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Fostering Low-Income Homeownership: A Longitudinal Randomized Experiment on Individual Development Accounts

Michal Grinstein-Weiss, Ph.D., MSW, MA
Assistant Professor, School of Social Work
University of North Carolina at Chapel Hill
michalgw@email.unc.edu

Jung-Sook Lee, MSW, MA
Doctoral Student, School of Social Work
University of North Carolina at Chapel Hill
jungsook@email.unc.edu

Kate Irish, MSW
Research Assistant, School of Social Work
University of North Carolina at Chapel Hill
kirish77@yahoo.com

Chang-Keun Han, MA
Research Associate, Center for Social Development
Washington University in St. Louis

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Acknowledgements

Abstract

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For low-income families, homeownership represents an important strategy to move out of poverty and offers long-term social and economic development opportunities. Individual Development Account (IDA) programs facilitate savings towards assets such as home purchase through matched savings, financial education and case management. Using longitudinal experiment data from the American Dream Demonstration, this study examines the influence of IDA participation on homeownership rates among low-income participants after 18 months (Wave 2) of program participation and after 48 months (Wave 3) at program completion. Involvement in specific home-search activities at Waves 2 and 3 was measured to determine whether these activities mediated the affect of IDA programs on homeownership.

Results from this randomized experiment indicated that IDA participation significantly increased homeownership rates at 48 months. Furthermore, participation in the home search activity, clearing debt, at 18 months of program participation mediated the effect of the IDA program on homeownership at 48 months.

Key Words: Homeownership, assets, wealth, IDAs, low-income

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Homeownership represents stability and economic development for many families and is an integral part of the American Dream. For most U.S. families, homeownership is not only the primary vehicle for wealth accumulation but is also associated with many benefits for individuals, families and communities including wealth accumulation, greater educational attainment of children, increased life satisfaction and neighborhood stability (Scanlon and Page-Adams 2001).

Although homeownership rates have increased in recent years and more than two-thirds of U.S. families own a home, low-income families face a number of barriers to achieving homeownership such as financial barriers, discrimination, lack of information about the home buying process and a shortage of affordable housing. These and other factors have produced a dramatic homeownership gap between lower-income and high-income households. In 2004, just over half (51 percent) of very low-income households (i.e., those with income below 50 percent of the area median income [AMI]) owned homes compared with 88 percent of high-income households (i.e., those with income at or above 120 percent of AMI; (Herbert et al. 2005).

For low-income families, accumulating wealth through homeownership represents an important strategy to move out of poverty and offers stability and long-term social and economic development opportunities. One program that helps low-income households overcome barriers to homeownership is Individual Development Accounts (IDAs). Participants in IDA programs save toward a down payment for a home while they receive support, incentives and financial education. The purpose of this study is to test the effect of IDA programs on homeownership rates among low-income participants using longitudinal randomized experiment data from the American Dream Demonstration, the first large scale test of IDAs.

Homeownership: A Key Mechanism for Wealth Accumulation

In the United States, homeownership is a key mechanism for wealth accumulation. The homeownership rate reached a historic high in 2004 with 69 percent of American families owning homes. Housing wealth is the largest source of savings for most middle-income households, and exceeds other assets such as retirement accounts and personal savings. On average, homeowners hold about half (48 percent) of household wealth in the form of home equity (Di, Yang, and Liu 2003). Furthermore, fostering homeownership has become a major asset accumulation strategy. For low-income families, accumulating wealth through homeownership represents an important asset building strategy to move out of poverty.

Benefits of Homeownership

A large body of research has documented the benefits of homeownership on the individual, family, and neighborhood or community levels. Individual benefits include wealth accumulation, improved child outcomes, as well as social and psychological benefits. Recent research has examined these benefits by household income to determine whether and how low-income homeowners are experiencing these benefits of homeownership. Findings from this research demonstrated that low-income homeowners are as likely as higher income homeowners to experience the benefits associated with homeownership (Herbert and Belsky 2006). Particularly, in the areas of wealth accumulation and child outcomes, low-income families experienced important positive benefits.

Financial benefits. Considerable research has established that homeownership is a key wealth accumulation tool for most families, and recent research has indicated that it may be even more crucial for low-income families. Based on Panel Survey of Income Dynamics (PSID) data from 1984 through 2001, researchers found that low-income individuals who were homeowners for the entire 18-year period had nearly eight times the average wealth compared to those who rented during the same period (Di, Yang, and

Liu 2003). Consistent with this finding, another study using PSID data found that low-income households that remained renters from 1976 through 1994 had essentially no wealth in 1994, whereas those who had become homeowners during that period had accumulated approximately $25,000 to $30,000 (Reid 2004).

Child outcomes. A number of studies have shown a link between homeownership and improved child outcomes including school attainment, earnings, and teenage pregnancy. In a comparison of children of homeowners with children of renters, researchers found that children of homeowners had greater school attainment as well as higher math and reading achievement scores (Haurin, Parcel, and Haurin 2002). In addition, parents' homeownership has also been shown associated with financial benefits for children throughout their lives, including increased earnings, welfare independence, and increased likelihood of owning their own home (Harkness and Newman 2002). Furthermore, the findings of Green and White (1997) demonstrated that daughters of homeowners were less likely to have children as teenagers than daughters of renters.

Social and psychological outcomes. In a review of research on the social impacts of homeownership, Dietz found that homeownership was associated with several positive social outcomes including greater social involvement, increased participation and activism in local politics, better health, and enhanced community characteristics such as lower crime rates (Deitz 2003). When compared to renters, homeowners were found more likely to be involved in volunteer work, neighborhood and block association meetings, and local politics (DiPasquale and Glaeser 1999). Furthermore, homeownership has been shown associated with higher ratings of household life satisfaction and self-esteem (Rohe and Basolo 1997; Rossi and Weber 1996).

Neighborhood and community outcomes. In addition to the impact that increased social and civic involvement can have on the community, homeownership has a positive influence on the stability and functioning of neighborhoods. Homeowners generally have less mobility than renters, and are more likely to remain in their home for longer periods

than renters. Given these factors, homeownership has been shown as a good predictor of residential permanence (Rohe and Stewart 1996; Scanlon and Page-Adams 2001). In addition, researchers have demonstrated that homeownership has a positive impact on property maintenance because homeowners have a greater incentive to maintain and repair their homes than renters.

Barriers to Low-Income Homeownership

In recent years, there has been a greater emphasis placed on increasing homeownership rates among low-income families. In response, the introduction of new mortgage products that require low down payments and flexible underwriting guidelines that allow larger debt ratios have facilitated the surge in home purchases. However, large homeownership gaps remain between income levels; specifically, low-income families continue to face many barriers in the home buying process. In a survey of public housing residents who were participating in a homeownership program, respondents identified an average of 4.6 major barriers to achieving their goal (Santiago and Galster 2004). Respondents most frequently identified financial barriers such as poor credit ratings, insufficient savings, low hourly wages, and too high debt. In addition, participants mentioned discrimination by mortgage lenders as a barrier.

Income, wealth, debt, credit scores. Research has indicated that both income and net wealth are related to achieving homeownership (Di and Liu 2004). Income represents a barrier to homeownership in terms of being able to make monthly mortgage payments as well as the costs of maintaining a home. Although not having enough income can be a constraint to homeownership, limited wealth has been shown to be a greater factor in becoming a homeowner (Barakova et al. 2003; Di and Liu 2004) because cash reserves are necessary for the down payment and to pay the closing costs and taxes associated with the home purchase. Despite the establishment of affordable lending tools that require low down payments, research has found that a lack of wealth continues to be a

significant barrier in buying a home (Barakova et al. 2003; Di and Liu 2004; Herbert and Tsen 2005).

A recent study suggested that a relatively small amount of savings or assistance could influence a household's ability to buy a home. Herbert and Tsen (2005) found that savings between $0 and $1,000 had the greatest impact on the probability of homeownership. Households with $1,000 in liquid wealth were 41 percent more likely to buy a home than households with no wealth. However, as savings increased above $1,000, households were only slightly more likely to purchase a home (Herbert and Tsen 2005).

During the 1990s, constraints related to credit quality became important barriers to homeownership (Barakova et al. 2003). An analysis of consumer credit reports for every U.S. county between 1999 and 2004 found that homeownership rates were strongly associated with credit scores (Fellowes 2006). Fellowes found that a significant difference in the percentage of households that owned their homes existed between counties with high credit scores and counties with low credit scores (73% versus 63%).

In addition, consumer debt has increased substantially in recent years, and at an alarming rate among low-income families. For example, the average debt among low-income families doubled between 1984 and 2001. Debt has become an increasing problem for low-income families, and this dramatic increase is particularly concerning because debt levels have increased much faster than income among most low-income families. According to Wagmiller (2003), among poor families in 2001, total debt was nearly equal to half of total annual family income.

Lack of information about home buying process. Some households encounter barriers to homeownership that stem from a lack of knowledge about the home purchase process as well as misconceptions about how eligibility is determined. One ethnographic study found that some families assumed they would not qualify for home loans, and others lacked knowledge regarding how creditworthiness is evaluated. In addition, some

families were unaware of the availability of first-time homeowner programs and subsidized programs (Ratner 1996). Similar findings were reported in the 2003 Fannie Mae National Housing Survey, which showed respondents had varying levels of accurate information about homeownership and the home buying process (Fannie Mae Foundation 2003). Low-income survey respondents were less likely to identify themselves as having an above average understanding of the home buying process; 33 percent of all respondents identified themselves as having an above average understanding of the home-buying process whereas only 18 percent of those earning less than $35,000 reported the same level of financial knowledge.

Discrimination in lending and real estate markets. Although owning a home has always been a part of the "American Dream," the dream has been blighted for many by a long history of discrimination and inequality in home mortgage lending. Despite the passage of the 1968 Federal Fair Housing Act and the 1974 Equal Credit Opportunity Act that made racially based mortgage discrimination illegal (Walter 1995), minority and low-income homebuyers are still at a disadvantage when buying a home. According to 2003 Home Mortgage Disclosure Act data, Blacks were denied home loans at twice the rate as White applicants for conventional home purchase loans (24 percent and 12 percent respectively; (Collins 2004). In addition, some researchers have asserted that another type of inequality has emerged that includes subprime lending, problematic forms of housing, exposure to predatory practices, and a lack of consumer protections (Williams, Nesiba, and McConnell 2005).

Shortage of affordable housing. Collins, Crowe, and Carliner (2001) found that many low-income renters were unable to attain homeownership because of inadequate supplies of affordable housing units in areas where they desired to live (based on factors such as availability of public transportation or reasonable commute for work). In fact, affordable housing is becoming scarce throughout the nation. For example, in the span of

two years (1997 to 1999), house price inflation and vacancies resulted in nearly a half-million fewer affordable owner occupied homes.

Saving for Home Purchase in Individual Development Accounts

Individual Development Account (IDA) programs were created to foster savings and asset accumulation including homeownership for low-income households. Individuals participating in an IDA program establish an IDA account at a financial institution and can save toward a down payment for a home purchase. At the end of the saving period, the individual's savings are matched with funds from either government or private sources. The matched funds provided by IDA programs enable participants to overcome one of the major obstacles to home purchase which is a lack of wealth (i.e., savings for the down payment and closing costs). In addition, participation in an IDA program helps participants acquire the habit of saving that will later help them meet monthly loan payments.

In addition to the matched savings accounts, IDA programs provide financial education, case management and opportunities for peer support. Participants are required to attend financial education classes that encompass topics such as how to save for a house, how to shop in the real estate market, and how to work with real estate agents. As compared with other homeownership programs, IDA programs have a principal advantage in that IDA participants are actively engaged in the program, can establish supportive peer relationships with others in the program, and are committed to saving for homeownership (Social & Enterprise Development Innovations 2003).

The purpose of this study is to examine the influence of IDA program participation on homeownership rates among low-income participants using a longitudinal randomized experiment data set that came from the American Dream Demonstration. This study tested the effect of IDA program participation on homeownership rates after 18 months (Wave 2) of program participation and after 48 months (Wave 3) at program completion. In addition, we measured participants'

involvement in home-search activities at Waves 2 and 3 to determine whether participation in these activities mediated the affect of IDA programs on homeownership.

Methods

Data and Sample

IDA programs are matched saving accounts that facilitate saving towards specific assets for low-income households. The American Dream Demonstration (ADD) is the first and most extensive national study of IDAs, which used a multi-method system design to test the effectiveness of IDAs as a community-based intervention (Schreiner, Clancy, and Sherraden 2002). As part of this multi-method study on IDAs, a longitudinal experiment was conducted by the Community Action Project of Tulsa County (CAPTC) in Oklahoma. Individuals with family income below 150 percent of the federal poverty level were eligible to participate in the experiment, and participants were randomly assigned into the IDA treatment group (n = 537) or a control group (n =66). The treatment group had access to the IDA program whereas the control group did not have access to the IDA program and agreed to abstain from receiving similar services from CAPTC (e.g., direct financial assistance through either a matched saving program or the lease-purchase program). Members of the control group were released from the restriction after completing Wave 3 interviews (or after September 2003 for non-respondents).

For the purpose of this study, data from the longitudinal experiment was used. Over the four-year study period, survey data was collected in three waves. The Wave1 survey was administered immediately after study enrollment and assignment to the treatment group or control group. A total of 1,103 respondents participated in personal interviews that yielded the Wave 1 data. The Wave 2 data was collected through interviews with 84.6 percent of the Wave 1 sample (n = 933) after an average of 18 months of program participation. Wave 3 data was collected at program completion (approximately 48 months after random assignment) and included 76.2 percent of the

Wave 1 sample (n = 840). Wave 2 and Wave 3 data were primarily collected via telephone interviews supplemented by field interviews. The survey instrument included approximately 100 questions, most of which were repeated in all three waves. Responses were examined after the collection of data and compared with the participant's prior responses; if responses were inconsistent or outliers, responses were verified.

The ADD recruitment period lasted 15 months from October 1998 to December 1999. From October 1998 through mid-March 1999, the treatment-control ratio was 5:6, but changed to a ratio of 1:1 thereafter. The data were adjusted for weight because participants who responded early may have been more motivated, and the difference in the treatment-control ratio may have resulted in placing more motivated participants into the control group. Among participants who enrolled before March 15, 1999, participants in the treatment group have a weight of 1.1, participants in the control group have a weight of 0.92, and all participants who enrolled after March 15, 1999 have a weight of 1. The weight provided a balanced sample.

The sample used for the present study consisted of ADD respondents who met two criteria: (a) they participated in all three waves of data collection, and (b) they did not own a home at Wave1 (N= 642). However, the sample considered for analysis of each variable was comprised of a subset of these 642 participants because some cases were missing values for either specific variables or the characteristic of home search activity. However, the sample used for the homeownership analyses consisted of participants who did not own a home at Wave 1 and were not missing values on any variable (N = 545 for Wave 2; N = 549 for Wave 3).

The sample subset used for analyses of home-search activities at Wave 2 was comprised of participants who were not home owners and who did not have missing values on any variable (n = 453). Similarly, the sample subset used for home-search activities analyses at Wave 3 was comprised of participants who were not home owners up to Wave 3 and did not have missing values on any variable (n = 377). The sample

used for mediation analysis is the same as the sample of home-search activities at Wave 2 (n = 453) because home-search activities at Wave 2 were used as mediators, and the sample is the subset of homeownership analysis at Wave 3.

In some aspects, individuals included in the analyses are different from individuals excluded because of missing values on any variables. Excluded individuals from homeownership analyses at Waves 2 and 3 were more likely to have reported changes in household membership (either adults or children). Excluded individuals from home search analyses at Wave 2 had fewer children and were less likely to receiving public assistance. Excluded individuals from home search analyses at Wave 3 had more adults in the household and were more likely to have reported changes in household membership. Considering these differences, caution should be used when generalizing the results from this study.

Measures

This study examined nine dependent variables for each of the two data waves (Wave 2 and Wave 3): (a) homeownership status, (b) six home-search activities, and (c) an index of home-search activities. Homeownership was a dummy variable with 1 indicating a homeowner. Dummy coding was also used to indicate participation in each home search activity. The six home-search activities included (a) *look through home listings in the newspaper*; (b) *drive around to look at houses that are for sale*; (c) *attend an open house*; (d) *talk with a realtor or someone else about buying a home*; (e) *talk to anyone about borrowing money for a home*; and (f) *clear up old debts in order to apply for a home loan*. Positive responses indicating participation in the activity were coded as 1. The index of home-search activities was a composite of the six home-search activities, and therefore provided an indication of the number of home-search activities in which individuals participated.

Independent variables were treatment condition and other covariates. Treatment condition was a dummy coded as 1, indicating participation into the IDA treatment

group. Covariates included demographic variables, household composition, and economic condition. This study used dummy variables for demographic variables. Age of participants at baseline was divided into three categories: 25 years or less, between 26 years and 45 years, and over 46 years old (reference group). Race/ethnicity data collected by the ADD included African American, European American, Hispanic/Latino, Asian American, Native American, and Other as indicated by respondents. However, for the purposes of the present study, race/ethnicity was divided into two groups: African American and others (reference group). Marital status of participants at baseline was categorized into three groups: never-married single, divorced/widowed, and married (reference group). The education variable on the ADD survey indicated the highest level of education that participants completed up to baseline, and provided participants with eight response options: (a) *grade school, middle school, or junior high*; (b) *some high school*; (c) *graduated from high school or earned a GED*; (d) s*ome college*; (e) *graduated from two-year college*; (f) *graduated from four-year college*; (g) s*ome graduate school*; and (h) *finished graduate school*. However, the education variable was dichotomized in the present study as (a) high school graduation or less, and (b) some college or more (reference group).

Household composition included four variables: (a) number of adults (18 years or older at baseline) other than respondents; (b) number of children (17 years or younger at baseline); (c) change in household composition of adults in Wave 2 or 3; and (d) change in household composition of children in Wave 2 or 3. Variables of change in household composition of adults or children were coded as dummy, with 1 indicating change. Economic condition included three variables: income, liquid asset, and public assistance. The income variable was calculated as monthly income divided by 100. Income encompassed funds from various sources such as wage, public assistance, benefits, interests, or personal relationships. The liquid assets variable was calculated as liquid assets divided by 100. Liquid assets included savings in passbook accounts or checking

accounts, or cash saved at home. The log liquid asset variable was made by log-transformation of the liquid asset variable. The variable for public assistance indicated receipt of public assistance at Wave 2 or 3: receipt of public assistance such as Supplemental Security Income (SSI), Temporary Assistance to Needy Families (TANF), or food stamps, was coded as 1.

Statistical Analyses

Univariate statistics were examined to check the distribution of variables in this study. Bivariate analyses (chi-square tests and independent sample t-tests) were conducted to identify sample imbalance at baseline and to determine whether homeownership and home-search activities differed by treatment conditions. In addition, this study used multivariate analyses (logistic regression and ordinary least square regression) to estimate the impact of IDA treatment on participants' homeownership and home-search activities.

For both Wave 2 and Wave 3 data, ordinary least square (OLS) regression was used to examine whether IDA participation had an effect on the index (i.e., the total number) of home-search activities that participants reported. OLS regression assumes normality of continuous variables, linearity between independent variables and a dependent variable, homoscedasticity, and no perfect multicollinearity. Income and liquid assets were not normally distributed. One outlier of income, which was over three standard deviations greater than mean, was recoded as the next highest income. Liquid asset was log-transformed. The recoding and log-transformation achieved approximate normal distribution of income and liquid asset variables. Residual plots were examined to check linearity and homoscedasticity assumptions, and no serious problem was found. Multicollinearity was not a serious problem for this study because tolerance ranged from 0.41 to 0.96 and the variance inflation factor (VIF) ranged from 1.04 to 2.41.

Analyses of homeownership and each home search activity at Wave 2 and 3 were conducted using binary logistic regression because the dependent variables were

dichotomous. Linearity between independent variables and a dependent variable does not require logistic regression; however, logistic regression assumes linearity between log odds of an independent variable and a dependent variable. Although logistic regression does not require normality of predictor variables (Pedhazur 1997), it can be sensitive to extreme outliers (Mertler and Vannatta 2002). In logistic regression models, VIF over 2.5 may be a cause of concern (Allison 1999); however, the VIF of independent variables in this study were lower than the criteria.

For mediation analysis, a series of logistic regressions were conducted. The models tested in this study are given below. For the purpose of simplification, covariates were not included in the following denotations.

(1) $Y = \beta_{0(1)} + cX + \varepsilon$

(2) $Y = \beta_{0(2)} + c'X + bM + \varepsilon$

(3) $M = \beta_{0(3)} + aX + \varepsilon$

Equation 1 is a reduced model that estimates the effect of IDA treatment (X) on the outcome homeownership at Wave 3 (Y). The c coefficient represents the total effect of IDA participation on homeownership at Wave 3. Equation 2 is a full model that estimates the simultaneous effect of IDA treatment (X) and the mediator M (i.e., home-search activities at Wave 2) on outcome Y (i.e., homeownership at Wave 3). The coefficient c' represents the effect of IDA participation on homeownership at Wave 3 removing the effect of home-search activities at Wave 2. The coefficient b represents the effect of home-search activities at Wave 2 on homeownership at Wave 3. Equation 3 estimates the effect of IDA treatment (X) on the mediator M (home-search activities at Wave 2). The coefficient a represents the effect of IDA participation on home-search activities at Wave 2. Figure 1 presents a graphic of a mediation model.
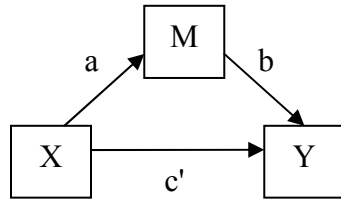
Figure1. Mediation Model

Mediated effect of X on Y through M is $Bab = Ba * Bb$, and the significance level of the mediation effect can be obtained using first-order Taylor series expansion as follows (Krull and MacKinnon 1999):

$$SE_{ab} = \sqrt{a^2 SE_b^2 + b^2 SE_a^2}$$

Results

Descriptive Statistics

Table 1 presents descriptive statistics of the sample used in this study. The majority of respondents (82 percent) were female. The sample was comprised of 46 percent African Americans, 43 percent European Americans, 2 percent Hispanic/Latinos, 1 percent Asians, 6 percent Native Americans, and 3 percent other race/ethnicity as indicated by respondents. For simplicity, race/ethnicity was divided into African American (46 percent) and other racial groups (54 percent) in this study. Twenty-three percent of respondents were married, 46 percent were never-married single, and 31 percent were divorced or widowed. In terms of the highest education level attained by respondents, 4 percent did not finish high school, 27 percent graduated from high school, 43 percent had some college education, 15 percent graduated from a two year-year college, and 11 percent had a four-year college education or more. For the purposes of this study, responses indicating the highest level of education attained were divided into high school graduation or less (31 percent) and some college or more (69 percent). Among all respondents at Wave 2 and Wave 3, 44 percent had used public assistance at

some point during their lives. In terms of change in household composition, 43 percent of respondents experienced a change in the number of adults in the household at Wave 2 and 3; 36 percent of respondents reported changes in the number of children in the household at Wave 2 and 3.

Age of respondents ranged from 18 to 72 years with a mean age of 35 years. The average monthly income was $1,402 (range from $0 to $3,900), and the average liquid asset holding was $606 (range from $0 to $15,100). There were an average of 0.46 adults other than the respondents in the household or 1.46 adults in total, and the mean number of children was 1.70. Skewness (5.47) and kurtosis (45.58) of the liquid asset variable indicated extreme non-normality of the variable because absolute value of skewness greater than three and absolute value of kurtosis greater than twenty are indicative of extreme non-normality (Kline 2005). Therefore, the liquid asset data were log-transformed to achieve more normal distribution and log liquid asset ranged from -4.61 to 3.91 and had skewness (-0.76) and kurtosis (-0.22) closer to zero. After log transformation of liquid asset, continuous variables (or interval variables) of this study did not have extreme non-normality: skewness ranged from -0.76 to 1.50 and kurtosis ranged from -0.22 to 2.28. Among dichotomous variables, none of the variables had less than 10 percent of 1 or 0.

None of the participants from the sample subset used for the present study were homeowners at the baseline; however, homeownership had increased at wave 2 and wave 3. Seventeen percent of respondents became homeowners at wave 2 and 31 percent of respondents became homeowners at wave 3. Index of home search activities ranged from 0 to 6 and the average was 2.16 at wave 2 and 2.51 at wave 3.

The current study examined sample imbalance between the treatment group and control groups using chi-square tests and t-tests. Random assignment and attrition resulted in some degree of sample imbalance. The treatment group had a higher income at baseline (t = 2.32, df=623, p = .02), and fewer never-married singles at baseline (Chi-

square = 7.87, df=1, p < .01); however, the treatment and control groups were not different on any other measures at baseline.

[Insert Table 1]

Homeownership

Table 2 shows the effect of the treatment on homeownership at wave 2 and wave 3. Binary logistic regression revealed that participation in IDA treatment did not significantly increase homeownership at Wave 2. Among covariates, marital status, income, and receipt of public assistance showed significant association with being a homeowner at Wave 2. Controlling for other variables, never-married singles had 56 percent lower odds of being homeowners at Wave 2 (OR = 0.44, 0.23-0.87) than married people. Other things being equal, one unit increase in income increased odds of being a home owner at Wave 2 by a 1.05 factor (OR = 1.05, 1.02-1.09) and recipients of public assistance had a 68 percent lower odds of being a homeowner at Wave 2 (OR = 0.32, 0.18-0.57).

Logistic regression analyses of homeownership at Wave 3 showed that the treatment group had 1.53 times greater odds of being a homeowner at Wave 3 than the control group (OR = 1.53, 1.02-2.28). Among covariates, race, marital status, log liquid asset, public assistance, and change in number of children had significant associations with homeownership at Wave 3. When other things were held equal, African Americans had 56 percent lower odds of being a homeowner (OR = 0.44, 0.28-0.69) as compared to other racial groups; recipients of public assistance at baseline at Wave 2 or 3 had 66 percent lower odds (OR = 0.34, 0.22-0.52) than non-recipients; never-married singles had 47 percent lower odds (OR = 0.53, 0.30-0.92) than married people; and divorced/widowed people at baseline had 57 percent lower odds (OR = 0.43, 0.24-0.78) than married people. Holding all other variables constant, a unit increase in the log liquid assets increased the odds of being a home owner at Wave 3 by 1.12 times (OR=1.12, 1.02-1.23). Other things being equal, participants with a change in number of children in

the household had 1.91 times greater odds of being a homeowner (OR=1.91, 1.23-2.95). Figure 2 provides a graphic representation of the finding that a higher percentage of participants in the treatment group became homeowners compared with the control group at wave 3. There was no difference between the groups at wave 2.

[Insert Table 2]

[Insert Figure 2]

Home Search Activities

Table 3 shows the effect of IDA participation on home search activities at wave 2 and wave 3. Chi-square statistics showed that the treatment and control groups differed on the home search activity, *clear-up old debts* at Wave 2 (chi-square = 9.18, df = 1, $p \leq$ .01); however, the groups did not differ on any other home-search activity or index of home-search activities at Wave 2. Figure 3 shows the consistent result that the treatment group had a higher percentage of affirmative responses on the *clear up of old debts* at Wave 2.

[Insert Table 3]

[Insert Figure 3]

A series of logistic regressions of home-search activities showed similar results for this same variable. At Wave 2, the IDA treatment presented a significant effect only on the variable *clear up old debts* ($p \leq$ .01) among all six of the home-search activities measured. Holding all other variables constant, the treatment group had 1.82 times greater odds (1.19-2.80) of being engaged in the activity, clearing up old debts, at Wave 2 than the control group. However, the OLS regression result showed that the treatment did not have a significant effect on the index of home-search activities (number of home-search activities that participants engaged) at Wave 2. R^2 of OLS regressions and Pseudo R^2 of logistic regressions ranged from 0.23 to 0.08.

Chi-square statistics for home-search activities at Wave 3 showed that the treatment group and the control group differed on three variables: *drive around to look*

at houses for sale (chi-square = 3.71, df = 1, $p \leq .05$); *attend an open house* (chi-square = 3.88, df = 1, $p \leq .05$); and *clear up old debts* (chi-square = 4.63, df = 1, $p \leq .05$). T-test results for the index of home-search activities showed that the treatment group engaged in significantly more home-search activities ($p \leq .05$) than the control group. Figure 4 presents consistent results that the treatment group generally engaged in more home-search activities.

[Insert Figure 4]

A series of logistic regressions for home-search activities at Wave 3 produced different results. Holding all other variables constant, the IDA treatment demonstrated a marginally significant effect on the variable for *attending an open house* (OR = 1.57, 0.94-2.63, $p \leq .10$), and showed no differences for all other individual home-search activities. However, the index of home-search activities showed that treatment group participants displayed significantly more home-search activities ($p \leq .05$). The treatment group participated in 0.40 more home-search activities at Wave 3 than the control group. R^2 of OLS regressions and Pseudo R^2 of logistic regressions range from 0.29 to 0.12.

Mediation

As previously mentioned, participants who became homeowners prior to Wave 2 were excluded from questions concerning home-search activities. Therefore, to estimate the mediation effect of *clear up debts* at Wave 2, the sample was limited to those who were renters at Wave 2 and who reported home-search activities (N = 453). It was hypothesized that the effect of the IDA treatment on homeownership at Wave 3 would be mediated through home-search activities at Wave 2. Because the IDA treatment had a significant effect on *clear-up debts* at Wave 2, the mediation effect of treatment through this activity was examined. Figure 5 provides a graphic for the mediation.

ßa (the log odds of treatment on clear up debts at Wave 2) was 0.60 (SE = 0.22) and was obtained from the model of clear up debts. Exponential ßa showed that treatment group had 1.82 times greater odds of engaging clear up debts at Wave 2 (OR = 1.82,

1.19-2.80). ßb (the log odds of clear-up debts at Wave 2 on homeownership at Wave 3) was 1.04 (SE = 0.27) and it was obtained from the full model (a model including the mediator) of homeownership at Wave 3. Exponential ßb showed that participants who engaged clear up debts at Wave 2 had 2.81 times greater odds of being homeowners at Wave 3 (OR = 2.82, 1.65-4.81).

Mediation effect (ßab) was obtained from the product term of ßa and ßb ($\beta ab = \beta a \times \beta b$) and standard error of the mediation effect (SEab) was obtained from first-order Taylor series expansion ($SEab = \sqrt{a^2 SE_b{}^2 + b^2 SE_a{}^2}$; Sobel 1982 as cited in Krull and MacKinnon 1999). The mediation effect (ßab) was .62 and standard error of the mediation effect was .28. The critical ratio of the mediation effect was 2.22 and it was statistically significant at the .05 level. Thus, the effect of the IDA treatment on homeownership at Wave 3 was significantly mediated by clearing old debts at Wave 2 (one of home-search activities).
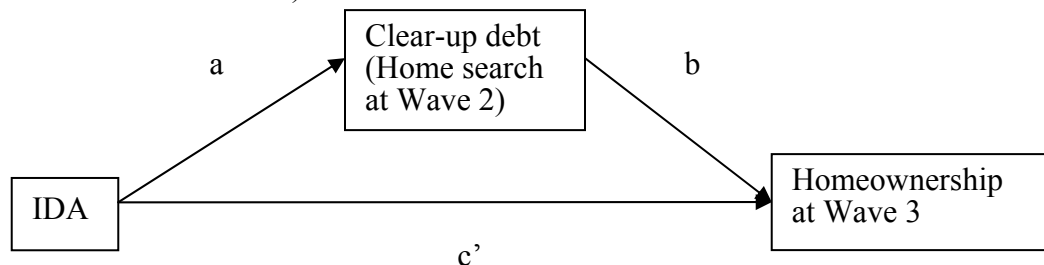
Figure 5. Mediation model

The change in log odds in Table 4 also illustrated the mediation effect. The effect of treatment on homeownership at Wave 3 was significant at .05 level (OR= 1.82, 1.10-3.01) in the model without mediator (Reduced model). However, the treatment became non-significant at .05 level (OR= 1.64, 0.97-2.76) when the mediator (clear-up debts at Wave 2) was included in the model (Full model), and this showed that the effect of treatment (IDA) on homeownership at Wave 3 was mediated by clear-up debt at Wave 2.

Although the IDA treatment did not have a significant effect on other home-search activities at Wave 2, the mediation effects of the treatment through other home-search activities were also examined. None of these mediation effects was significant at the .05 level.

[Insert Table 4]

Limitations

It is important to note two limitations of this study. First, the match rate provided greater incentives for treatment participants to purchase a home during the four-year study period. Specifically, treatment participants may have accelerated their home purchase because purchasing a home within the study period resulted in a 2:1 match rate for their savings. However, participants who did not purchase a home during the program and rolled their savings into Roth IRA accounts received a 1:1 match rate (Mills et al. 2006). In addition, the control group members agreed to abstain from participating in any homeownership programs offered at the community agency that administered the IDA, and thus, they received no incentives or any type of facilitation for home purchase through the agency during the study period.

Second, participants in IDA programs included in ADD do not represent a random sample of people eligible for IDA programs. The ADD participants were both program-selected, because of eligibility criteria, and self-selected, because they volunteered to participate in the program (Schreiner et al. 2001). Therefore, the results generated in this study may not adequately represent how the overall low-income population outside ADD will perform in IDA programs.

Discussion

Assisting low-income families to save for a home through IDAs by providing support, incentives, and financial education represents an important strategy for social and economic development that may help to reduce the homeownership gap. This study examined the effect of IDA program participation on homeownership among low-income

participants using data from the American Dream Demonstration (ADD), a four-year demonstration project (1998 to 2002) to test the effectiveness of IDAs as a social and economic development strategy. In addition to data collected at baseline, follow-up interviews were conducted at 18 months (Wave 2), and at 48 months, which coincided with the end of the program (Wave 3). Overall, the results of this study indicate that participating in an IDA program leads to increased homeownership rates after 48 months (at Wave 3). Statistical analysis indicated that this effect is mediated by a specific home-search activity: clearing old debt to prepare for applying for a home loan.

IDAs: A Tool for Low-Income Families to Achieve Homeownership

Consistent with other research, this study found that IDAs were effective in helping low-income families save for a home (Grinstein-Weiss 2004; Mills et al. 2006; Schreiner and Sherraden 2007). Results from this randomized experiment indicated that IDA participation significantly increased homeownership rates at 48 months. Furthermore, this study indicates that the road to homeownership takes time, and, as expected, analysis of the homeownership rates at 18 months of program participation (Wave 2) found that no significant difference existed between the homeownership rates of the IDA treatment and control groups.

Home-Search Activities: The Road to Homeownership

A first-time home purchase can be overwhelming for anyone because it requires a level of sophisticated financial knowledge and a substantial time commitment. Because low-income homebuyers often face additional challenges to home purchase, IDA programs are designed to provide participants with support, incentives, and information that facilitate saving for a home. A critical element of the IDA program is the requirement for participants to attend financial education classes that address topics such as how to look for a house, how to shop in the real estate market, and how to work with real estate agents and loan officers.

We hypothesized that participating in home-search activities would be the first step toward buying a home for low-income IDA participants in addition to starting to make savings deposits. Specifically, participants were asked about the following home-search activities: reviewing home listings, looking at houses, attending open houses, talking with a realtor, borrowing money, and clearing up debt. We further hypothesized that we would see lower home-search activity rates and home purchase rates at Wave 2 than Wave 3 because the Wave 2 interviews took place when participants had just 18 months of program experience. Moreover, because the program used a rolling admission process, at Wave 2 some participants had substantially fewer months of program participation and some would still be participating in financial education.

We found that at Wave 2 (i.e., maximum of 18 months of participation), clearing old debt was the only home-search activity for which the control and experiment groups differed. IDA participants were significantly more engaged in clearing old debts in preparation for applying for a home loan, than were the control group. The other home-search activities were comparable for the two groups at Wave 2. This finding was not surprising, and somewhat expected, because IDA programs, like other homebuyer programs, typically focus on clearing debt as an initial step in preparation for buying a home. At Wave 3 (i.e., maximum of 48 months of program participation), treatment participants were significantly more engaged in multiple home-search activities measured by the home-search index variable.

Clearing Up Debt: A Mediator of IDA Participation on Homeownership

Results obtained from additional analyses suggested that clearing debt mediated the effect of the IDA program on homeownership. In other words, being engaged in clearing old debt at Wave 2 contributed to the effect of the IDA program on achieving homeownership at Wave 3. Clearing old debt at Wave 2 was the only home search activity that was expected as a potential mediator because, as previously noted, this was the only home-search activity participants were significantly engaged in at Wave 2. It is

logical that efforts toward clearing debt would be a critical part of the home buying process because the average debt of low-income families has increased dramatically in recent years although most of these families have few liquid assets (Wagmiller 2003).

Conclusion

Findings from this study demonstrate that IDAs are an effective tool for fostering homeownership among low-income individuals and families. The positive benefits of homeownership for low-income individuals, families, and communities have been well established, and therefore IDA programs may be particularly relevant as a strategy to assist families in moving out of poverty by facilitating asset accumulation. In addition to assisting participants in saving towards a home, IDA programs provide access to financial services, support, and incentives that foster the development of long-term savings habits, and financial education that participants may utilize throughout their lives.

In addition to providing evidence that IDAs can support low-income families in saving and purchasing a home, this study shows that the process that families go through to achieve homeownership takes time. Although treatment participants were actively engaged in clearing old debt after 18 months in the IDA program, they were not participating in other home-search activities such as attending open houses or making inquiries about securing home loans. However, by the end of the program, at 48 months, the IDA treatment participants were engaged in multiple home-search activities and were more likely to have purchased a home than were the participants in the control group. Although purchasing a home is not a quick and easy process for low-income families, IDA programs in this study provided a variety of services to families over time that supported them in their path to homeownership. Programs and policies aimed at increasing homeownership rates among low-income families should not only be aware of the challenges these families face but also of the substantial time the process may require.

The findings regarding the relationship between clearing debt and home purchase for low-income families are important as well because debt has dramatically increased among low-income families in recent years. Poor families are in an increasingly precarious position because their debt levels have increased and they have very few assets to draw on during a financial crisis such as natural disasters or a long-term illness (Wagmiller 2003). It is clear that debt is a significant barrier to homeownership for many low-income families and that clearing debt is a critical part in the home buying process. This study showed that being actively engaged in clearing debt at Wave 2 contributed to owning a home at Wave 3. Additional studies should further examine how low-income families are addressing their debt and which interventions are most effective in assisting these families in their efforts toward debt reduction. Furthermore, debt reduction should be an integral strategy in future policies and programs aimed at fostering homeownership among low-income families.

Asset accumulation is an important strategy aimed at providing low-income households with social and economic development opportunities that will assist them in moving out of poverty. Owning a home and other assets provide stability and important resources that serve as buffers and support for families in times of need. Additional research and policy development is needed to explore how to make IDA programs and other programs available to greater numbers of low-income families seeking to achieve the American Dream of homeownership. In addition, research should continue to explore the long-term effect of IDA participation by following up with IDA graduates after program completion. Because homeownership may take a few years to achieve, we may see even higher rates of homeownership several years after the program has ended. In addition, it will be important to determine whether IDA graduates are able to maintain and sustain homeownership. Finally, future studies should also explore the long-term social, psychological, and economic benefits of homeownership for IDA graduates.

Table1. Descriptive statistics of variables

Independent variables	N	Mean	SD	Range	Skewness	Kurtosis
Age at baseline	641	34.88	9.84	18-72	0.68	0.31
N of Other Adults (18 years or older)	642	0.46	0.68	0-4	1.50	2.28
N of Children (17 years or younger)	642	1.70	1.32	0-7	0.62	0.34
Income/100	625	14.02	6.88	0-39	0.92	1.30
Liquid asset/100	627	6.06	12.13	0-151	5.47	45.58
Log liquid asset/100	627	0.18	2.34	-4.61-3.91	-0.76	-0.22
Index of home search at wave 2	480	2.16	1.98	0-6	0.51	-1.01
Index of home search at wave 3	441	2.51	2.06	0-6	0.27	-1.25
Treatment	642	0.51		0-1		
Gender: female	642	0.82		0-1		
Race/ethnicity						
African American	635	0.46		0-1		
European American and others	635	0.54		0-1		
Marital						
Married	642	0.23		0-1		
Single	642	0.46		0-1		
Divorced/Widowed/Separated	642	0.31		0-1		
Education						
High school graduation or less		0.31		0-1		
Some college or more		0.69		0-1		
Public Assistance	596	0.44		0-1		
Change in household composition						
Change in N of Adults	603	0.43		0-1		
Change in N of Children	597	0.36		0-1		

Skewness and kurtosis are set to '0' for normal distribution in SPSS

Table 2. Homeownership at wave2 (N = 545) and wave3 (N=549)

	B	Wald	OR	B	Wald	OR
Coefficient						
Treatment	-0.14	0.32	0.87 (0.53-1.42)	0.42	4.20*	1.53 (1.02-2.28)
African American	-0.27	0.92	0.77 (0.45-1.32)	-0.81	12.80**	0.44 (0.28-0.69)
Age: 25 or less	0.83	2.43	2.30 (0.81-6.56)	-0.13	0.11	0.88 (0.40-1.90)
Age: 26 - 45	0.74	2.58	2.10 (0.85-5.19)	0.16	0.25	1.18 (0.62-2.23)
Single	-0.82	5.60*	0.44 (0.23-0.87)	-0.64	5.14*	0.53 (0.30-0.92)
Divorced/Widowed	-0.07	0.04	0.93 (0.48-1.82)	-0.84	7.91**	0.43 (0.24-0.78)
N of Adults	0.23	1.45	1.26 (0.87-1.82)	-0.15	0.72	0.86 (0.62-1.21)
N of Children	0.07	0.36	1.07 (0.86-1.32)	0.08	0.84	1.09 (0.91-1.30)
High school or less	0.15	0.31**	1.17 (0.68-2.00)	0.06	0.08	1.07 (0.69-1.65)
Income	0.05	8.38	1.05 (1.02-1.09)	0.03	2.7	1.03 (1.00-1.06)
Log liquid asset	0.03	0.26	1.03 (0.92-1.16)	0.11	5.60*	1.12 (1.02-1.23)
Public assistance	-1.14	14.75**	0.32 (0.18-0.57)	-1.09	23.46**	0.34 (0.22-0.52)
Change in N of Adults	-0.05	0.03	0.96 (0.57-1.61)	-0.25	1.25	0.78 (0.51-1.20)
Change in N of Children	0.5	3.61	1.66 (0.98-2.79)	0.65	8.39**	1.91 (1.23-2.95)
-2 Log likelihood	427.32			597.86		
Cox & Snell R^2	0.11			0.14		
Negelkerke R^2	0.19			0.2		

* $p \leq .05$, ** $p \leq .01$, 95% confidence interval of Odds Ratios in parenthesis

Table 3. The effect of treatment on Home search activities at wave2 (N =453) and wave3 (N = 377)

				Dependent variables				
		News	Drive	Open	Realtor	Bank	Debt	Index
Wave2	Treatment							
	B	0.01	-0.20	-0.36	-0.19	-0.11	0.60	-0.03
	SE	0.20	0.21	0.27	0.21	0.22	0.22	0.17
	Wald	0.00	0.86	1.86	0.86	0.22	7.54	
	P value	0.97	0.35	0.17	0.36	0.64	0.01	0.85
	Odds Ratio	1.01	0.82	0.69	0.82	0.90	1.82	
		(0.68-1.50)	(0.54-1.25)	(0.41-1.17)	(0.54-1.24)	(0.58-1.39)	(1.19-2.80)	
	-2 Log likelihood	580.29	542.68	377.10	551.45	500.36	522.22	
	Cox & Snell R2/R2	0.10	0.17	0.08	0.13	0.08	0.13	0.23
	Negelkerke R2/Adjusted R2	0.13	0.23	0.14	0.17	0.12	0.19	0.20
Wave3	Treatment							
	B	0.20	0.37	0.45	0.36	0.39	0.30	0.40
	SE	0.23	0.23	0.26	0.24	0.26	0.24	0.19
	Wald	0.72	2.46	2.94	2.33	2.30	1.57	
	P value	0.40	0.12	0.09	0.13	0.13	0.21	0.03
	Odds Ratio	1.22	1.45	1.57	1.44	1.48	1.34	
		(0.77-1.91)	(0.91-2.29)	(0.94-2.63)	(0.90-2.29)	(0.89-2.44)	(0.85-2.13)	
	-2 Log likelihood	458.62	446.65	372.92	435.96	383.12	437.76	
	Cox & Snell R2/R2	0.14	0.16	0.16	0.18	0.16	0.12	0.29
	Negelkerke R2/Adjusted R2	0.18	0.22	0.23	0.25	0.23	0.16	0.26

95% confidence interval of Odds Ratios in parenthesis

Table 4. Change in log odds (N = 453)

Coefficient	Reduced model (without mediator)			Full model (with mediator)		
	B	Wald	OR	B	Wald	OR
Clear-up debts at wave1	0.18	0.4	1.19 (0.69-2.06)	-0.1	0.12	0.90 (0.51-1.61)
Clear-up debts at wave2				1.04	14.42**	2.82 (1.65-4.81)
Treatment	0.6	5.35*	1.82 (1.10-3.01)	0.49	3.46	1.64 (0.97-2.76)
African American	-1	11.84**	0.37 (0.22-0.65)	-1.07	12.88**	0.34 (0.19-0.62)
Age: 25 or less	-0.66	1.85	0.52 (0.20-1.34)	-0.61	1.55	0.54 (0.21-1.42)
Age: 26 - 45	-0.18	0.23	0.83 (0.39-1.76)	-0.16	0.18	0.85 (0.40-1.82)
Single	-0.38	1.14	0.69 (0.34-1.37)	-0.42	1.32	0.66 (0.32-1.34)
Divorced/Widowed	-1.08	7.58**	0.34 (0.16-0.73)	-1.08	7.36**	0.34 0.16-0.74)
N of Adults	-0.48	3.87*	0.62 (0.38-1.00)	-0.51	4.07*	0.60 (0.37-0.99)
N of Children	0.1	0.77	1.10 (0.88-1.38)	0.11	0.85	1.11 (0.89-1.40)
High school or less	-0.01	0	0.99 (0.57-1.72)	0.11	0.15	1.12 (0.63-1.97)
Income	0.02	1.07	1.02 (0.98-1.06)	0.01	0.38	1.01 (0.97-1.05)
Log liquid asset	0.16	6.48**	1.17 (1.04-1.32)	0.16	6.19**	1.17 (1.03-1.32
Public assistance	-0.69	6.43**	0.50 (0.30-0.86)	-0.6	4.72*	0.55 (0.32-0.94
Change in N of Adults	-0.07	0.07	0.93 (0.55-1.59)	-0.07	0.07	0.93 (0.54-1.60)
Change in N of Children	0.74	7.14**	2.09 (1.22-3.60)	0.78	7.70**	2.19 (1.26-3.82)
-2 Log likelihood	409.98			395.31		
Cox & Snell R2/R2	0.11			0.14		
Negelkerke R2/Adjusted R2	0.17			0.21		

* p≤ .05, ** p≤ .01, 95% confidence interval of Odds Ratios in parenthesis

Figure 2

Figure 3

Figure 4

Home Search Activities at Wave3

A bar chart comparing Control and Treatment groups across Home Search Activities, with % of Affirmative Response on the y-axis (0 to 70).
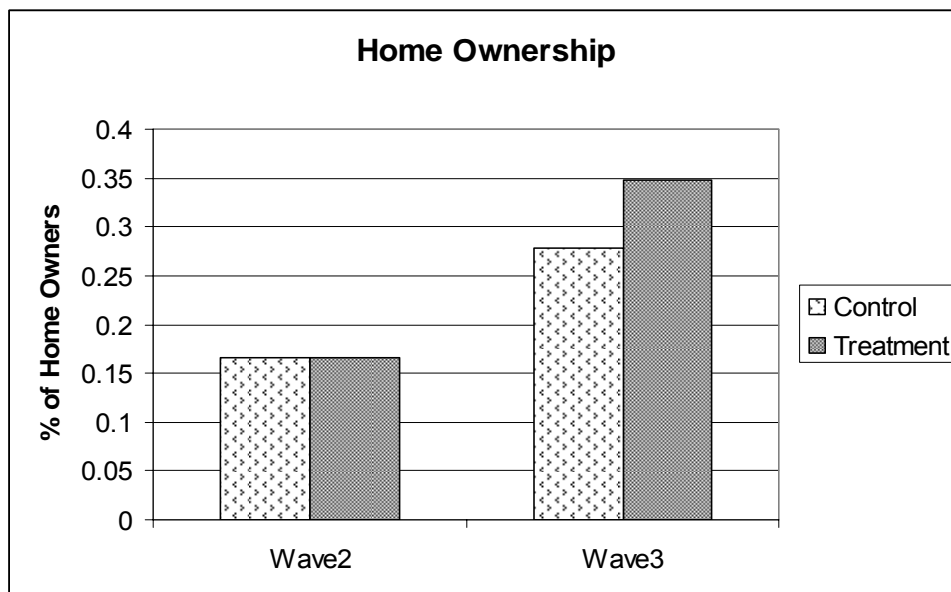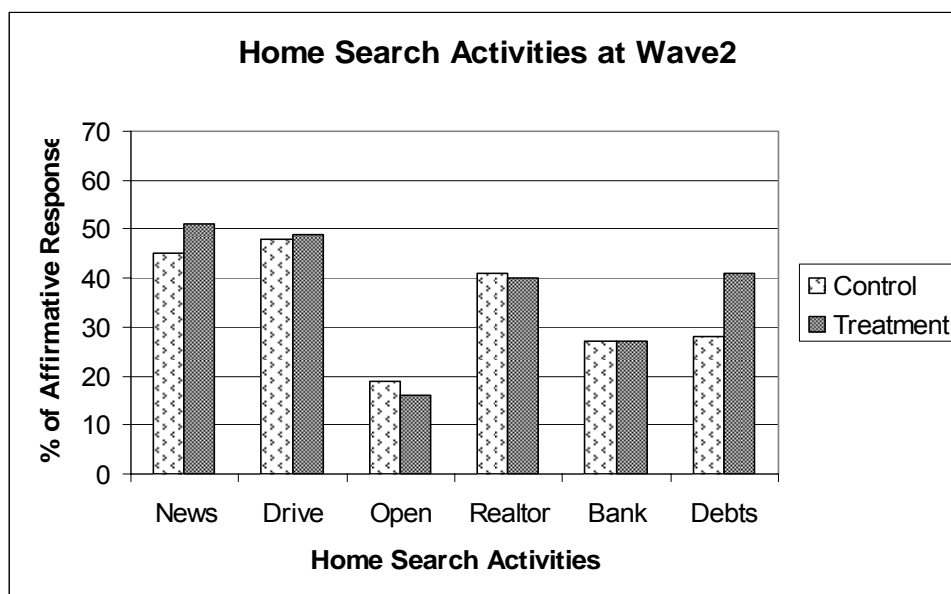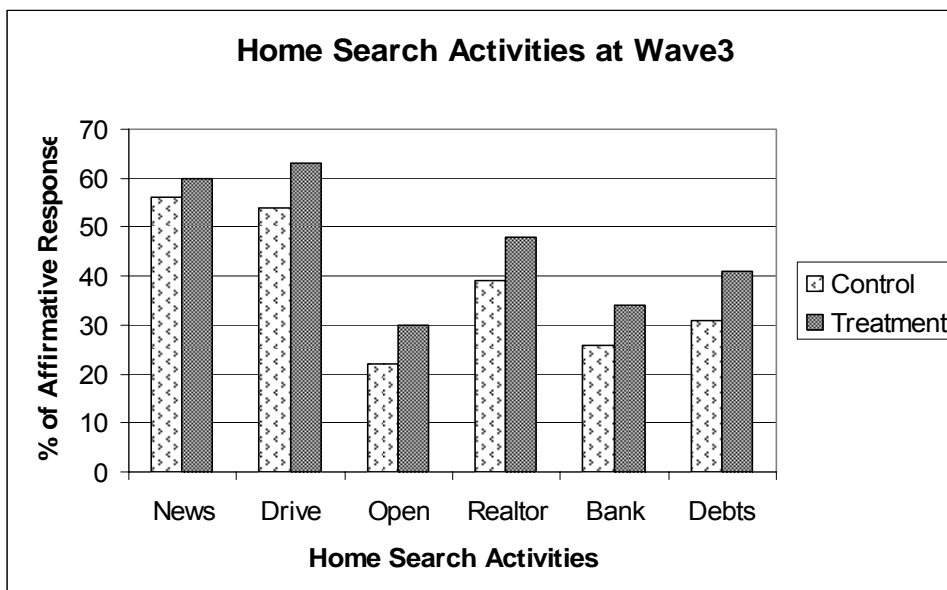
References

Allison, David Paul. 1999. Logistic regression using the SAS system.: SAS Institute.

Barakova, Irina, Raphael W. Bostic, Paul S. Calem, and Susan M. Wachter. 2003. Does credit quality matter for homeownership? *Journal of Housing Economics* 12:318-336.

Collins, J Michael. 2004. Expanding the American dream: A homeownership guide for grantmakers. Washington, DC: Neighborhood Funders Group.

Collins, Michael, David Crowe, and Michael Carliner. 2001. Examining supply-side constraints to low-income homeownership. Boston, MA: Joint Center for Housing Studies, Harvard University.

Deitz, Robert D. 2003. The social consequences of homeownership. Columbus, OH: Center for Urban and Regional Analysis, Ohio State University.

Di, Zhu Xiao, and Xiaodong Liu. 2004. The importance of wealth and income in the transition to homeownership. Cambridge, MA: Abt Associates Inc.

Di, Zhu Xiao, Yi Yang, and Xiaodong Liu. 2003. The importance of housing to the accumulation of household net wealth. Cambridge, MA: Abt Associates.

DiPasquale, Denise, and Edward Glaeser. 1999. Incentives and social capital: Are homeowners better citizens? *Journal of Urban Economics* 45 (2):354-385.

Fannie Mae Foundation. 2003. Understanding America's homeownership gaps: 2003 Fannie Mae National Housing Survey. Washington, DC: Fannie Mae.

Fellowes, Matt. 2006. Credit scores, reports, and getting ahead in America. Washington, DC: The Brookings Institution.

Green, Richard K, and Michelle J White. 1997. Measuring the benefits of homeowning:

    Effects on children. *Journal of Urban Economics* 41:441-461.

Grinstein-Weiss, Michal. 2004. IDAs for housing policy: Analysis of saving outcomes

    and racial differences. dissertation, Social Work, Washington University, St.

    Louis.

Harkness, Joseph, and Sandra Newman. 2002. Homeownership for the poor in distressed

    neighborhoods: Does this make sense? *Housing Policy Debate* 13 (3):597-630.

Haurin, Donald R., Toby L. Parcel, and R. Jean Haurin. 2002. Does homeownership

    affect child outcomes? *Real Estate Economics* 30 (4):635-666.

Herbert, Christopher E., and Eric S. Belsky. 2006. The homeownership experience of

    low-income and minority families: A review and synthesis of the literature.

    Washington, DC: U.S. Department of Housing and Urban Development.

Herbert, Christopher E., Donald R. Haurin, Stuart S. Rosenthal, and Mark Duda. 2005.

    Homeownership gaps among low-income and minority borrowers and

    neighborhoods. Washington, DC: U.S. Department of Housing and Urban

    Development.

Herbert, Christopher E., and Winnie Tsen. 2005. The potential of downpayment

    assistance for increasing homeownership among minority and low-income

    households. Washington, DC: U.S. Department of Housing and Urban

    Development.

Kline, Rex B. 2005. *Principles and practice of structural equation modeling (2nd ed.).*

    New York, NY: Guilford.

Krull, Jennifer L., and David P. MacKinnon. 1999. Multilevel mediation modeling in group-based intervention studies. *Evaluation Review* 23 (4):418-444.

Mertler, Craig A, and Rachel A Vannatta. 2002. *Advanced and multivariate statistical methods*. Glendale, CA: Pyrczak Publishing.

Mills, Gregory, William G Gale, Rhiannon Patterson, and Emil Apostolov. 2006. What do Individual Development Accounts do? Evidence from a controlled experiment. Washington, DC: The Brookings Institution.

Pedhazur, Elazer J. 1997. *Multiple regression in behavioral research (3rd ed.)*. Belmont, CA: Wadsworth.

Ratner, Mitchell S. 1996. Many routes to homeownership: A four-site ethnographic study of minority and immigrant experiences. *Housing Policy Debate* 7 (1):103-145.

Reid, Carolina Katz. 2004. Achieving the American Dream? A longitudinal analysis of the homeownership experience of low-income households: Center for Studies in Demography and Ecology.

Rohe, William M, and Victoria Basolo. 1997. Long term effects of homeownership on the self perceptions and social interaction of low-Income persons. *Environment and Behavior* 29 (6):794-820.

Rohe, William M., and Leslie S. Stewart. 1996. Homeownership and neighborhood stability. *Housing Policy Debate* 7 (1):37-81.

Rossi, Peter H, and Eleanor Weber. 1996. The social benefits of homeownership: Empirical evidence from National Surveys. *Housing Policy Debate* 7 (1):1-35.

Santiago, Anna M., and George C. Galster. 2004. Moving from public housing to

homeownership: Perceived barriers to program participation and success. *Journal*

of Urban Affairs 26 (3):297-324.

Scanlon, Edward, and Deborah Page-Adams. 2001. Effects of asset holding on

neighborhoods, families, and children: A review of research. In *Building assets*,

edited by R. Boshara. Washington D.C.: Corporation for Enterprise Development.

Schreiner, Mark, Margaret Clancy, and Michael Sherraden. 2002. Final Report: Saving

Performance in the American Dream Demonstration, A National Demonstration

of Individual Development Accounts. St. Louis, MO: Washington University in

St. Louis, Center for Social Development.

Schreiner, Mark, and Michael Sherraden. 2007. *Can the poor save? Saving and asset*

building in Individual Development Accounts. New Brunswick, NJ: Transaction

Publishers.

Schreiner, Mark, Michael Sherraden, Margaret Clancy, Lissa Johnson, Jami Curley,

Michal Grinstein-Weiss, Min Zhan, and Sondra Beverly. 2001. Savings and asset

accumulation in IDAs: Downpayments on the American Dream Policy

Demonstration, a national demonstration of Individual Development Accounts.

St. Louis, MO: Washington University in St. Louis, Center for Social

Development.

Social & Enterprise Development Innovations. 2003. Study of Individual Development

Accounts for housing - A national demonstration project. Canada: Canada

Mortgage and Housing Corporation and the National Secretariat on

Homelessness.

Wagmiller, Robert. 2003. Debt and assets among low-income families. New York, NY:

National Center for Children in Poverty.

Walter, John R. 1995. The Fair Lending Laws and their enforcement. *Economic

Quarterly* 81 (4):61-77.

Williams, Richard, Reynold Nesiba, and Eileen Diaz McConnell. 2005. The changing

face of inequality in home mortgage lending. *Social Problems* 52 (2):181-208.