

Changing Occupant Characteristics in Rural Public Housing in the Great Plains: 1977 to 1996

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Abstract

Housing quality and affordability are growing concerns in rural areas, particularly in regions affected by economic restructuring and population decline. This article uses data from the U.S. Department of Housing and Urban Development to assess changes in the characteristics of nonmetropolitan public housing residents in the Great Plains between 1977 and 1996.

Results indicate that public housing occupants were younger and more racially diverse in 1996 than in 1977. Also, a larger proportion received welfare benefits in addition to housing supplements. (In 1977, few households received both types of assistance.) Regression models reveal a significant positive relationship between changes in county population, unemployment rates, and economic designation and minority representation in public housing. Implications include the need for flexible measures that meet the changing needs of subsidized households. The characteristics of these households in the Great Plains region indicate the need for both region-specific and coordinated housing and welfare policies.

Keywords: Low-income housing; Rural housing

Introduction

The changing nature of rural communities over the past 30 years has received significant attention from researchers. Studies have documented both social and economic changes in many regions of the United States, including the Great Plains (Adamchak et al. 1999; Albrecht 1993; Kromm and White 1992; White 1998). These changes have a variety of impacts on local populations, among them a change in the quality, availability, and affordability of housing. Low-income residents are particularly vulnerable to housing displacement and may change residence often to maximize limited resources (Fitchen 1994). To combat this problem, federal and state agencies have developed various programs aimed at addressing the housing problems of the poor. Public housing is an example of such a program.

This study investigates changes in the residential profile of public housing residents between 1977 and 1996 in nonmetropolitan Great Plains counties. With the exception of a brief period of growth in the 1970s, many rural Great Plains counties have experienced economic decline and population loss since the 1950s (Adamchak et al. 1999). Evaluating

changes in the profile of public housing residents provides a snapshot of the most vulnerable segment of a rural population.

The Great Plains represents one of several rural U.S. regions experiencing the long-term negative effects of changes in the economy. Further, the Great Plains provides a good study area for assessing housing issues in rural areas not experiencing significant growth. Also, there is little awareness of rural public housing issues in the Great Plains.

Compared with public housing residents in urban areas, those in rural areas may face additional obstacles to obtaining employment and, therefore, better housing. For example, rural areas rarely have adequate public transportation systems, and the dispersed nature of settlement and the long distances between mid-sized towns means that residents need access to automobiles. Employment opportunities may be further limited by small population centers. Policies requiring greater work force participation in exchange for public benefits may have little success in rural areas with declining populations and economies.

Access to quality, affordable housing may be limited in either growing or declining communities. Significant in-migration may force lower-income households to find housing in more peripheral areas, thereby increasing commuting time while also decreasing housing costs (Gober, McHugh, and Leclerc 1993). In communities experiencing decline, out-migration may create an oversupply of housing, driving housing costs down for the remaining residents. Lack of investment, however, likely leads to deterioration of the existing housing stock. In either scenario, the task of providing safe, affordable housing for low-income residents strains the resources of rural communities. Federally funded public housing programs offer housing opportunities to low-income families. Since the 1960s, public housing, although not the only housing subsidy available, has acted as a safety net for the most dependent populations, those least able to secure other forms of housing (Mitchell 1985). While definitive conclusions about changes in public housing households must be carefully considered, this analysis provides a starting point for understanding the local and regional impacts of macroeconomic and population restructuring in the United States.

Subnational trends in the characteristics of public housing occupants in rural areas need to be better understood, since policies aimed at reducing deprivation must consider the economic, social, and housing conditions of the poorest populations. Further, it is important to understand the nature of change in these households as changes in public policy, in particular the Personal Responsibility and Work Opportunity Reconciliation Act of 1996, begin to affect these populations (Dolbeare and

Strauss 1997). This policy will directly alter the income of welfare recipients and indirectly affect their ability to pay for housing (Dolbeare and Strauss 1997).

This study is divided into four parts. The first section summarizes the literature documenting changes in rural housing programs over the past 30 years. The second describes the data and methods used to assess changes in public housing occupants. The third examines the aggregate changes in public housing participant characteristics for all programs in nonmetropolitan Great Plains counties. It also uses multiple regression analysis to assess the relationship between changes in county-level population and economic characteristics and changes in minority representation and occupancy rates in public housing. The fourth and final section discusses the findings and issues for further research.

Background and literature review

Housing plays an important role in the well-being of residents of a community. The purpose of public housing is to provide shelter for the poor. Government programs aimed at improving the quality and availability of safe, affordable housing are critical to meeting basic needs. Rural areas face unique housing problems due to changing economic and social conditions. These changes affect the demographic composition of communities and housing opportunities for different segments of the population. Understanding changes in the characteristics of this population is critical to minimizing the impact of changes on housing availability in rural areas.

Public housing programs: An overview

The Wagner Housing Act of 1937 formally established public housing to serve the upwardly mobile working-class poor (Mitchell 1985). Its development created temporary low-income housing for working-class families during the Great Depression. It also cleared slums and created jobs through increased construction activity (Schussheim 1998). Until World War II, subsidized housing, as intended, improved housing conditions for the working poor, but during the postwar boom, many of the formerly working poor were able to purchase single-family homes in the growing suburbs. The departure of this more affluent group from public housing left behind the most dependent, least prepared to work, hard-core poor. By the 1960s, this group had few other alternatives and was entrenched in the least desirable housing in the country (Mitchell 1985).

The 1980s saw further deterioration in the situation of poor households. Funding for rural housing programs was significantly reduced despite a deteriorating farm economy. In addition, the federal government changed the eligibility criteria for housing assistance. For those already receiving assistance, rent burdens grew from 25 percent to 30 percent of income, and only households in extreme poverty remained eligible as new recipients (Schwartz, Ferlauto, and Hoffman 1988).

Five broad housing trends surfaced during this period: declining rates of homeownership; increasing homelessness; decreasing affordability, availability, and quality of rental housing; a critical shortage of housing affordable and available to the poor; and an emerging pattern of decline in the quality of existing housing stock. Paralleling these trends, federal housing aid for a number of programs was cut, including assistance to low- and moderate-income tenants, elderly and disabled persons, American Indians, and farmers. The total number of households eligible for housing assistance also was reduced (Schwartz, Ferlauto, and Hoffman 1988).

Although the national economy saw significant expansion during the 1990s, the availability of housing affordable to low-income families decreased. Cost-burdened households are defined as those whose monthly net rent or mortgage costs exceed 30 percent of gross income.¹ Further, according to a report by the U.S. Department of Housing and Urban Development (HUD), between 1991 and 1997, there was a 5 percent drop in housing affordable to families with incomes at or below 30 percent of the area median (1999).

By 1996, there were 1,326,224 units available in public housing programs in the United States (Burke 1996a, 1996b, 1996c). About 69 percent of these units were occupied by minorities; 33 percent had household heads over the age of 62; and 39 percent consisted of families with one or more children and only one spouse present.

Rural housing

Since the development of public housing in the 1930s, the composition of its occupants has changed significantly. These changes have not been uniformly distributed across geographic areas. Rural and inner-city households have had different experiences, as have households in different regions of the country.

¹ Basic Laws on Housing and Community Development. 1991. H.R.CP No. 102-20, 102nd Congress, 1st Session.

The combination of increasingly poor and welfare-dependent households and the questionable housing quality in rural areas suggests a pressing need for analyzing the characteristics of rural poor households. Approximately 38 percent of the 97.7 million occupied housing units in the United States are found in rural areas (Dolbeare 1999). The availability of affordable housing in these areas, however, has been declining (Belden and Wiener 1999), with an increasing proportion of rural households paying more than 40 percent of their income for housing (Schussheim 1998). Rural households are more likely than their urban counterparts to be near poor, with income between the poverty level and 200 percent of poverty (Dolbeare and Strauss 1997). In 1995, one-third of the 5.9 million nonurban households receiving Aid to Families with Dependent Children (AFDC) or Supplemental Security Income (SSI) lived in rural areas, and the remaining two-thirds lived in non-metropolitan rural areas (Dolbeare and Strauss 1997). For more than half of the households receiving federal income assistance, poor housing quality is an issue. Approximately 40 percent of the nation's 6.4 million poor-quality housing units are located in rural areas (Dolbeare and Strauss 1997).

Poverty levels in rural and nonmetropolitan areas have also particularly concerned researchers because of their uneven distribution. Nord, Luloff, and Jenson (1995) found the high-poverty regions of the United States to include the Appalachian Highland, "Black-Belt," Mississippi Delta, Ozark/Ouachita Plateau, Rio Grande Valley, High Plains of the Central Southwest, and the Northern Great Plains. They further noted that between 1979 and 1989, nonmetropolitan poverty rates were only slightly lower than central-city poverty rates, which in turn were twice as high as suburban poverty rates.

Studies by Nord, Luloff, and Jenson (1995) and Fitchen (1995) documented patterns of spatial concentration and poverty among the mobile poor. Nord, Luloff, and Jenson (1995) quantified the extent to which migration affects poverty rates and concentrations outside urban areas. The study found that the poor moved more often than those who were not poor and that the net out-migration of the latter from high- and very high poverty counties and net in-migration to low- and very low poverty counties reinforced both the preexisting poverty concentrations and the effects of migration of the poor. Both poor and nonpoor migrants from very high poverty counties moved predominantly to other very high poverty counties (Nord, Luloff, and Jenson 1995). In a case study of a county in New York, Fitchen (1995) found that the migration of poor people from both urban and rural places to depressed rural communities redistributes poverty to rural areas and further concentrates it there.

Fitchen (1995) also found that redistribution of poverty in rural areas increases concentrations of poor people, as well as the poverty rates, welfare rolls, and service needs of these communities. In addition, selective migration of the poor tends to reinforce, as opposed to alleviate, the spatial concentration of poverty (Nord, Luloff, and Jenson 1995). Fitchen (1995) found that poor households moved to rural areas because of preexisting social ties and inexpensive housing, not for their welfare benefits.

The situation in the Great Plains

Demographic changes in an area affect the availability and quality of its housing. Aging populations and young households have different housing needs that vary depending on their particular economic circumstances. For those at or below the poverty level, the availability of housing that is both safe and affordable is a critical issue, especially if economic opportunities are limited. The factors of economic and demographic change in a region may therefore contribute to the quality and availability of housing at the local level. Much has been written about the changing nature of rural communities in the Great Plains, which has often been characterized as experiencing significant economic decline and depopulation (Daniels and Lapping 1987; Paul 1992; Popper and Popper 1987, 1993).

Several characteristics of change are commonly cited in the literature, including the impacts of age-selective out-migration and the corresponding aging of rural populations, overall population decline, and diminishing economic opportunities in the region. Age-selective out-migration has contributed to population loss and produced an uneven and older age structure in the Great Plains. Beale's work documented the heavy rural population losses characteristic of the Great Plains from Texas to Nebraska during the 1950s and 1960s (Beale 1964, 1969). The Great Plains was described as experiencing significant population stagnation relative to other subregions. Although a modest increase in population occurred between 1970 and 1980, population decline resumed in the 1990s (Adamchak et al. 1999). Selective out-migration of young adults from rural counties also left behind increasing proportions of elderly people in the Great Plains (Rathge and Highman 1998a).

Rathge (1995) found that 72.2 percent of 772 Great Plains counties peaked in population before 1950. Only 4.7 percent peaked in 1990. With increasing technological advances, he predicts that farming-dependent communities will see continued decline in the future. Albrecht (1993), in his assessment of 293 nonmetropolitan counties in the

Great Plains, concluded that the renewal of population declines in non-metropolitan counties following the 1970s rural renaissance would bring back such problems as limited service availability, loss of tax base, and high dependency ratios. Finally, White (1998) described the region as heavily subsidized and dependent on federal support for survival.

Several studies have drawn different conclusions, suggesting that a fair amount of subregional variation in social and economic circumstances exists. Kromm and White (1992) refute the idea of overall population decline in the Ogallala region (an area within the Great Plains), suggesting rather that the Ogallala region as a whole grew 4.1 percent between 1960 and 1990 and that the population in western Kansas grew by 5.7 percent. Rathge and Highman (1998b) also found that population in the Great Plains increased overall between 1950 and 1996. This growth masked significant subregional variation as population loss continued in many nonmetropolitan areas (Rathge and Highman 1998b).

In the past, public housing and other subsidy programs have been established to help alleviate housing problems. In light of recent welfare policy reforms, however, the rural poor may face a bleak set of housing options in the future. Understanding the implications of policy changes means first understanding the changes already taking place. As a starting point, this study seeks to document the changes in subsidized rural households in the southern Great Plains between 1977 and 1996. Housing quality and affordability are a growing concern in rural areas, but the situation is particularly acute for low-income people who rely on subsidized housing. Their access to government housing programs such as public housing and the Section 8 certificate and voucher program is influenced by government welfare policies. It is critical to understand the characteristics of subsidized households in anticipation of policy changes that may directly affect their access to safe and affordable housing. The findings of the study will deepen our understanding of the increasingly complex nature of housing accessibility and aid in the development of policies to alleviate the hardship that may be caused by policy changes.

Methodology

This analysis focuses on changes in the aggregate characteristics of public housing residents between 1977 and 1996. Between 1980 and 1990, rural areas in the Great Plains underwent several significant changes that included the continued mechanization of agriculture, further reducing the labor force needed and decreasing the availability of jobs in those areas. Second, rural areas in the 1980s were characterized

by increasing numbers of farm foreclosures and significant declines in oil, gas, and coal production that served to intensify already dire economic hardship (Schwartz, Ferlauto, and Hoffman 1988).

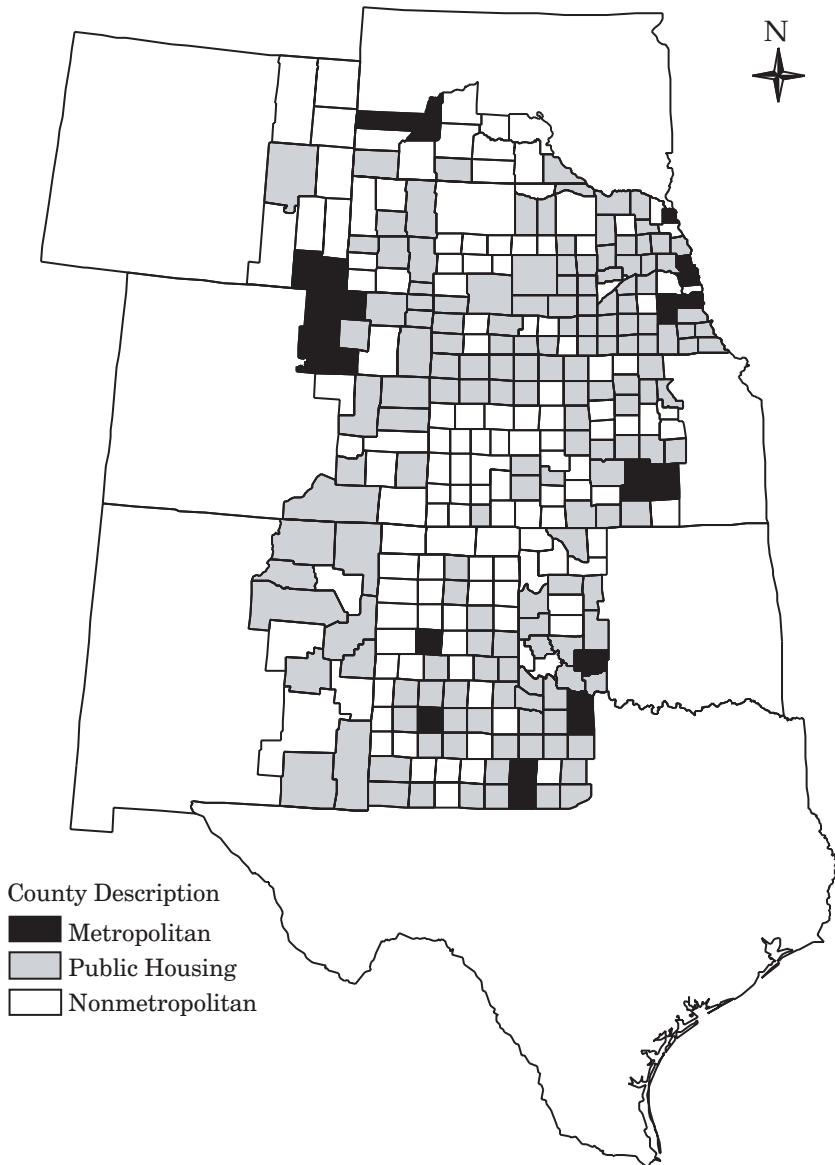
The years 1977 and 1996 were selected in order to look at public housing in the Great Plains before these changes occurred and just before the new welfare policy was implemented. The study seeks to answer the following two research questions:

1. Have the aggregate characteristics of public housing residents (race, percentage of elderly households, mean household size, and receipt of welfare support) changed between 1977 and 1996?
2. Are these changes related to population and economic changes in the county where the subsidized housing is located? Measures include change in total population, percentage of population in poverty, percent minority, and percentage of the population over age 65. Also included is the economic typology of the county as defined by the Economic Research Service (ERS) of the U.S. Department of Agriculture (USDA) (1997). This typology reflects the dominant economic activity in a county, thus allowing economic variation to be assessed. Urban-rural continuum codes (Beale codes) are used to incorporate the degree of rurality in each county. (See table A.1 for definitions.) Finally, the change in unemployment rates between 1980 and 1996 is incorporated.

While many definitions of the Great Plains region have been offered, this article adopts the definition used by Albrecht (1993), which includes 293 nonmetropolitan counties in South Dakota, Wyoming, Nebraska, Kansas, Colorado, Oklahoma, New Mexico, and Texas (figure 1). This study defines nonmetropolitan counties based on the ERS typology as revised in 1993 (USDA, ERS 1997). The analysis includes only counties that had public housing programs in both 1977 and 1996. This part of the Great Plains represents “an area that has greater dependence on agricultural employment than any other area of similar size in the U.S.” (Albrecht 1993, 235). Fully 63 percent of the counties are identified as farming dependent by the ERS. The study area also allows the assessment of counties with limited access to metropolitan areas. As illustrated in figure 1, most of the metropolitan areas are found on the periphery of the region. With little hope for increased employment in agriculture in the Great Plains (Rathge 1995), these counties are likely to continue to lose population unless other economic growth strategies are identified. The combination of low levels of growth both historically and predicted for the future, in addition to

limited access to metropolitan areas or commuting opportunities, makes this region a good place to assess the changes in rural public housing occupant characteristics and the implications of county-level changes on those characteristics.

Figure 1. Study Area: Location of Public Housing in Nonmetropolitan Counties in the Great Plains



Data and limitations

The data used in this study are drawn from *A Picture of Subsidized Households* for 1977 and 1996, a database maintained by HUD (Burke 1996a, 1996b, 1996c, 1997). Since 1996, HUD has compiled the data from several sources on an annual basis. For the household data, HUD uses the Family Report and Owner's Certification and Compliance Procedures forms, which are submitted to HUD by all local housing agencies. HUD's administrative records determine the size and location of each program. Data are summarized at the housing agency, project, census tract, state, and national levels and include summary information only if at least 40 percent of the households are reported. Households include those accepted into housing programs based on the size and income of the family. Most pay about 30 percent of their income for housing, and the federal government contributes the remainder (summarized from Burke 1996a, 1996b, 1996c).

While *A Picture of Subsidized Households* is perhaps the most comprehensive database on subsidized housing in the United States, it does have limitations. One group of researchers has noted that the aggregated data sets, in particular *A Picture of Subsidized Households, 1996*, contain some missing or inaccurate information and that local public housing authorities generally have better information (Lois Athey, personal communication, November 15, 1999). Burke (1996a, 1996b, 1996c) also documents the incompleteness of the 1996 data. Across all of the different subsidized housing programs, approximately 27 percent of occupied units were unreported at the national scale. The reporting rate for public housing programs is the highest, at 80 percent of all households (Burke 1996a, 1996b, 1996c).

Evaluation of the study-area data reveals approximately 304 public housing programs that were active in both 1977 and 1996. Of these, 283 were found in nonmetropolitan counties. The programs evaluated are further reduced in number by those programs for which no data are reported for one or both years. Also, the 1977 data set contains full counts of households, occupancy, and race. The other variables (percent elderly, percent single parent, average family size, and percent receiving welfare) are derived from weighted samples and thus cannot be disaggregated to full-count raw data. The inability to disaggregate the data significantly reduces possible statistical analysis. The 1996 data, however, can be disaggregated, making possible the direct comparison of total available and occupied households and the race of residents. The frequency distribution of the remaining variables allows for general comparison between 1977 and 1996. Finally, the definitions of variables differ slightly from the two years, which further limits analysis.

Data pertaining to changes at the county level are taken from the 1980 U.S. Census of Population and Housing (U.S. Bureau of the Census 1980), and 1996 estimates of population characteristics come from Bureau of the Census data as well (1999). The economic categorization of the counties comes from the ERS, reflecting their reclassification in 1993 (USDA, ERS 1997). The six typologies include farming dependent, mining dependent, manufacturing dependent, government dependent, services dependent, and nonspecialized (USDA, ERS).

Merging the data sets for analysis involved two steps. First, the 1996 file was matched to the 1977 file by a subsidized housing program identification number. The program identification number is assigned by HUD and is unique to a public housing project (Burke 1996a, 1996b, 1996c). Second, Great Plains counties were selected from the subsidized housing database by Federal Income Processing Standard (FIPS) code for 1996. FIPS codes were also used to link county typology and other socioeconomic data with the subsidized housing database. This two-step process was necessary because the 1977 datafile contains only program identification numbers that do not identify geographic location. The 1996 datafile contains both numbers and FIPS codes. This selection process limits analysis to those programs active in both 1977 and 1996. By definition, it excludes programs that were closed or became inactive between 1977 and 1996, as well as new programs established after 1977.

Kingsley and Tatian (1999) used this data set to assess the overlaps between welfare and housing assistance in 100 large metropolitan areas. Other researchers have used the data for grant-based research projects. One group used disaggregated data provided by HUD (Multi-family Tenant Characteristics System data) to map subsidized households by means of geographic information system (Wayne Sherwood, personal communication, November 15, 1999). McClure used *A Picture of Subsidized Households, 1998*, to explore the mismatch between jobs and housing in the Kansas City metropolitan area (1998).

Characteristics of subsidized housing residents: 1977 and 1996

In 1977, 283 public housing programs existed within the study area, with 10,459 subsidized households; over 98 percent of the 10,672 available units were occupied. Most of the households, 82.6 percent, were white (table 1), and elderly persons constituted a large portion of the residents. Approximately 29.4 percent of the housing programs reported that more than 90 percent of the households had elderly household heads, and an additional 17.4 percent reported 50 to 89 percent with elderly household heads. About 6 percent of the

Table 1. 1977 and 1996 Programs by Race and Percent Occupied

Year	Program	Units Available	Units Occupied (%)	Race (%)				
				White	Hispanic	Black	American Indian	Asian-Pacific Islander
1977	283	10,672	98	82.6	10.9	5.9	0.06	0.06
1996	283	10,520	92	76.0	15.8	7.0	1.1	0.2

Note: Totals may not equal 100 percent because of rounding.

housing programs had mean household sizes of one person per household, 69.7 percent had mean household sizes between 1.01 and 1.99 persons per household, 17 percent had between 2.0 and 2.99 persons per household, and 7.2 percent had households with 3 or more persons.

In the majority of housing programs, less than 25 percent of the households received welfare support. Almost 30 percent of housing programs had no households receiving welfare, and only 5 percent had a majority of households on welfare. The welfare payments included AFDC, SSI, and other General Assistance.

The housing programs evaluated in 1977 were matched to the 1996 file. In 1996, there were 10,520 available subsidized housing units in the study area, of which 9,666 (92 percent) were occupied; 79 percent of all available units were assessed in this study. Most households were white (76 percent); of the others, 7.0 percent were black, 1.1 percent were American Indian, 15.8 percent were Hispanic, and 0.2 percent were Asian-Pacific Islander. Persons aged 62 or older accounted for 52.1 percent of the households.

In 1996, 29.3 percent of the housing programs reported that all households received some form of government income assistance, and 46.3 percent reported that the majority of households received such assistance. Only 0.4 percent of housing programs reported that the majority of households earned most of their income from wages: 24 percent were unaccounted for because of lack of data. This simply means that most of the households in these programs were receiving nonwage income subsidies.

Elderly households existed in a greater number of housing programs, but the relative proportion of elderly households per program was less concentrated. Less than 10 percent of the housing programs had more than 90 percent of households defined as elderly—a substantial drop from 1977. About 31 percent of the programs had between 50 percent

and 89 percent elderly households, and 59 percent had between 0 percent and 50 percent.

Changes between 1977 and 1996

Table 2 summarizes the changes in the racial composition of occupied public housing households between 1977 and 1996. There was a 27 percent decline in white households and a 4.6 percent decline in black households. These declines were offset by large increases in other minority households. All minority households increased by 10.5 percent from 1,828 in 1977 to 2,020 in 1996. "All minority" refers to all nonwhite households. Hispanic households increased by 16.5 percent, Asian-Pacific Islander households by 183.3 percent, and American Indian households by 42.9 percent.

Table 2. Percent Change in Subsidized Household Race and Ethnic Composition

Category	1977	1996	Percent Change
Total available units	10,486	10,520	0.3
All minority	1,828	2,020	10.5
White	8,639	6,307	-27.0
Hispanic	1,137	1,324	16.5
Black	614	586	-4.6
American Indian	63	90	42.9
Asian-Pacific Islander	6	17	183.3

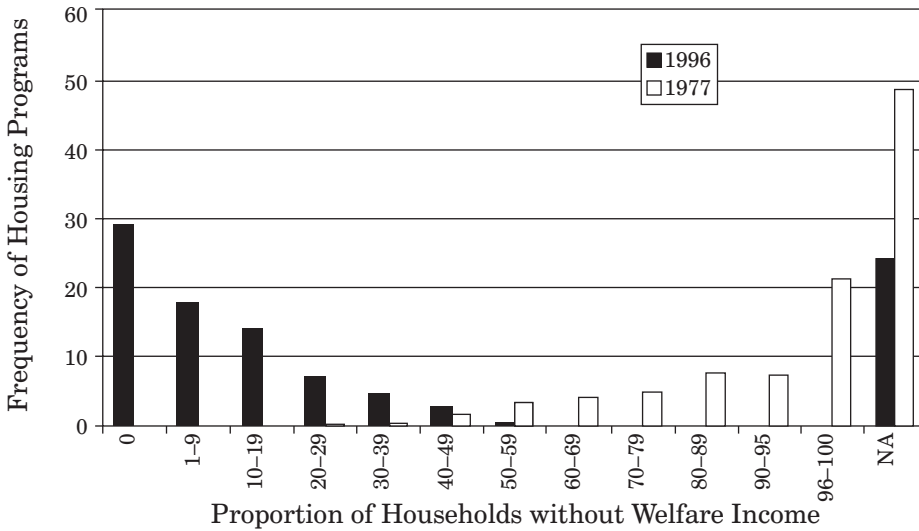
Welfare

To compare changes in the proportion of households in terms of welfare, SSI, or General Assistance, it is necessary to look at households not receiving any, or little, government support. In 1977, the definition for the percentage of households receiving any welfare included those receiving AFDC, SSI, and General Assistance. It included only those households receiving most of their income from AFDC or General Assistance. Thus, for purposes of comparison, the proportion of households earning most of their income from wages (1996) and those not receiving AFDC, SSI, or General Assistance (1977) are compared.

The proportion of programs reporting a high number of nonwelfare households declined between 1977 and 1996. It appears that there may be an increase in welfare dependency in public housing programs in

1996. Figure 2 shows that in 1996, about 47 percent of the programs reported that less than 10 percent of the households received most of their income from nonwelfare sources (wages or retirement income). Another 30 percent had between 10 and 49 percent of households receiving most of their income from nonwelfare support. Less than 1 percent had 50 percent or more of the households citing wages rather than welfare support as their major source of income. By contrast, in 1977, 53 percent of the programs reported that 50 to 99 percent of the households received no welfare support (AFDC, SSI, or General Assistance).

Figure 2. Proportion of Housing Programs Reported as the Percentage of Households in Each Program Not Receiving Welfare Support



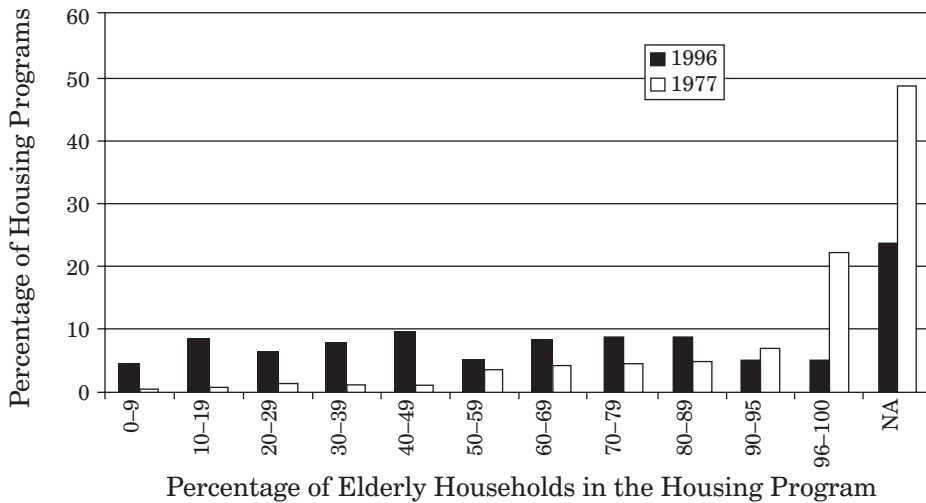
Note: NA = not available.

Elderly

The proportion of programs with a high percentage of elderly households appears to be declining. An elderly household is one in which either the household head or spouse is 62 or older (Burke 1996a, 1996b, 1996c). This is in contrast to the growing number of elderly people in the study area (Albrecht 1993). Figure 3 illustrates the change in the distribution of programs by the percentage of elderly households.

Figure 3 shows that in 1977, a large number of programs had high proportions of elderly households. More than 20 percent of the programs had between 96 and 100 percent of households designated as elderly. In 1996, however, less than 4 percent of the programs had such a high

Figure 3. Proportion of Housing Programs by Percentage of Elderly Households in the Program, 1977 and 1996



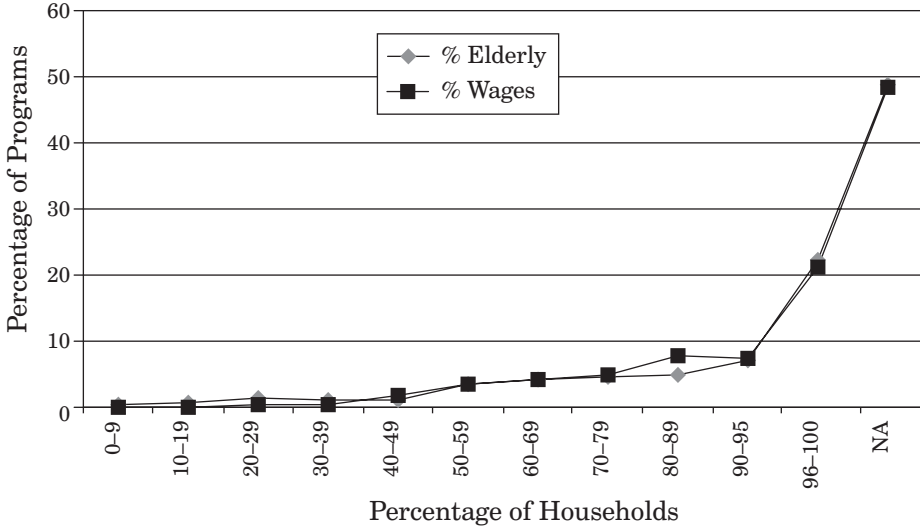
Note: NA = not available.

concentration of elderly households. Instead, such households appear to be more evenly distributed across programs.

When changes in the percentage of elderly households and the percentage of those not receiving welfare are compared, the differences between 1977 and 1996 emerge. Figures 4 and 5 compare the representation of elderly households in public housing programs with the source of income for households across programs. In 1977 (figure 4), the profiles of elderly households and households not receiving welfare, AFDC, or SSI are similar. Since most elderly households would be expected to have Social Security or retirement income and therefore not receive wages or other public subsidy, the similarity is reasonable.

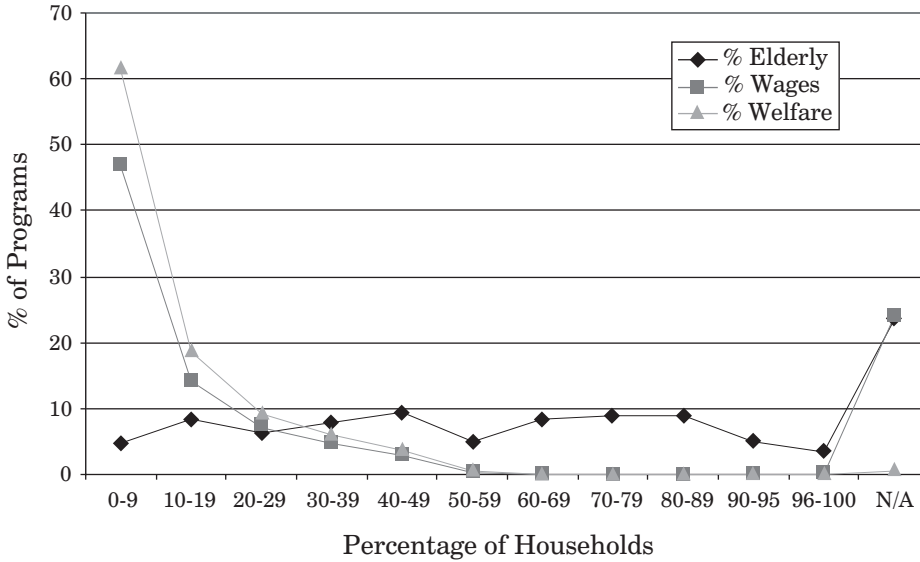
In 1996 (figure 5), a different profile is evident: The percentage of households whose major source of income is wages or welfare is compared with the percentage of elderly households. Since 1977, elderly households are found in more housing programs but are less concentrated per program. Households getting most of their income from wages make up less than 20 percent of the households in 61 percent of the programs. Likewise, households deriving the majority of their income from welfare make up less than 10 percent of all households in 61 percent of the programs. This means that in 1996, the majority of households in all programs derive income from multiple sources, no one of which constitutes the majority of income. Other possible sources, in addition to wages and welfare, include pensions, SSI, Social Security, unemployment benefits, or child support (Burke 1996a, 1996b, 1996c).

Figure 4. Comparison of 1977 Elderly Households and Income Sources



Note: NA = not available.

Figure 5. Comparison of 1996 Elderly Households and Income Sources

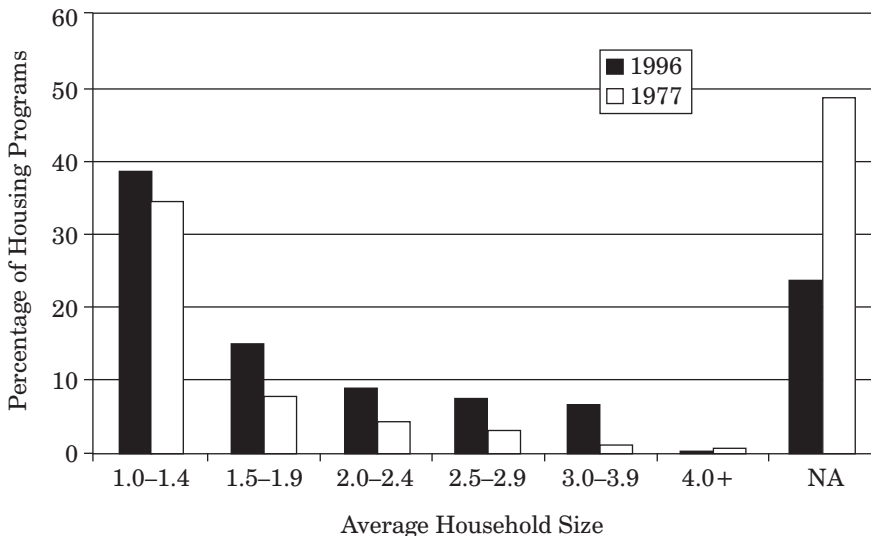


Note: NA = not available.

Mean household size

In both 1977 and 1996, more than 30 percent of the housing programs reported an average household size of less than 1.5 persons. However, 76 percent of 1977 programs had mean household sizes of more than 2 persons, while 1996 programs had only 53 percent of such households. Housing programs with average household sizes in excess of 3 persons increased between 1977 and 1996 from 7.2 percent to 9 percent. Housing programs in 1996 have higher proportions of households with larger household size (greater than 1.5) (figure 6). But whether the mean household size is slightly larger in 1996 cannot be determined. This apparently larger household size may be related more to declining proportions of elderly households between 1977 and 1996 and possibly to an increase of households with more than one child.

Figure 6. Distribution of Mean Household Size, 1977 and 1996



Note: NA = not available.

In summary, three trends emerged in the study. Compared with 1977, housing program participants have become more racially and ethnically diverse; more households received nonwage support (welfare or other) in 1996 than in 1977, possibly increasing dependency; and fewer households were elderly. The increasing racial and ethnic diversity found in public housing in 1996 is consistent with the increasing proportions of minority populations in rural areas (Cook and Mizer 1994). Declines in wage support may reflect declines in job opportunities or increased unemployment in some nonmetropolitan areas.

Several of these trends contradict the general population trends of the region. Researchers have documented the aging of rural areas, particularly in the nonmetropolitan Great Plains region (Albrecht 1993; White 1998). The analysis in this study suggests that households in public housing in 1996 are somewhat younger and are living with larger families than was the case in 1977. This may indicate a rising number of single-parent households in public housing programs. This finding is also supported by the same trend at the national level (Burke 1996a, 1996b, 1996c). It may be the case that elderly households tend to be homeowners or live in elder care facilities and that the rise in younger families in subsidized housing reflects the declining availability of affordable rental units.

A comparison with regional county-level changes

The second research question this study addresses is whether changes in subsidized household characteristics were related to changes occurring at the county level. Two ordinary least squares multiple regression models were specified to assess relationships among public housing and county-level variables. Changes in population size and characteristics and economic changes at the county level were hypothesized to affect changes in total occupancy and the percentage of public housing households with minority occupants. The dependent variable for Model 1 is the change in the percentage of minority occupants in public housing between 1977 and 1996. For Model 2, the dependent variable is the change in overall occupancy rates.

The same measures of population and economic change are used as independent variables in both models. Population change variables include absolute change in total county population (POPCHG80-96), total minority population change (MINCH80-96), change in the percentage of the population below the poverty line (POVCHG80-96), and change in the percentage of persons over age 65 (AGECH65+). All change at the county level is based on 1980 census figures and 1996 estimates (U.S. Bureau of the Census 1980, 1999, respectively). Economic measures include change in unemployment rates (UNRTCHG) between 1980 and 1996; degree of rurality (Beale codes—Beale4, Beale5, etc.); and primary economic activity of the county (ERS economic typology codes: MANUFACTURING, GOVERNMENT, etc.).

Model 1

Overall, Model 1 was significant at the 0.01 level with an R^2 value of 0.498. The moderate R^2 value suggests that county-level changes are

important in predicting change in the representation of minorities in public housing (see table 3). At the county level, changes in overall population had a significant positive relationship with the dependent variable. It is interesting to note that change in minority representation at the county level was negatively associated with changes in the percentage of minority households. Simple correlation revealed the same negative association (-0.455). The result, a decline in overall minority representation at the county level, corresponds to an increase in representation in public housing. Since population decline may result from out-migration, it is possible that this negative relationship reflects the selective out-migration of minorities, leaving behind the most disadvantaged. Of the 158 counties with public housing projects, 130 experienced population decline and 98 saw a decline in total minority population.

Table 3. Models 1 and 2

Variables	Coefficients for Model 1	Coefficients for Model 2
FARMING	a	a
GOVERNMENT	0.476*	-0.136
MANUFACTURING	-0.020	-0.022
MINING	-0.053	-0.007
NON-SPECIALIZED	0.101	-0.122
SERVICE	0.179	-0.167
POPCHG80-96	0.249*	-0.197
MINCHG80-96	-0.375*	0.142
AGECHG65+	0.071	0.263
POVCHG80-96	0.063	0.125
UNRTCHG	0.171*	0.009
BEALE4	-0.156	0.000
BEALE5	-0.329*	-0.242
BEALE6	0.090	-0.018
BEALE7	a	a
BEALE8	-0.068	0.054
BEALE9	-0.012	0.024

* $p = 0.01$.

^aReference variable.

Compared with farming-dependent communities, government and service counties were positively associated with increases in minority representation while mining and manufacturing counties were negatively related. Degree of ruralness, as measured by the Beale codes, was negatively associated with changes in minority representation across all categories except Beale6, when Beale7 was the reference variable. Beale5 was the only significant measure of ruralness. Beale5 describes counties that had an urban population of 20,000 or more but were not adjacent to a metropolitan area (USDA, ERS 1995).

Model 2

Model 2, using the same county-level variables as Model 1, failed to adequately explain the variation in the data. The R^2 value for Model 2 was 0.087, and it was not significant. The coefficients are listed in table 3, and the lack of association is clear. With the diversification of types of subsidized housing programs in the late 1970s, it is likely that changes at the county level affect the availability of alternatives rather than overall occupancy rates.

Discussion and conclusion

The data sets used in this study suggest that between 1977 and 1996, the demographic characteristics of public housing households in the Great Plains shifted. Regional change is reflected in the characteristics of public housing households, which have become increasingly diverse, with a 10.5 percent increase in minority households. Elderly households seem to be less concentrated in 1996, with fewer housing programs reporting a majority of households as elderly than in 1977. Housing programs in general report a smaller proportion of households earning the majority of their income through wages or business. County-level changes in population, minority, and unemployment, as well as rural and economic status, were found to be indicators of change in minority representation in public housing.

The limited analyses completed on these data suggest a need to better understand the impact of regional economic and population trends on the distribution and characteristics of public housing households. This analysis was limited to changes within housing programs that existed in 1977. Obviously, new programs have been incorporated into the mix of housing subsidy options since then, and the exclusion of those programs limits the generalizability of this study. It does, however, provide a first look at shifts in the composition of public housing households in rural areas.

Future research needs to incorporate new programs, such as the Section 8 certificate and voucher programs and scattered-site housing. The changing nature of subsidized households over the past 20 years suggests underlying processes by which certain types of households have either larger participation rates or are more likely to move away from public housing than other types of households.

In addition to regional changes, national-level economic changes are influencing housing trends. During the 1950s and 1960s, rapid

economic growth saw decreases in unemployment and poverty in the United States (Haveman and Schwabish 1999). However, Blank (1993, quoted in Haveman and Schwabish 1999) concluded that the substantial decline of poverty caused solely by economic growth ended during the 1980s. He suggested that intervening factors such as “problems with the actual measurement of poverty, regional differences in where the poor lived and where economic expansion was occurring,...the changing demographic composition of poor households, and reduced labor market activity among poor families” contribute to changes in the composition of those in poverty (Blank 1993, quoted in Haveman and Schwabish 1999, 4). This changing nature of impoverished households is particularly relevant to nonmetropolitan areas that have seen declines in economic opportunities and federal disinvestment in housing programs, leaving a growing proportion of households without access to safe, affordable housing. Changes in federal welfare policy further exacerbate these problems by reducing or eliminating aid. The impact of removing income aid on housing opportunities for low-income families is not known, but in a region already hard-pressed for economic growth, the prospects seem grim.

This study raises a number of questions about nonmetropolitan housing. The devolution of housing policy from federal to greater state and local control and the shift in emphasis from large-scale public housing projects to more flexible programs such as housing vouchers, block grants, and tax credits (Orlebeke 2000) warrant further attention in nonmetropolitan areas. These areas, especially the ones in isolated rural communities, have smaller populations and comparatively fewer opportunities for public and private partnerships. In rural areas, most households (about three-quarters) own their own home, with only about 1 in 10 residing in apartments (possibly reflecting a shortage of rental units) (Mikesell and Wallace 2000). Further, recent work by Mikesell (1999) and Whitener (2000) suggests that minorities in rural areas may be at a greater housing disadvantage than whites. Both the shortage of rental units and the greater housing disadvantage of minorities in rural areas may contribute to changes in minority representation in public housing. They also highlight the lingering importance of public housing in rural areas, since more flexible rent supplement programs could be limited by fewer rental options or greater competition for existing rental units.

While the analysis in this study is limited, preliminary findings suggest that rural public housing occupants have changed. When the characteristics of impoverished households begin to shift, policies aimed at improving the quality of life and economic development within predominantly rural regions must be reconsidered. Clearly, public policy

initiatives must take into account unique regional characteristics, particularly when addressing the needs of those least able to adapt.

Appendix

Table A.1. Urban-Rural Continuum Codes

Code	
Metropolitan counties	
0	Central counties of metropolitan areas of 1 million population or more
1	Fringe counties of metropolitan areas of 1 million population or more
2	Counties in metropolitan areas with populations of 250,000 to 1 million
3	Counties in metropolitan areas with populations of less than 250,000
Nonmetropolitan counties	
4	Urban population of 20,000 or more, adjacent to a metropolitan area
5	Urban population of 20,000 or more, not adjacent to a metropolitan area
6	Urban population of 2,500 to 19,999, adjacent to a metropolitan area
7	Urban population of 2,500 to 19,999, not adjacent to a metropolitan area
8	Completely rural or less than 2,500 urban population, adjacent to a metropolitan area
9	Completely rural or less than 2,500 urban population, not adjacent to a metropolitan area

Source: USDA, ERS 1995.

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