Saving for Success: Financial Education and Savings Goal Achievement in Individual Development Accounts

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Using microdata from the American Dream Demonstration, the current study examines factors associated with savings and savings goal achievement (indicated by a matched withdrawal) among participants of individual development account (IDA) programs. Multinomial logit results show that hours of participation in financial education programs, higher matched caps, prior use of a savings account, and greater educational attainment are each associated with a greater likelihood of savings and savings goal achievement. IDA programs need to maximize available resources, particularly financial education, to assist participants in achieving savings goals.

Key Words: financial education, IDAs, low-income, savings

Introduction

"Most people who leave poverty—or to use another vocabulary, most people who develop economically—do so because they save and invest in themselves, in their children, in property, in securities, or in enterprise to improve their circumstances" (Sherraden, 2000, p. 162). To promote savings among low-income individuals, policymakers are increasingly promoting the use of Individual Development Accounts (IDAs). Through IDAs, low-income individuals are given access to savings accounts in which they can save for development purposes such as investments in education, purchase of a home, or opening or expansion of a small business. IDA programs are part of an asset-based, anti-poverty policy that focuses on building the wealth of low-income households, in contrast to income transfer programs (Sherraden, 1991). The most direct benefit of IDAs to savers comes from the savings subsidy provided by private or government agencies. The subsidy rate may be as high as four times the original participant deposit. However, these matched funds are provided to the saver only at the time of an approved withdrawal. If a participant fails to make a withdrawal for a development purpose or withdraws funds from his or her IDA for expenses or purchases other than an approved purpose, matched funds are not provided. Therefore, the program provides incentives for low-income individuals to save enough money within the time frame of the IDA program to make a matched withdrawal for a specific development purchase.

In addition to the provision of matching funds, IDA programs also attempt to increase low-income individuals' asset accumulation by providing financial education. Education is a major component of IDA programs, as financial literacy classes are required for all participants. However, IDA programs are administered at the local level and vary in enforcement of program rules and educational class hour requirements. Participants also vary by program, as each site chooses its own target audience. Common participants include Temporary Assistance for Needy Families (TANF) participants, former TANF participants, and the working poor. By promoting the building of assets, policymakers hope that IDAs will enhance long-term economic well-being of low-income workers.

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More than 500 IDA programs exist throughout the United States (Center for Social Development, 2011) with over 65,000 accounts (Results, 2009). IDA programs are supported at the federal level under the Assets for Independence Act (AFIA). Also, 35 states, Washington, DC , and Puerto Rico have passed some form of IDA legislation. Thirty states have also included IDA programs in their TANF plans (Center for Social Development, 2011).

The most well-known privately funded IDA program studied in the literature is the American Dream Demonstration (ADD). The ADD started more than 2,400 IDAs at 14 sites across the nation and was the first systematic attempt to measure the effects of IDAs on savings and asset ownership (Abt Associates, 2004; Schreiner et al., 2001).

Abt Associates (2004) conducted an experimental study of an ADD site in Tulsa, Oklahoma. The study found IDA participation increased homeownership rates by 6.2 percentage points. IDA participants also saw an increase in retirement savings relative to the control group ($581). However, the total assets of IDA participants were not significantly different than the total assets of control group members (Abt Associates, 2004). This finding may indicate participants shifted assets from other accounts owned into their IDAs. Taken together, the results of the Abt study suggested that IDA participation can increase the likelihood of achieving particular savings goals.

Other non-experimental studies have attempted to descriptively examine samples of ADD participants (Moore et al., 2001; Schreiner, Clancy, & Sherraden, 2002). Schreiner et al. (2002) found evidence that only a small share of IDA participants actually receive matched withdrawals. Their results suggested just 285 of participants who made a matched withdrawal used their funds for a home purchase. Small business accounted for 23% of the participants' uses for matched withdrawals, post-secondary education for 21%, and home repair, retirement, and job training accounted for 18%, 7%, and 2%, respectively (Schreiner et al., 2002).

While a few studies have shown that IDA programs are effective in encouraging the building of assets (Abt Associates, 2004; Schreiner et al., 2000), little research has examined the factors related to the achievement of savings goals, indicated by a withdrawal for asset purchase and receiving matched funds, among those who participate in IDA programs. The purpose of the current study is to explore the factors related to savings and the achievement of savings goals among IDA participants. Specifically, the role of information is examined: education as a major component of the IDA program, incentives to save, facilitation of saving, access to savings institutions, and demographic and socioeconomic characteristics.

Results from this study are important to policymakers who wish to increase the proportion of IDA program participants who make matched withdrawals. The existing literature suggested that only 32% of participants in IDA programs make matched withdrawals in order to obtain their matching funds (Schreiner et al., 2002). Given that many policymakers wish to achieve a higher success rate, results will provide some descriptive evidence on mechanisms beyond program dropout that might make this possible. Using microdata from the American Dream Demonstration (1997-2001), a multinomial logit model is employed to estimate factors associated with three categories of savers: non-savers, those who did not save and did not complete the IDA program; unmatched savers, those participants who had savings in their accounts at the end of the ADD program, but never made a matched withdrawal for an asset purchase; and matched savers, participants who saved and withdrew their savings for an asset purchase.

Literature Review

Savings occurs when the price of current consumption is higher than future consumption. Individuals save when they predict to receive more benefit from future consumption, such as saving subsides (Bryant & Zick, 2006). When introducing IDAs, Sherraden (1991) suggested evidence that saving is mainly facilitated through institutional factors. The IDA program is an institution in which participants make decisions. Participants choose how much they save, but these choices are made within the bounds of the institution (Neale, 1987). This is a reflection of the institutional economics value theory (Gordon, 1980). Values held by individuals are shaped by the institutions in which they belong. Therefore, to change individuals' values, the institutions in which individuals belong should adopt the desired values. Institutions that value saving will force participants to value saving. When examining individual motives, it is important to remember actions are chosen depending on the context of the IDA program (Neale, 1987). Beverly and Sherraden (1999) found institutional determinants of savings fell into four categories: (a) information (e.g., financial education), (b) incentives to save, (c) facilitation (support) of saving, and (d) access to institutionalized savings mechanisms (e.g., savings accounts).

Information

Beverly and Sherraden (1999) found the majority of Americans lack the financial knowledge and information to make basic economic calculations, particularly low-income households as they have less education, in general, than the rest of the population. IDA programs included financial education classes under the assumption that the extent to which a person understands the process and benefit of saving (and asset accumulation) will affect their willingness to save (Beverly & Sherraden, 1999; Moore et al., 2001). Those who understand the fundamentals and probable outcomes of a savings plan were more likely to develop such a plan. Under these assumptions, financial education will increase savings. Fry, Mihajilo, Russell, and Brooks (2008) found a positive association between financial literacy and education and account balances for a matched savings program in Australia. Zhan, Anderson, and Scott (2006) found financial education to increase financial knowledge using a pre- and post-test survey. IDA classes appeared to have a positive relationship with savings up to a point, then switched to a negative association. Controlling for exit status and length of participation for all participants in the ADD, researchers found financial education was positively associated with the savings amount of ADD participants for up to 12 hours of classes, negatively associated with savings amount from 13 to 18 hours of classes, and positively associated again for more than 18 hours (Clancy, Grinstein-Weiss, & Schreiner, 2001; Schreiner et al., 2000; Schreiner et al., 2001; Sherraden, Schreiner, & Beverly, 2003). Clancy et al. (2001) found financial education hours to be positively associated with deposit frequency for up to 12 hours of classes, then leveled off. Grinstein-Weiss, Yeo, Despard, Casalotti, and Zhan (2010) also found hours of financial education to increase average monthly net deposit and deposit frequency at a decreasing rate and decreased likelihood of program dropout at an increasing rate. These findings may reflect selection bias as participants were assigned to education hours based on the assessment of IDA staff.

Incentives to Save

Attractive incentives promote savings. Incentives draw on the neoclassical economic theory that individuals may save more because the price of current consumption increases relative to future consumption (substitution effect). Also, with higher real interest rates, individuals can save less and still have future consumption (income effect). Individuals benefit from incentives and constraints placed by institutions in order to delay consumption. These incentives and constraints may be externally imposed, but individuals voluntarily place themselves under restrictions by joining the program. For example, individuals voluntarily join IDA programs and submit themselves to the rules of the program. Incentives may also reinforce the importance of savings on a social scale (Beverly & Sherraden, 1999). There is some evidence to suggest IDA savers responded to matched savings rates. Zhan (2003) found single mothers with higher match rates saved more frequently than those with lower match rates. However, match rates did not have a significant relationship with savings amounts for ADD participants as a whole (Schreiner et al., 2001). Schreiner (2005) found higher match rates increased the likelihood of saving in IDAs, but for those who saved in IDAs, higher match rates were associated with a lower level of savings. Perhaps these participants saw less need to save greater amounts of money, as this money would be substituted with the matching funds. This may be because most IDA programs set a maximum savings amount (match cap) for participants to achieve. Schreiner et al. (2000) found that ADD participants with a higher match rate were less likely to make an unmatched withdrawal.

Facilitation of Saving

Facilitation involves techniques that make it difficult to choose current consumption at the expense of future consumption, including mechanics of contractual saving and pre-commitment constraints (Katona, 1975). One example of facilitation is payroll deduction into a savings account (contractual savings). When money is automatically deducted from a paycheck, the temptation to spend the money is removed and the individual no longer has to make the conscious choice to save (Beverly & Sherraden, 1999). One source of facilitation in IDAs is direct deposit. Only about 6% of all ADD participants used direct deposit. Contrary to expectations, Sherraden et al. (2003) found direct deposit was not significantly related to savings amount. The authors suggested those who used direct deposit found they were depositing more than they could afford into their IDAs and ended up withdrawing significant amounts of money from their IDAs to meet expenses. Direct deposit may also serve as a link to other financial services for the low-income population (Beverly, Tescher, & Romich, 2004).

Access to Institutionalized Saving Mechanisms

Individuals who have access to institutionalized savings mechanisms are likely to have higher savings rates than those who do not. Institutionalized saving mechanisms promote savings because they are convenient and secure. They also send the message of the need and benefits of

saving (Beverly & Sherraden, 1999). Sherraden et al. (2005) found that without institutional support, many IDA participants believed they could not save money. The study suggested that without support from the program, many individuals began saving but did not maintain their savings. In fact, the lack of savings by low-income individuals may be partially explained by limited opportunities to access financial institutions (Sherraden et al., 2003). Using data from the 1998 Survey of Consumer Finances, Hogarth and Anguelov (2003) reached a similar conclusion. They found that low-income individuals with a bank account were 1.8 times as likely to save as those without access to a bank account (Hogarth & Anguelov, 2003). Providing access to savings mechanisms may be the first step in increasing saving among low-income individuals.

Taken together, studies of the ADD suggested institutional determinants (information, incentives, facilitation, and access) influence savings in IDAs. More evidence exists for the influence of incentives and information on savings, as these determinants have been more easily measured than access and facilitation in IDAs. This study contributes to the existing literature in two ways. First, while savings amounts have been explored in previous research, little research has been conducted assessing the achievement of savings goals within the context of IDAs. This study examined factors that predict matched withdrawals from an IDA. Second, this study examined observable differences between participants who do not save in an IDA program, those who can save but do not reach their savings goal, and those who successfully save and reach their goal. Education (information) was closely examined, as participants varied widely in hours of financial education. Financial education also provided the opportunity to change attitudes and beliefs for long-term impact on savings behavior.

Methods

Data

Aanalysis for the current study used data collected on IDA participants in the American Dream Demonstration (ADD). The ADD was held from 1997 to 2001 at 14 sites across the nation (Schreiner et al., 2002). These sites had differing program designs including differing income guidelines, qualified matchable uses, and required education hours (Schreiner et al., 2002). Enrollment in the ADD took place between July 1, 1997 and December 31, 1999, however, some participants enrolled after the deadline. The ADD had 2,364 participants as of December 31, 2001. Savings ended and matches were only allowed for deposits made through December 31, 2001 for most participants. Participants at most ADD programs could make matched withdrawals from their accounts through June 30, 2002 (Schreiner et al., 2002).

Program characteristics, participant demographics, and monthly account balance information are included in the public-use Management Information Systems for Individual Development Accounts (MIS IDA) data for the ADD, created by the Center for Social Development. The Center for Social Development also developed MIS IDA QC, a quality-control software program. With MIS IDA QC reports, the Center for Social Development and ADD programs crosschecked data for entry errors, missing values, and account inconsistencies. The research sample includes 1,658 individuals who had non-missing information on savings decisions and each of the independent variables described below.

Dependent variables. In order to explore factors related to saving and the achievement of savings goals in IDAs, participants in the ADD who did not save, saved, and achieved savings goals were distinguished from each other and divided into three categories. These categories were (a) non-savers, those who did not save and did not complete the IDA program; (b) unmatched savers, those participants who had savings in their accounts at the end of the ADD program, but never made a matched withdrawal for an asset purchase; and (c) matched savers, participants who saved and withdrew their savings for an asset purchase, therefore successfully completing the ADD program. This variable was created from the cumulative net deposits and cumulative matched withdrawals variables in the data set. If a participant had zero cumulative net deposits, they were coded as a non-saver. Participants with positive cumulative net deposits and zero matched withdrawals were coded as unmatched savers and those with positive cumulative net deposits and positive matched withdrawals were coded as matched savers. Matched savers were assumed to achieve the stated objective of the ADD program: savings for a particular defined objective. Unmatched savers did not reach the objective of the ADD, but did benefit from accumulating savings and completing the IDA program. This methodology differs from creation of a program dropout variable used by other studies. For example, Grinstein-Weiss et al. (2010) defined program dropouts as participants who exited the program without a matched withdrawal.

Independent variables. Information was measured by the hours of general financial education program participants took. Previous studies of IDA programs indicated a non-linear relationship between financial education and savings

outcomes (Clancy et al., 2001; Schreiner et al., 2000; Schreiner et al., 2001; Sherraden et al., 2003). Therefore, hours of financial education squared were also included. Incentives to save were measured by the match rate participants receive. The presence of direct deposit and the match cap (maximum amount that an individual is allowed to save for a matched withdrawal) measured facilitation (support) of savings. If a program allowed participants to save more, it was expected participants would be more inclined to save more, given the availability of resources. Individuals with an existing savings account when the program started may have more access to institutionalized saving mechanisms. Savings account ownership prior to the start of the IDA program would be used to measure access.

To account for additional variation, participant demographic and socioeconomic variables including gender, age, age squared, race/ethnicity, marital status, household size, educational attainment, employment status, total income (earned, unearned, and public assistance), the receipt of TANF, net worth, rural/urban residency, and the intended use of the IDA savings (e.g., homeownership, education, small business) were included in the model.

Model

The outcome being examined was the IDA participant's savings choice. Three decisions were possible for each individual: non-saving, unmatched saving, or matched saving. Because these were discrete, unordered, qualitative categories, a multinomial logit model was used for the analysis. A multinomial logit is similar to a logistic regression with the exception of more than two possible dependent outcomes existing. Each outcome was paired with one other outcome and a model was fit. This was repeated until a model was fit for each pair of possible outcomes. The three conditional probabilities of each outcome category are described below (see Hosmer and Lemeshow (1989) and Quesnel-Vall (2002) for a discussion of this model), where Y = 0 is the base category (non-savers) and x was a vector of covariates.

$$\Pr(Y = 0 \mid x) = \frac{1}{1 + e^{g_1(x)} + e^{g_2(x)}}$$

$$\Pr(Y = 1 \mid x) = \frac{e^{g_1(x)}}{1 + e^{g_1(x)} + e^{g_2(x)}} \quad (1)$$

$$\Pr(Y = 2 \mid x) = \frac{e^{g_2(x)}}{1 + e^{g_1(x)} + e^{g_2(x)}}$$

Relative risk ratios were the main parameter of interest and were derived from the equation (Quesnel-Vall, 2002; Zhang & Yu, 1998):

$$\beta_{jk} = \frac{[\,Pj \mid (X_k = X_{k0})\,]}{[\,Pj \mid (X_k = X_{k0} + 1)\,]} \quad (2)$$

This relative risk ratio was interpreted as the effect of X_k on the probability of savings (matched or unmatched) compared to the probability of non-saving. In the basic model, the functional form for g is given by:

$$g_j^{(x)} = \beta_{j0_\varepsilon} + \beta_{j1_\varepsilon} Finedu + \beta_{j2_\varepsilon} Finedu^2 + \quad (3)$$
$$\beta_{j3_\varepsilon} Matchrate + \beta_{j4_\varepsilon} Dirdep + \beta_{j5_\varepsilon} Matchcap +$$
$$\beta_{j6_\varepsilon} Savacct + \beta_{j7_\varepsilon} Demographics$$

where *Finedu* was a continuous measure of hours of general financial education taken by participants, *Matchrate* was the match rate of the IDA, *Dirdep* indicated usage of direct deposit, *Matchcap* was the maximum amount a participant was allowed to save for a matched withdrawal, and *Savacct* indicated whether the participant had an existing savings account with a financial institution before the IDA program began. Standard errors were clustered at the program level because individuals participating in the same program likely had correlated unobservables.

The model included participant demographic and financial variables including gender, age, age squared, race/ethnicity, marital status, household size, educational attainment, employment status, total income (earned, unearned, and public assistance), the receipt of TANF, net worth, rural/urban residency, and the intended use of assets in the IDA.

The econometric model above was used to test four formal hypotheses:

- H_1: Participants with more hours of financial education will be more likely to be unmatched savers than non-savers, and will be more likely to be matched savers than either unmatched savers or non-savers, relative to those with fewer hours of financial education.
- H_2: Participants with higher matched caps and rates will be more likely to be unmatched savers than non-savers, and will be more likely to be matched savers than either unmatched savers or non-savers, relative to those with lower matched caps and rates.

H_3: Participants who use direct deposit for their IDA will be more likely to be unmatched savers than non-savers, and will be more likely to be matched savers than either unmatched savers or non-savers, relative to those who do not use direct deposit.

H_4: Participants with prior access to an institutionalized saving mechanism (savings account) will be more likely to be unmatched savers than non-savers, and will be more likely to be matched savers than either unmatched savers or non-savers, relative to those without a savings account.

Results

Descriptive Analysis of the Sample

A descriptive analysis of independent variables for 1,658 participants by the three savings categories (non-saver, unmatched saver, and matched saver) is presented in Table 1. The descriptive analysis shows unmatched and matched saver groups had increasingly higher percentages of participants with financial education, direct deposit, higher matched caps, and savings accounts. These relationships were consistent with theoretical expectations. Finally, unmatched and matched saver groups have higher percentages of married, college educated, employed, and higher income individuals are indicated in Table 1.

Multinomial Logit Model

Multinomial logit results are presented in Table 2. Relative risk ratios and corresponding standard errors are presented in this table as they were the main parameter of interest (Quesnel-Vall, 2002; Zhang & Yu, 1998).

Hours of financial education was associated with a non-linear increase (increasing at a decreasing rate) in the probability of being a matched saver (compared to both non-savers and unmatched savers) and unmatched saver (compared to non-savers). Matched rate had an unclear and insignificant relationship with savings group outcomes. Direct deposit was not found to be significantly related with the probability of being a non-saver, unmatched saver, or matched saver.

A larger match cap had a significant relationship with being an unmatched saver compared to a non-saver. An extra one hundred dollars in match cap was associated with a 6% increased probability of being an unmatched saver compared to a non-saver. Access to a savings account was associated with a significant 44% increase in probability of being a matched saver compared to non-saver. However, the relative risk ratios were insignificant for the other groups who were compared.

Age was associated with a 9% increase (which decreases with increasing age) in the probability of being an unmatched saver (compared to non-saver). Total income also had a significant relationship with being an unmatched saver compared to a non-saver. Each 100 dollars in total income was related to a 2% increase in the likelihood of being a matched saver compared to an unmatched saver. Females were 43% more likely than men to be unmatched savers rather than non-savers. African Americans were about 55% less likely to be matched savers than unmatched savers compared to Caucasians. Native Americans were about 43% less likely to be matched savers than non-matched savers compared to Caucasians. However, Asian Americans were almost three times more likely to be unmatched or matched savers than non-savers compared to Caucasians. Participants who identified themselves as multi-racial or of other races (not Caucasian, African American, Asian American, Latino, or Native American) were about 2.5 times as likely as Caucasians to be unmatched savers rather than non-savers or matched savers rather than unmatched savers and almost 6 times as likely to be matched savers compared to non-savers.

Being never married or being divorced or separated appeared to have a negative relationship with the probability of being a matched saver (compared to married participants). Never married participants were about 38% less likely than married participants to be matched savers than non-savers. Divorced or separated participants were about 30% less likely to be matched savers than unmatched savers compared to married participants. Higher levels of education had a positive relationship with the probability of being a matched saver. Participants with some college were about 50% and 85% more likely to be matched savers than unmatched and non-savers, respectively, compared to participants with less than high school. Those with a two-year degree were about 75% more likely to be matched savers (non-saver baseline) compared to participants with less than high school. Participants with a two- or four-year degree were 0.9 and 3.0 times more likely to be unmatched and matched savers (non-saver baseline), respectively, compared to participants with less than high school. Participants with a four year degree were 2.2 and 2.7 times more likely to be unmatched and matched savers (non-saver baseline), respectively, compared to participants with less than high school.

The intended use of the IDA was significantly related with savings groups. Participants who intended to use their IDA for home repair are about 9 and 11 times more likely to be

Table 1. Description of Savings Groups

	Non-saver (*n* = 575)	Unmatched saver (*n* = 540)	Matched saver (*n* = 543)
Financial education (hours)	8. 18	10. 79	12. 46
Match rate	2. 07	1. 89	1. 96
Direct deposit	3. 30%	6. 67%	8. 66%
Match cap	$1,099. 43	$1,472. 90	$1,503. 48
Previous savings account	41. 74%	49. 63%	54. 70%
Gender			
Male	21. 57%	15. 93%	22. 84%
Female	78. 43%	84. 07%	77. 16%
Age	33. 94	36. 03	36. 99
Race/ethnicity			
African-American	53. 74%	54. 26%	30. 57%
Asian-American	0. 87%	2. 41%	3. 87%
Caucasian	32. 52%	30. 92%	49. 54%
Latino	8. 52%	7. 41%	8. 47%
Native American	2. 96%	2. 96%	2. 39%
Other	1. 39%	2. 04%	5. 16%
Marital status			
Married	4. 35%	18. 51%	30. 75%
Never married	55. 83%	49. 26%	39. 41%
Divorced or separated	24. 17%	30. 56%	28. 55%
Widowed	15. 65%	1. 67%	1. 29%
Household size	3. 25	3. 25	3. 13
Educational attainment			
Less than high school	25. 01%	12. 98%	7. 91%
High school	25. 39%	20. 74%	20. 63%
Some college, did not graduate	39. 65%	42. 03%	42. 36%
Graduated with a two-year degree	3. 30%	4. 44%	4. 97%
Graduated with an unspecified two-year or four-year degree	6. 61%	11. 11%	13. 26%
Graduated with a four-year degree	0. 04%	8. 70%	10. 87%
Employment status			
Full-time	56. 35%	60. 56%	64. 64%
Part-time	22. 78%	22. 78%	22. 10%
Not working	3. 65%	2. 59%	5. 16%
Unemployed	7. 83%	5. 74%	3. 68%
Student (working and non-working)	9. 39%	8. 33%	4. 42%
Total income	$1,314. 60	$1,372. 78	$1,470. 21
TANF	14. 09%	12. 78%	4. 97%
Net worth	$253. 36	$1,807. 48	$6,266. 86
Rural	8. 87%	9. 26%	15. 47%
Intended asset use			
Home purchase	45. 10%	55. 92%	23. 75%
Home repair	4. 35%	5. 19%	22. 65%
Post-secondary education	13. 74%	12. 22%	20. 26%
Job training	3. 13%	1. 67%	1. 66%
Retirement	4. 00%	5. 56%	7. 37%
Small business and other	15. 48%	19. 44%	24. 31%

Table 2. Multinomial Logit Model (*N* = 1,658)

	Unmatched saver (non-saver baseline)		Matched saver (unmatched saver baseline)		Matched saver (non-saver baseline)	
	Relative risk ratio	***SE***	**Relative risk ratio**	***SE***	**Relative risk ratio**	***SE***
Financial education	1. 1595*	(0. 0504)	1. 2006*	(0. 0726)	1. 3921*	(0. 1159)
Financial education Squared	0. 9976*	(0. 0007)	0. 9962*	(0. 0013)	0. 9939*	(0. 0017)
Match rate	0. 8621	(0. 2675)	1. 2192	(0. 2719)	1. 0510	(0. 2317)
Direct deposit	1. 4992	(0. 3241)	1. 1665	(0. 4137)	1. 7488	(0. 7681)
Match cap (Measured in hundreds.)	1. 0606*	(0. 0194)	0. 9898	(0. 0225)	1. 0499	(0. 0294)
Previous savings account	1. 1952	(0. 1661)	1. 2080	(0. 2207)	1. 4438*	(0. 2672)
Female	1. 4324*	(0. 2025)	0. 8809	(0. 1314)	1. 2618	(0. 2190)
Age	1. 0908*	(0. 0408)	0. 9380	(0. 0496)	1. 0232	(0. 0856)
Age squared	0. 9990*	(0. 0005)	1. 0009	(0. 0007)	0. 9999	(0. 0010)
Race/ethnicity (Caucasian is baseline.)						
African American	1. 5114	(0. 3691)	0. 4522*	(0. 1197)	0. 6835	(0. 2467)
Asian American	2. 9577*	(1. 2829)	0. 9562	(0. 4626)	2. 8281*	(1. 3175)
Latino	1. 3495	(0. 5479)	0. 9400	(0. 2209)	1. 2685	(0. 4118)
Native American	0. 8572	(0. 3076)	0. 6633	(0. 2853)	0. 5686*	(0. 0938)
Other	2. 5451*	(1. 0621)	2. 4375*	(0. 9337)	5. 933*	(1. 9937)
Marital status (Married is baseline.)						
Never married	0. 8707	(0. 1459)	0. 7149	(0. 1673)	0. 6225*	(0. 0874)
Divorced or separated	0. 9966	(0. 2211)	0. 6947*	(0. 1197)	0. 6923	(0. 1698)
Widowed	0. 6712	(0. 3257)	0. 5172	(0. 3180)	0. 3472	(0. 1914)
Household size	1. 0139	(0. 0428)	0. 9769	(0. 0665)	0. 9905	(0. 0659)
Educational attainment (Less than high school is baseline.)						
High school	1. 0750	(0. 2603)	1. 3008	(0. 2993)	1. 3983	(0. 3682)
Some college	1. 2309	(0. 2035)	1. 5058*	(0. 2142)	1. 8530*	(0. 4389)
Two-year degree	1. 1705	(0. 2268)	1. 4922	(0. 3540)	1. 7466*	(0. 3736)
Unspecified two or four year degree	1. 8760*	(0. 5605)	1. 6064	(0. 5411)	3. 0137*	(1. 1378)
Four-year degree	2. 2200*	(0. 6127)	1. 2383	(0. 3071)	2. 7490*	(0. 6553)

Table 2. Multinomial Logit Model (Continued)

	Unmatched saver (non-saver baseline)		Matched saver (unmatched saver baseline)		Matched saver (non-saver baseline)	
	Relative risk ratio	***SE***	**Relative risk ratio**	***SE***	**Relative risk ratio**	***SE***
Employment status (Full time is baseline.)						
Part time	0. 9756	(0. 1993)	1. 0089	(0. 1816)	0. 9843	(0. 1946)
Not working	0. 8287	(0. 1623)	1. 4602	(0. 5375)	1. 2101	(0. 4645)
Unemployed	0. 8446	(0. 1701)	0. 7599	(0. 1702)	0. 6418	(0. 1469)
Student	1. 4287	(0. 3547)	0. 7000	(0. 2004)	1. 0001	(0. 2207)
Total income (Measured in hundreds.)	0. 9956	(0. 0070)	1. 0220*	(0. 0082)	1. 0174	(0. 0102)
TANF	1. 1431	(0. 1940)	0. 5196	(0. 2578)	0. 5940	(0. 2860)
Net worth (Measured in hundreds.)	1. 0008	(0. 0005)	0. 9997	(0. 0004)	1. 0005	(0. 0006)
Rural	0. 9842	(0. 4012)	0. 8228	(0. 2622)	0. 8089	(0. 3066)
Intended use (Homeownership is baseline.)						
Home repair	0. 8263	(0. 3032)	11. 2248*	(3. 2050)	9. 2746*	(3. 8412)
Post-secondary education	1. 2257	(0. 3065)	4. 0911*	(1. 1279)	5. 0144*	(1. 8535)
Job training	1. 0484	(0. 3731)	3. 1718*	(1. 4486)	3. 3253*	(1. 3179)
Retirement	0. 7054	(0. 2774)	3. 3054*	(1. 3953)	2. 3316*	(0. 8562)
Small business & other	1. 4885*	(0. 1373)	3. 0312*	(0. 7058)	4. 5119*	(0. 9108)

pseudo $R^2 = 0.1952$.
*$p < .05$.

a matched saver than unmatched and non-savers, respectively, than those who intended to use their IDA for home ownership. Those who intended to use their IDA for post-secondary education were about 4 and 5 times more likely to be matched savers than those with the intended use of homeownership (unmatched and non-saver baseline, respectively). IDA participants saving for job training were over 3 times more likely than those saving for a house to be a matched saver (unmatched and non-saver baseline). The probability of being a matched saver was 3.3 and 2.3 times (baseline unmatched and non-saver, respectively) larger for participants who were saving towards retirement compared to those saving towards home ownership. Saving for a small business or other (compared to home ownership) increased the probability of being an unmatched saver (compared to non-savers) by 49% and increased the probability of being a matched saver (compared to unmatched and non-savers) by 3 and 4.5 times, respectively. Household size, net worth, the receipt of TANF, rural/urban residency, and employment status did not significantly influence the probability of being a non, unmatched or matched saver.

Discussion

Information (e.g., financial education), incentives to save, the facilitation (support) of saving, and access to institu-

tionalized savings mechanisms (e.g., savings accounts) were expected to influence the probability of IDA participations belonging to one of three savings categories: non-savers, unmatched savers, and matched savers. Hypotheses of this study were that these institutional determinants of savings would increase the likelihood of being unmatched or matched savers rather than non-savers and also increase the likelihood of being matched savers rather than unmatched savers.

Matched savers were more likely to have more hours of financial education than unmatched savers and non-savers. Matched savers were also more likely to have prior access to a savings account than non-savers. Unmatched savers were more likely than non-savers to have a higher matched cap. Differences in matched rate and direct deposit were not significant between the three savings groups.

Attending more hours of financial education increased the probability that participants reached their savings goal (matched savers) at a decreasing rate. This finding is consistent with the findings of Grinstein-Weiss et al. (2010) that hours of financial education decreases the probability of dropout at an increasing rate. Matched savers appeared more motivated to attend financial education classes and reached their saving goals quickly. Although the relative risk ratio for match cap was small, the effects of a higher match cap are significant. By increasing a non-saver's lifetime match cap by $1,000, the probability of that non-saver becoming an unmatched saver would increase by 60%. Schreiner et al. (2000) and Schreiner et al. (2001) also found positive effects of higher match caps on IDA participation. Those with higher match caps were less likely to drop out of the IDA program or to make unmatched withdrawals (Schreiner et al., 2000; Schreiner et al., 2001). Match caps are often viewed as savings goals in IDA programs. By placing higher expectations on participants, high match caps may motivate participants to save.

Participants who owned a savings account at the time of enrollment in the IDA program were more likely to be a matched saver. This coincides with Hogarth and Anguelov (2003) finding that low-income individuals with a bank account are 1.8 times as likely to save as those without access to a bank account. Grinstein-Weiss et al. (2010) also found IDA participants with a bank account saved more per month, made more deposits, and were less likely to drop out of the program. Participants who had access to a financial institution may be more likely to reach their savings goals through the relationship with a savings institution and the facilitation of savings by the savings institution.

Matched savers were less likely to save towards homeownership than unmatched savers and non-savers. Participants in IDA programs may struggle to save towards homeownership compared to other uses as the amount needed to save for homeownership is substantially more than other assets. According to the U.S. Census Bureau (2010), in the second quarter of 2010, the U.S. homeownership rate was 66.9%. However, households with income below the median U.S. household income had a homeownership rate of 51.9% (U.S. Census Bureau, 2010). Individuals with a high school education or less had a lower probability of matched withdrawals relative to counterparts with at least some college education. More education was related with savings and reaching savings goals.

These data did not include a control group of participants who did not participate in the ADD. There is no way to know how successful participants would have been in saving and reaching savings goals without the support of IDA programs. Also, these participants were not randomly assigned to participate in the ADD, they self-selected into the program. Therefore, participants in the ADD may not accurately represent the low-income populations in their cities. Participants who select to enroll in an IDA program can be expected to be more motivated to save than individuals who do not participate; these individuals may also be more future oriented. Estimates generated from IDA participants may not be accurately generalized to other low-income populations.

Another weakness of the current study is the inability to account for intermittent events in the data. Economic shocks (such as job loss, medical expenses, and change in family size/structure) may play a major role in a participant's ability (or inability) to save and reach savings goals (Rohe, Gorham, & Quercia, 2005). Future research should focus on longitudinal data of participants in order to detect the effects of intermittent events. Also, program participants may be self-selecting into more hours of financial education. When exploring the relationship between the amount of financial education received and financial behavior, Lyons, Chang, and Scherpf (2006) found prior financial experience to matter more than the number of financial lessons completed.

Quality and content, essential parts of financial education, were not measured in this study. Perhaps participants

who took more hours of financial education were in higher quality financial education classes. Little has been done to assess the quality of education in IDA programs. This may stem from the fact that IDA programs are so heterogeneous in nature; there is no set IDA curriculum. According to Anderson, Zhan, and Scott (2004), assessment of needs are crucial to low-income audiences, as they are quite diverse. Therefore, it is up to individual IDA programs to determine the content and effectiveness of their financial education programs.

Moore et al. (2001) attempted to assess the quality of financial education in IDAs with a cross-sectional survey of 298 ADD participants. The majority of respondents believed that financial literacy classes helped them to save. However, those who said that classes helped them save actually saved about $9 less per month than those who did not find the classes helpful. This finding may indicate that participants who find financial literacy classes most helpful are those with little financial knowledge and, therefore, are less likely to save as much (Moore et al., 2001). Han and Sherraden (2009) reported participants with highly positive attitudes towards institutional qualities of IDA programs, including financial education, saved more than participants without highly positive attitudes. Findings from this paper suggest that financial education helped participants achieve their savings goals. Financial education may help participants to set realistic and achievable savings goals resulting in smaller amounts being saved, but greater success in attaining savings goals.

Conclusions and Implications

About four out of five low-income working families are asset poor, living without enough assets to survive for three months at the federal income poverty level (McKernan & Ratcliffe, 2008). IDA programs need to focus on helping participants reach savings goals in order to take advantage of matching funds and build assets. However, savings itself is a positive skill even if savings goals are not met to take advantage of matching funds. Savings (such as IDAs) can help low-income households cope with income instability and unexpected expenses. Programs to promote saving can help low-income households protect themselves from economic shocks (such as unemployment), as income variability increases risk of economic hardships for low-income households (Amick & Mills, 2010). IDAs need to promote all savings by offering high interest rates. With higher interest rates, individuals who need to withdraw savings from IDAs for economics shocks will still receive a financial benefit from the IDA program.

Another benefit IDA programs offer participants is financial education. In order to be as successful as possible, IDA programs should examine the effectiveness of financial education. Programs need to deliver information to participants as effectively as possible and in a short amount of time, respecting the needs of participants. Given that participants in this study who had savings accounts were more likely to be matched savers, financial education may need to be limited to targeted topics, such as opening and maintaining a savings account. As a result, IDA participants who have savings accounts can learn to better manage their accounts and those who do not have savings accounts may choose to open accounts. Opening a savings account may provide an incentive for these participants to save more and ultimately become matched savers. If resources allow, education can be tailored and individualized coming through a savings coach or some other personalized mechanism. Peer financial counseling is also a low-cost alternative to savings coaches. Using peer financial counseling, participants would have the opportunity to support one another and hold each other accountable. The support (financial education and counseling) needs of IDA participants need to be included in future research.

Matching funds are another defining feature of IDA programs. If programs are to be successful, they need to strive to help participants take advantage of those matching funds, including offering high match rates and match caps to participants. Coordination of IDA programs with the America Saves Initiative may benefit IDA participants. The various savings initiatives throughout the U.S. provide participants with wealth coaches. These coaches assist savers in many ways including one-on-one financial education, motivation, accountability and assistance with opening accounts with financial institutions that offer free savings accounts to these savers for a period of time.

ADD participants saved while in the program, but did the financial education and savings values of the ADD have lasting effects on the savings behaviors of participants? It is unknown whether or not participants of the ADD continued to save or changed their savings behaviors after the ADD ended. This may be the true test of IDA programs, to see if they truly changed the attitudes and behaviors of participants after their programs ended. Follow-up surveys of IDA participants should be conducted to estimate any lasting effects of IDA programs on savings behaviors.

Financial education was found to be a constant and significant institutional factor in predicting savings and the

achievement of savings goals in IDAs. Programs need to take a careful look at this component of the IDA program to help individuals achieve their savings goals. Content analysis of financial education courses paired with the achievement of savings goals of participants in those courses would provide a needed link between savings goals and financial education content and quality.

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