METROPOLITAN AREA STRUCTURE, WELFARE POLICY AND MIGRATION OF POOR FAMILIES

by

Gordon F. De Jong
dejong@pop.psu.edu

Deborah Roempke Graefe
graefe@pop.psu.edu

Department of Sociology and Population Research Institute
The Pennsylvania State University

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Abstract

The thesis of this study is that economic and demographic structure of metropolitan places moderates the potential push and pull of stringent versus lenient welfare policy rules in the migration decisions of poor families. Metropolitan areas with better employment opportunities and higher concentrations of the same racial and ethnic groups to which potential migrants belong are expected to reduce the migration push associated with stringent welfare policies (De Jong, Graefe, and St. Pierre, 2003). Furthermore, they are expected to reduce intrastate and intra-metropolitan migration as well. We merge data from four main sources: The 1996-1999 panel of the Survey of Income and Program Participation, the Urban Institute's Welfare Rules Database, metropolitan and state economic characteristics from the Bureau of Labor Statistics, and population structural characteristics from decennial census data. Modeling both destination (pull) and departure (push) effects of metropolitan economic and demographic characteristics, state welfare policy measures and selected covariates in a nested discrete-time event history migration analysis, the findings will provide new information regarding the role of metropolitan area structure and state welfare rules in the intra- and interstate migration of poor families in the U.S.

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Introduction

The enactment of the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) in 1996 renewed the debate among welfare and migration scholars alike with regard to the incentive effects of the U.S. welfare system (Schram and Soss 1999; Schram, Nitz, and Krueger 1998; Frey, Liaw, Xie, Carlson 1996; Long 1974). Earlier research finds that stringent welfare policies motivate interstate migration among poor families (De Jong, Graefe, and St. Pierre, 2002), but from a policy perspective, research is needed to identify the process of migration decision-making, given welfare inequalities, when the process may be moderated by contexts that promote economic self-sufficiency and general well being for poor families from various racial/ethnic groups. We use longitudinal contexual, family, and individual multi-level data and integrate both destination and origin decisions to test of this aspect of the welfare migration hypothesis. This research addresses the debate on whether state welfare eligibility and behavior rules, which now vary across states, induce interstate and intrastate migration (see Borjas 1999, Cushing 1993, Danaher 1997, Enchautegui 1997, Kaestner et al. 2001, Moffitt 1992, and Schram et al. 1998) within various metropolitan area demographic and economic structural contexts.

Utilizing merged data from the 1996-1999 panel of the Survey of Income and Program Participation, the Urban Institute's Welfare Rules Database, metropolitan and state economic characteristics from the Regional Economic Information System (REIS) produced by the Bureau of Labor Statistics and population structural characteristics from decennial census data, we apply multiple measures of welfare eligibility and benefits and metropolitan area economic and

demographic measures to a longitudinal research design and multi-level event-history modeling techniques to assess the migration of poor families in metropolitan areas following PRWORA's enactment.

Background

Migration and Poor Families

The new federalism has at least two key consequences related to migration decision-making: increased inequality across states in the level of benefits and the restrictive nature of eligibility criteria, and inequality across states in the direction and degree of change in implementation of benefit levels and eligibility criteria (De Jong, Graefe and St. Pierre 2003 and De Jong and Graefe 2004). Thus, some states maintained or enhanced former AFDC policy guidelines while other states were expected to 'rush to the bottom' to reduce welfare case loads and to deter in-migration of poor families.

The microeconomic model of migration posits that rational individuals choose to migrate only after ensuring economic feasibility (Massey et al. 1998). Their decision to migrate therefore depends not only on macro- and micro-level determinants of the origin state (push factors), but also on those of the potential destination state (pull-factors). The welfare-migration thesis posits that the costs of migration are outweighed by its benefits when higher benefit levels and less restrictive eligibility rules favor welfare participants. Such conditions are expected to "push" migrants from places when state benefits and eligibility are less favorable. Based on this logic, we expect variation in state welfare policy to increase the likelihood of migration to states with more lenient eligibility rules and higher benefits, while discouraging migration to states with more stringent rules and lower benefits. However, some metropolitan areas offer economic

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alternatives to welfare that may make welfare eligibility irrelevant for migration decision-making.

We extend prior research employing traditional micro-level migration theory by refining the generalized micro-economic cost-benefit theoretical assumption through explicitly modeling both a destination benefit model (pull effects) and a departure disincentive model (push effects). In order to evaluate the effect of welfare reform on migration, we use general welfare policy cost-benefit dimensions (i.e., summary measures rather than single specific items), controlling for alternative explanation indicators of metropolitan area and state economic characteristics, and socio-economic characteristics of individuals.

Prior Research on Welfare Migration

Pre-welfare reform research on welfare migration presents conflicting and inconclusive results as to whether poor families move primarily to maximize their welfare benefits, in part, because of the diverse range of data and methods employed (see Schram, Nitz, and Krueger, 1998, for a thorough review). Most of these studies used a cross-sectional methodology, an approach providing after-move-only measures of poverty, employment status, educational enrollment, marital status, fertility, etc., which are not only determinants of migration but also important criteria for welfare eligibility. Thus the causal order of variables is a major analytical problem in interpreting results from these studies.

Furthermore, most research neglects non-economic factors in the migration decision-making process. Schram and Soss (1999) point out that research based on the welfare-migration thesis typically has not allowed for non-economic factors to compete with economic ones such as post-reform changes in welfare eligibility requirements (Schram et al. 1999). Recent studies support the salience of non-economic factors in the welfare migration process (Enchautegui

1997), and post-reform research focusing on interstate migration of poor families finds clear evidence that stringent policies motivate outmigration (Graefe and De Jong 2004; De Jong, Graefe and St. Pierre 2003).

This Study

Despite the potential for welfare policy to create economic hardships for poor families, access to stronger labor markets and to network ties with others having similar backgrounds may help poor families overcome the need for publicly provided assistance when welfare eligibility becomes more restrictive or behavioral expectations required for welfare participation are difficult for families to meet. The multiethnic structure of metropolitan areas has been found generally important for internal segregation patterns in the 1990s (Frey and Farley 1996) as well as for state and metropolitan out-migration of different racial and ethnic groups (Kritz and Gurak 2001). Regional redistributions by racial/ethnic and national origin were pronounced throughout the 1990s (Frey 2002), possibly responding to the accumulation of immigrant groups in many larger metropolitan areas (Frey et al. 1996). Indeed, while more than any other, housing related reasons are cited by low-income populations as motivating migration, family ties are given second-most as a reason for relocating (Schachter 2001). Thus, this study addresses the following research questions:

1. Is the migration departure decision "to go" less likely when poor families in welfare-stringent states live in metropolitan areas with greater employment opportunities?

2. Is this departure decision less likely when poor families in welfare-stringent states live in metropolitan areas with greater concentrations of persons with the same racial and ethnic background?

3.   And, is this departure decision less likely when poor families in welfare-stringent states live in more or less segregated metropolitan areas for their racial/ethnic group?

We will examine these questions using a longitudinal design to calculate individual-level life-history indicators of migration behavior, permitting the measurement of determinants preceding the decision to migrate. Data collected between 1996 and 1999 allow tests of our thesis for the final pre-reform policy year and the period immediately following welfare reform.

Research Design and Methods

This study uses merged data from four main sources – the 1996 Panel of the Survey of Income and Program Participation (SIPP), the Urban Institute's Welfare Rules Database (WRD), and a state and metropolitan area economic characteristics file (created from 1995-1999 Regional Economic Information System data) and area racial and ethnic population structural measures (from the 1990 Decennial Census) – in a longitudinal specification of welfare-benefit "push" and "pull" on individual migration behavior during the 1996 through 1999 welfare reform period. Our data are left censored at the beginning of 1996, the year in which welfare reform went into effect; thus we observe migration behavior of families beginning around the time reform was initiated. Observations are right censored with a migration event or at the end of 1999, when the survey ended.

We focus on 7,878 spells of observation for SIPP married and single-parent families whose family income was at or below 200 percent of the federal poverty level (FPL) any time during the four-year observation period. This study sample encompasses all poor families who migrated from one state to another plus a one-tenth randomly selected subsample of non-migrating poor families. These families provide 202,471 person-months of observation.

Interstate migration is a time-varying indicator defined as a move across state lines in any month during the 1996 through 1999 SIPP panel time period. Migration to and from metropolitan areas is similarly determined for the 98 metropolitan areas designated in the 1996 SIPP. Table 1 presents preliminary descriptive statistics for the variables used in the destination and departure models; variable specifications and data sources are described below. A brief discussion of the origin and destination models outlines these variables.

Table 1 About Here

Modeling Strategy

Statistical Modeling Strategy

Conceptualizing both departure (push) and destination (pull) effects is consistent with the microlevel migration literature, which views migration decision making as a two-part, but interrelated process – 1) the decision to stay or move controlling for the pull of potential destinations and 2) the decision where to move. Based on this logic and following the migration-modeling strategy of Frey, Liaw, Xie, and Carlson (1996), we estimate a nested logit model for predicting a binomial response among multiple migration outcomes, with dummy indicators to control for departure and destination state fixed effects. The nested logit model assumes an integrated decision making process according to a decision tree where the independence of choices is assumed only at each step in the decision tree. This model thus avoids the independence-from-irrelevant-alternatives (IIA) property that occurs when the random components of the utility across choices are erroneously assumed to be independent, as with simple multinomial and conditional logit models. Our decision tree is shown in Figure 1, where level 1 choices below the interstate move choice (at level 2) are 46 separate state destination

alternatives. (Wyoming, North and South Dakota, Vermont, and Maine are not considered in our models because SIPP identifies these states as two combined residence areas, precluding estimation of state-level characteristics; only 29 cases living in this set of states at some time from 1996 through 1999 meet criteria for our study sample, and among these only 10 moved to or from one of these states.)

Figure 1 About Here

The model has a closed-form solution at each level (SAS Institute, Inc., no date):

$$P_i\left(j_h \mid \pi_h\right) = \frac{\exp\left[\mathbf{x}_{i,j_h\pi_h}^{h'}\beta^h + \sum_{k \in C_{j_h\pi_h}} I_{k,\,j_h\pi_h}\theta_{k,\,j_h\pi_h}\right]}{\sum_{j \in C_{\pi_h}}\exp\left[\mathbf{x}_{i,j\pi_h}^{h'}\beta^h + \sum_{k \in C_{\pi_h}} I_{k,j\pi_h}\theta_{k,j\pi_h}\right]}, \quad h = 2,...,L$$

where $P_i(j_h|\pi_h)$ is the probability that an individual at particular time i makes choice j_h (where $j_{h=2}$ represents a decision to stay in the state of residence, to move to another state, to move within the state of residence, or to leave the study sample) given the set of alternatives made in conjunction with choice j_h. In our models, the choice set corresponding to j_2=interstate migration includes the U.S. states (level 1) shown below "Interstate Migration" (level 2) in our decision tree (Figure 1). $\mathbf{x}$ is the vector of variables included in the model for the particular choice (as indexed by j and h), which in our models includes individual characteristics and characteristics of the individual's origin metropolitan area and state where h=2 (level 2) or economic and welfare policy characteristics of each state alternative where h=1 (level 1).

Our model of the probability of a choice at level 2 considers an inclusive value defined recursively according to the utility of alternative state choices compared with the respondent's current state of residence. This level-2 model identifies the push effects of a potential migrant's origin location. Origin location characteristics include metropolitan area and state level variables. I, representing the inclusive value for state alternatives at level 1, is defined as:

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$$I_{\pi_h} = \ln \sum_{j \in C_{\pi_h}} \exp\left[\mathbf{x}_{i,j\pi_h}^{h'} \beta^h + \sum_{k \in C_{j\pi h}} I_{k,j\pi_h} \theta_{k,j\pi_h} \right]$$

$$0 \le \theta_{k,\pi_1} \le ... \le \theta_{k,\pi_{L-1}}$$

where θ is a dissimilarity parameter that can be interpreted as the change in the probability that

the alternative is chosen that occurs with an improvement in the alternative's attributes (see

Train, 2001).

No inclusive term is included in estimation of the conditional probability that an

individual chooses state j at level 1:

$$P_i(j_1 \mid \pi_1) = \frac{\exp\left[\mathbf{x}_{i,j1\pi_1}^{1'} \beta^1 \right]}{\sum_{j \in C_{\pi_1}} \exp\left[\mathbf{x}_{i,j\pi_1}^{1'} \beta^1 \right]}$$

This is the "destination model" for identifying pull effects. The pull of destination choice

characteristics not identified by state-level variables is controlled for by the inclusive term

included in the level-2 departure model.

Several measures of model goodness of fit can be calculated for the nested model. We

present McFadden's likelihood ratio index (LRI) for each model's fit compared with the null

model. McFadden(1974) discusses his LRI as analogous to the R^2 for ordinary least squares

linear regression models. The measure ranges from 0 to 1, where 0 indicates no fit and 1, perfect

fit. We also present –2LogL measures for use in model comparisons.

Departure Model

Departure models are discrete-time event history models in which spells begin at the start

of the SIPP observation period in 1996, the year PRWORA went into effect, or in the month

following a migration event (in the case where the individual provided multiple observation spells). Right censoring occurs with a migration event, a death, attrition from the survey, or the last survey interview in 1999. Because these models estimate the likelihood of the event occurring in any observed month conditional on its not having occurred in other months of observation considered in the model, each person-month contributed by a case to the data is treated as an independent observation (see Allison 1995 for a discussion of nondependence among observations in survival analysis).

These models estimate the likelihood of each type of migration (interstate, intrastate, and intra-metropolitan area) conditional on not migrating by means of either of the two competing migration types or leaving the survey for unknown reasons (attrition). We code the interstate move variable as a "1" when the individual's state fips code differs in a month from the state fips code in the previous month. Using SIPP variables indicating why an individual left or entered the survey in a particular wave and the metropolitan fips code in the previous and current months, the no-interstate-move category is further refined by coding intrastate moves as "2", intra-metropolitan area moves as "3", and attrition cases as "4" in the month of occurrence. When no move is observed (the reference category in departure models), the outcome variable is coded as "5."

The basic departure model includes lenient-to-stringent measures of welfare rules levels in the state in the previous month (origin-state "push") and the maximum welfare dollar benefit for a family of four (reverse-coded so that higher values indicate greater stringency). Metropolitan area characteristics modeled as moderators of the policy effect include employment-to-population ratio, job growth, proportions of the population who are African American and non-Hispanic white, and level of segregation in 1990. For respondents originating

outside SIPP-designated metropolitan areas, and thus are missing metropolitan characteristics data, we assign the U.S. means for these indicators. We then control for origin non-metropolitan residence using a dummy indicator. State-level economic characteristics modeled as an alternative explanation of migration are state-level employment-to-population ratios. These area characteristics are time-varying by year. We examine metropolitan area characteristics for direct, mediating and interactive (with state welfare policy) effects. Individual-level demographic characteristics used as controls in the full model are family structure and the family head's age and educational attainment. Also included are pre-migration home ownership, employment, school enrollment, and number of school-aged children – all indicators of attachment to origin locations. . These indicators are lagged so that they represent conditions in the month prior to the month in which an event may occur.

We take a hierarchical modeling approach: Each of the following models adds sequentially to the previous model, beginning with 1) a state policy with state economic characteristics base model, controlling for migration-salient individual and family characteristics, 2) a set of models in which we add to the base model, tests for direct effects of each metropolitan area characteristic, and 3) moderation models testing metropolitan structural characteristics by state policy interactions. Separate sets of models compare the likelihood of migration by race and Hispanic origin as well as for the population as a whole; racial/ethnic minority status is indicated by three dummy variables for non-Hispanic white, Hispanic, and African American.

<u>Destination Model</u>

For destination-choice models, our estimation is restricted to those who moved to another state. Here we are interested in the relationship between the choice of a state as the destination when migration occurs and the leniency versus stringency of the state's welfare policy and

whether the relationship varies by family structure. Welfare policy is characterized by the state's time-varying basic eligibility and behavior-related rules summary scores (ranging from lenient to stringent) and the maximum dollar benefit for a family of four (reverse coded so that high values indicate stringency). In addition, the destination model controls for the pull effect of state-specific employment-to-population ratio. Neighboring states are expected to have greater attraction to migrants, so all models control for whether the destination alternative borders the state of residence in the previous month. In addition, because return migration is a sizeable component of interstate migration (Dublin 1998; Schram et al. 1998), control for a potentially higher propensity to choose destinations of previous residence is also important. We define a state as a previous state of residence in all months following a departure from that state, using a dummy coded indicator. The effects of these characteristics are estimated for the binomial choice of each alternative state at level 1 of our nested logistic regression model.

Figure 1 About Here

Migration Data: The Survey of Income and Program Participation (SIPP).

The United States has no national migration survey, and migration scholars usually rely on the decennial census, Current Population Survey, special purpose surveys, or other secondary administrative data sources to obtain minimal information on aggregate migration rates or individual migration behavior. Unfortunately, these data lack information on migration histories. Although not a migration survey, the 1996 Panel of the Survey of Income and Program Participation (SIPP) does provide a four-year current, as opposed to retrospective, migration history along with extensive individual socio-economic and program participation information. Thus SIPP is arguably the best nationally representative longitudinal data set currently available

to study the causes and consequences of migration in the United States (Clark 1990), and provides a substantial number of respondents living in metropolitan areas at some time during the survey period (1996-1999). .

Migration events and family and individual-level data are from the 1996-1999 Panel of the SIPP, while state characteristics are derived from the three additional data sources. The 1996-1999 Panel of the Survey of Income and Program Participation is a longitudinal survey of around 40,000 households which is nationally representative of the resident U.S. civilian, non-institutionalized population when appropriately weighted. It contains information on monthly income and assets, public assistance receipt, living arrangements, including migration behavior, and demographic background (see **www.sipp.census.gov/sipp** for additional information), which we use to construct event history files based on person months for poor families. Interviews of all household members age 15 or older every four months record monthly changes in these factors as well as state of residence, thus permitting a prospective study of migration which includes information at both origin and destination points. Unfortunately, sample contributions from Maine, Vermont, North Dakota, South Dakota, and Wyoming are so small that the SIPP public-use data group these five states into two categories. Since welfare policy classifications differ for states within these two groups, our analysis of migration to and from them is precluded.

Each family in each household is considered, whether a primary family or related or unrelated subfamily. One record per family per month is included in our event history file. Generally, for married-couple and single-mother-headed families, the female head provides individual-level information for our models; for single-father-headed families, this information is provided by the male head. The exception is that for married couple families, lack of employment is coded "yes" when both male and female heads are not working for pay and

school enrollment is coded "yes" if either of them is enrolled in school.

Because individual and family demographic and economic characteristics are known to influence migration behavior, we address the research questions with statistical controls for age, and educational attainment in our models.. These dummy indicators, constructed with SIPP data, include time-varying indicators of being child-bearing aged (20 to 45 versus all others) and having less than a high school education or having more than a high school education (versus having only a high school diploma). Family structure, measured as dummy indicators of single-mother-, single-father-, or married-couple family, is also time-varying in our analysis.

We test the effects of social network ties and employment with time-varying indicators reflecting circumstances in the month just prior to our migration events of interest. These variables include the number of school-aged children (6 to 18 years of age), employment status, school enrollment, and home ownership. Numbers of children in each age group are determined through an evaluation of family rosters by age for each month. Employment, school enrollment, and home ownership involve both social and economic ties to places of origin. These three indicators are dummy variable coded "1" when true in the previous month.

Welfare Policy Data and Methods

Data on state-level welfare reform rules are from the Urban Institute's Welfare Rules Database (WRD), which provides a longitudinal, primarily textual account of the changes in AFDC/TANF rules in all 50 states and the District of Columbia for each year 1996-1999. The WRD organizes the detailed textual information on welfare rules across states and time as well as across different types of assistance units. Caseworker manuals and state regulations provide the data for 1997 to 1999, while AFDC state plans and waiver terms and conditions provide the data for 1996.

Thus, our approach to the measurement of welfare rules is based on stated "on the books" welfare policies developed by state legislatures and welfare agencies, and not on the "on the ground" policy implementation by local agencies and individual case workers. We argue that stated welfare policies provide not only the most valid indicator of state policy makers' intentions, but also the most reliable basis for constructing time series measures of welfare eligibility and behavioral rules, which are fundamental to assessing the basic migration impact hypothesis. Because within-state local areas may differ in practice regarding policy implementation, this strategy may result in measurement error, which is known to increase the potential that no influence will be found despite the existence of a true effect. Thus our results provide conservative estimates of the effect of welfare policy.

Using the basic policy categories provided by the WRD as a point of departure, we coded 78 salient individual welfare rule items for each state and for the years 1996, 1997, 1998, and 1999. These individual welfare rules for multiple years, coded on a lenient to stringent continuum, were then subjected to a Varimax factor analysis solution. Decisions on factor dimensions were based on the threshold principal component eigenvalue criteria of 1.00 or higher, and an individual item factor loading of .40 or higher in the rotated factor pattern. As shown in Figure 2, this methodology extracted 15 first-order and two second-order welfare policy factor dimensions composed of 40 individual items (see **http://www.pop.psu.edu/mswpvs/welfare-policy.htm** for item factor loadings from principal components analysis and scale reliability for constructs describing state policies). This strategy permits us to summarize the welfare policy climate on an annual basis for each state. Again these measures represent states' reported rules for a particular year without consideration of within-state variation in rule application.

Figure 2 About Here

In this paper, we analyze only the second-order policy dimension Behavior-related Rules, the first-order policy dimension Basic Eligibility Rules, and the calculated value of the maximum welfare dollar benefit for a family of four with no income based on formulas provided in the WRD. These three policy measures are merged with SIPP data so that the year of the state policy corresponds with the year of the SIPP interview for the particular person-month.

Maps showing across-state variations in our summary welfare policy measures in 1999 (i.e., score levels) and the directions of change for each state between 1996/97 and 1999 are shown in Figures 3 and 4. Figure 3 graphically displays the Behavior-related Rules indicator regarding recipient responsibilities for personal and work behavior, while Figure 4 displays across-state differences in Basic Eligibility Rules.

Figures 3 and 4 About Here

Maximum benefit dollar values are calculated for a family of four with no income for each year for each state and are adjusted for cost of living variations by U.S. region. The distribution of 1999 state maximum benefit levels is shown by the map in Figure 5. For modeling purposes, we reverse code this variable so that high values indicate greater stringency.

Figure 5 About Here

Metropolitan Area and State Economic Characteristics Data

Labor market opportunity structures that may be interrelated with state public welfare policy are alternative explanations for the migration behavior of poor families, such that apparent welfare policy-influenced effects on migration may be mitigated by strong economies encouraging in-migration and inhibiting out-migration, and weak economies encouraging out-migration. We use metropolitan area employment-to-population ratio and job growth as local

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labor market indicators. The 1990 Decenniel Census provides measures of metropolitan area population structure – including proportion white, proportion Hispanic, and proportion African American – and segregation. State employment-to-population ratio is included as a control variable. Economic measures are calculated using data from the 1995-1999 Regional Economic Information System (REIS). This information is merged with the SIPP and state policy data by geographic area and year.

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Table 1. Descriptive Statistics for Variables Used in Analysis (n = 202,471 person-months).

Variable	Proportion or Mean (Range)
Interstate Migrations	0.43%
Destination State Characteristics	
Behavior-Related Rules 2nd-order Factor Score	0.05
	Range: -1.48 – 2.25
Basic Eligibility Rules 1st-order Factor Scoret	0.13
	Range: -2.67 – 2.19
Maximum Benefit Stringency	707.81
	Range: 101.70 – 1102.05
Employment-to-Population Ratio	57.56
	Range: 47 – 129
Neighbors an Origin State	0.001%
Origin State Welfare Rules Change	
Behavior-Related Rules 2nd-order Factor Score	0.07
	Range: -1.48 – 2.25
Basic Eligibility Rules 1st-order Factor Scoret	0.13
	Range: -2.67 – 2.19
Maximum Benefit Stringency	709.79
	Range: 101.70 – 1102.05
Employment-to-Population Ratio	57.56
	Range: 47 – 129
Individual/Family Characteristic Controls	
Family Structure	
Married Couple	49.25%
Single-mother-headed	44.01%
Single-father-headed	6.66%
Minority	40.19%
Childbearing-aged	75.94%
Education	
More than High School	10.50%
High School	61.97%
Less than High School	27.53%
Owns Home	43.84%
Enrolled in School	14.99%
Not Working	41.68%
Number of School-aged Children	1.28
	Range: 0 – 8