No statistically significant associations exist between moving and these voucher-holder characteristics.

The next set of analyses explores the factors associated with neighborhood poverty levels, employment status, and school quality, with a particular interest in the effect of moving on these outcomes. The degree of poverty in a neighborhood is thought to affect individual outcomes in numerous ways. Mobility out of poverty is one approach to addressing negative outcomes, but although the HCVP is designed to enable mobility, it does not require voucher holders to move in general or to move to lower poverty neighborhoods. Thus, it is unclear whether a policy of residential choice can achieve lower neighborhood poverty rates for voucher holders. To investigate this question, a linear regression model was specified with neighborhood poverty level[17] as the dependent variable and a set of voucher-holder sociodemographics—rent, central city location, and, the primary variable of interest, whether the voucher holder had moved in the past 3 years—as the independent variables. The results of the analysis are shown in exhibit 5.

The coefficient for "mover" has a negative sign but is not statistically significant. Thus, the analysis indicates that movers, as compared with nonmovers, did not live in neighborhoods with lower poverty levels. Six variables in the analysis are associated with the neighborhood poverty rate, however. As the age of voucher holders increases, neighborhood poverty levels tend to decrease on

Exhibit 4

Moving Intentions and Frequency of Moves

Moving Behavior	Plan To Move		No Plan To Move		Total	
	N	%	N	%	N	%
No moves	219	19.3	917	80.7	1,136	66.6
One move	105	24.0	333	76.0	438	25.7
Two moves	24	24.5	74	75.5	98	5.7
Three or more moves	7	20.6	27	79.4	34	2.0

Chi-square = 5.082, with 3 degrees of freedom (not statistically significant).

Exhibit 5

Linear Regression: Neighborhood Poverty Rate

Variable	Estimate	Standard Error
Mover	– 0.006	0.028
Age	– 0.003*	0.001
Gender	0.101***	0.029
Minority	0.236***	0.035
Foreign born	0.033	0.035
Marital status	0.044	0.031
Child present	0.177***	0.039
High school graduate	– 0.054	0.028
Annual household income (ln)	– 0.023	0.024
Rent	– 0.001***	0.000
Lives in central city	0.330***	0.035

ln = natural log.

R^2 = 0.151.

** p ≤ .05. *** p ≤ .001.*

[17] To address a skewed distribution, the original neighborhood poverty rate data were transformed using the natural log function.

average. This result may be because of more knowledge, based on additional years of life experience, or it may be that older people experience a greater degree of landlord acceptance in more affluent neighborhoods. Males tended to locate in neighborhoods with higher poverty rates, which may reflect a tendency to conflate poverty with personal safety and the different perceptions of safety by men and women. Minorities generally lived in neighborhoods with higher poverty rates. This finding is consistent with the existing literature and may be because of several factors, including discrimination, lack of information, or availability and location of support networks. Voucher households with children also lived in neighborhoods with higher poverty rates. Again, discrimination and the availability and location of support networks might help explain this result. Not surprisingly, as voucher holders' rents increase, on average, neighborhood poverty levels decrease. We would expect rent to reflect not only housing unit attributes, but also neighborhood characteristics. Finally, as found in previous analyses and generally accepted in the literature, living in a (low-income) central city is associated with higher neighborhood poverty rates.

Reducing barriers to employment is one reason the HCVP policies shifted to enable easier mobility for voucher holders. In other words, higher employment levels are more likely if the voucher holder can move closer to job opportunities without losing housing assistance. Given this reasoning, it is possible that movers would be employed more often than nonmovers. To investigate this possibility, a logistic regression model was specified with employed or not as the dependent variable and the same set of independent variables used in the previous analysis. The results from this regression are shown in exhibit 6.

The analysis indicates that movers are no more likely to be employed than nonmovers. As suggested in the MTO analysis, it may be that movers are relatively recently moved and experiencing an adjustment period before finding employment. It may also be that the move was related to considerations other than employment. Six variables in the model have statistically significant coefficients. As a voucher holder's age increases, he or she is less likely to be employed. Being foreign born, being married, having a child present, and graduating from high school are all positively associated with being employed. As expected, having a higher income is associated with having a job. Living in the

Exhibit 6

Logistic Regression: Employment Status

Variable	Estimate	Standard Error
Mover	0.077	0.113
Age	– 0.024***	0.005
Gender	– 0.028	0.121
Minority	0.023	0.144
Foreign born	0.305*	0.146
Marital status	0.413***	0.128
Child present	0.665***	0.155
High school graduate	0.356**	0.155
Annual household income (ln)	0.438***	0.109
Rent	0.000	0.000
Lives in central city	– 0.300*	0.145

ln = natural log.

R^2 = 0.175.

** p ≤ .05. ** p ≤ .01. *** p ≤ .001.*

central city again is associated with a negative outcome. Voucher holders living in Santa Ana are about 26 percent less likely to be employed than voucher holders living outside this central city.[18]

The outcomes for children of voucher holders have been a central concern of policymakers. The assumption is that children will receive a better education by moving to neighborhoods with higher quality schools. To assess if voucher holders' moves in this study's sample are associated with higher school quality, I conducted a linear regression analysis with public school quality as the dependent variable and with the same set of independent variables used in the two previous models. Exhibit 7 displays the results from the regression analysis.

The model shows that moving is not associated with school quality. Again, it may be that movers relocated for reasons other than to gain access to better schools. Age, having a high school education, and paying more in rent are positively associated with better school quality. The models reveal that minorities are served by lower performing schools; specifically, being a minority is associated with a 16-point lower average API score compared with the nonminority average API score. The greatest decrease in school quality, however, is associated with living in the central city; these voucher holders, on average, experience an API score of 17 points less than voucher households living outside the central city. Lastly, the presence of a child in the household is not related to higher school quality.[19] This result is somewhat perplexing but could be related to a lack of knowledge about school quality, or it may be that parents have other equally pressing considerations when making a relocation decision.

The results of the preceding analyses show no differences between movers and nonmovers for the three outcomes under study. Nonetheless, movers may have improved their circumstances from before to after a move. To explore this possibility, paired sample t-tests were conducted to

Exhibit 7

Linear Regression: Public School Quality

Variable	Estimate	Standard Error
Mover	– 0.540	3.470
Age	0.331*	0.147
Gender	– 8.721*	3.699
Minority	– 15.853***	4.525
Foreign born	2.736	4.559
Marital status	– 5.520	3.932
Child present	– 0.048	4.837
High school graduate	7.510*	3.529
Annual household income (ln)	2.137	3.409
Rent	0.034***	0.008
Lives in central city	– 78.369***	4.248

ln = natural log.

N = 1,552.

$R^2 = 0.223$.

** $p \leq .05$. *** $p \leq .001$.*

[18] The value is 1 minus the exponentiation of the coefficient for "lives in central city" [1 - exp (- 0.300)].

[19] I conducted an alternative regression to assess if movers with children experienced better school quality than nonmovers with and without children. The results were not statistically significant.

compare the poverty rate and school quality before and after moves. Also, to determine if employment status before and after a move were associated, I conducted a chi-square analysis. Exhibit 8 contains the results of these analyses.

Movers did experience improvements in their neighborhood poverty rate and in school quality. Although the t-statistic is significant, however, the magnitude of the improvement is rather small (a less than 1-percent reduction in the neighborhood poverty rate and about a 7-point increase on the API index). The results for employment before and after moves are very discouraging. Before moving, 73.0 percent of the voucher holders worked; after moving, that number dropped to 52.2 percent. Also, only 15 voucher holders who moved went from unemployed before moving to employed after moving. The results from this sample clearly provide no evidence that voucher holders move for employment opportunities.

Exhibit 8

Differences Before and After Moving

(a) Paired Sample t-test

Outcomes	Before Move	After Move	Mean Difference	t
Neighborhood poverty rate (N = 525)	0.155	0.146	– 0.009	– 2.330*
Public school quality (N = 480)	658.042	665.004	6.961	2.164*

(b) Chi-Square Analysis

Before Move	After Move		Total
	Employed	Unemployed	
Employed	263	126	389 (73.0%)
Unemployed	15	129	144 (27.0%)
Total	278 (52.2%)	255 (47.8%)	533 (100.0%)

** $p \leq .05$.*

Chi-square = 137.763, with 1 degree of freedom (p = .000).

Research and Policy Implications

Taken as a whole, the literature provides a mixed narrative on mobility, and the results from this study do not change the story. The lack of differences for neighborhood poverty level, employment, and school quality outcomes between HCVP movers and nonmovers may mean that mobility is not based on these outcomes and that our assumptions about the reasons for mobility are inaccurate or incomplete. Understanding the reasons for voucher holders' moves in the regular HCVP is an important step in assessing voucher holders' needs and improving program goals. Researchers need to better understand voucher holders' decisions about residential location and the tradeoffs they make during their housing search. With this knowledge, researchers can better design studies, not only to evaluate a range of standard outcomes, as done for MTO, but also to assess the degree to which voucher holders achieve *their* desired outcomes in the HCVP.

One result from the multivariate models that is consistent across outcomes was location in the central city. It is clear that voucher holders living in the central city, at least in Orange County, experienced a cluster of negative outcomes compared with the outcomes of voucher holders living outside the central city. This result suggests that future research on the HCVP should include analyses of the effect of moving within and out of central cities, including relatively smaller central cities and central cities in suburban environments such as Orange County.

Voucher holders' locational choices in Orange County and elsewhere may be constrained to a few relatively similar neighborhoods. In other words, moving would not change outcomes dramatically. Such an interpretation about the lack of differences between HCVP movers and nonmovers is consistent with the results comparing mover-only outcomes before and after their residential relocation. Although neighborhood poverty rate and school quality improved, the improvements were quite minimal. As such, it is reasonable to suggest that these marginal changes likely have no discernible positive effects on the lives of voucher holders or their children. The burden for HCVP administrators is to work on opening up new neighborhoods that offer more opportunities to voucher holders, although doing so is a tall order for LHAs that have struggled in the past convincing landlords to accept voucher recipients.

Mobility may be a mechanism for low-income people to achieve better neighborhoods and access new opportunities. Programmatic and structural changes are necessary, however, for mobility to have a good chance at achieving certain outcomes in the HCVP. Moreover, we cannot expect rapid change from mobility out of low-income neighborhoods. Generations of disadvantage created intergenerational poverty, and it will take generations of advantage to change the status quo.

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