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SAVING FOR POST-SECONDARY EDUCATION IN INDIVIDUAL DEVELOPMENT ACCOUNTS

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Low-income people have less access to opportunities for post-secondary education, and the welfare reform in 1996 further limited access for welfare recipients. Since welfare reform, there has been an increasing interest in strategies meant to enhance the well-being of low-income people through education and the development of human capital. In this study, we examine how low-income people saved for post-secondary education in Individual Development Accounts (IDAs) in a nationwide demonstration. IDAs provide matches for savings used primarily for home purchase, microenterprise, and post-secondary education. We examine how savings outcomes differed between participants who intended to use their savings for post-secondary education and other participants. We also look at how these differences in savings outcomes were associated with difference in participant characteristics and in IDA design across different programs in the demonstration.

Results indicate that the savings outcomes of "education savers" were different from other participants. Furthermore, savings for post-secondary education moderated some relationships between savings outcomes and other characteristics of participants and of IDA programs. Implications are discussed for policy and social-work practice for using IDAs to promote human-capital development by low-income people.

Keywords: *post-secondary education, individual development accounts, assets building, welfare reform*

Both theory and empirical evidence suggest that education has a wide variety of positive economic and social effects on individuals, families and society as a whole (Becker, 1993; Beverly & Sherraden, 1997; Center for Women Policy Studies, 2002). Furthermore, the labor-market returns to education have increased since the early 1970s (Mishel, Bernstein & Schmitt, 1997; Mishel & Burtless, 1995), and the rise in earnings inequality during the past two decades is closely related to differences in educational attainment (Amott, 1994; Bernhardt & Dresser, 2002). In the meantime, despite the fact that the average level of education has increased over the years for both men and women, low-income people and other disadvantaged groups have faced decreasing access to opportunities for post-secondary education (Mortenson, 2000).

Among the many factors contributing to low access is inadequate financial resources (Boldt, 2000; Gittell, Gross, & Holdaway, 1993). In particular, the increasing costs of college and cuts in need-based financial aid have made post-secondary education less affordable for many low-income people (Choitz & Widom, 2003; Mortenson, 2000; Sherraden, 1991). The welfare reform of 1996 has focused on work requirements, further limiting access to post-secondary education for welfare recipients. Low-income people may need to put short-term needs ahead of investment in their long-term development of human capital, and it is important for social policy to help them save and invest for their future education.

Individual Development Accounts (IDAs) are an approach to help low-income people save and accumulate financial assets for post-secondary education. IDAs are targeted to low-income people and provide incentives and an institutional structure conducive to saving (Schreiner, *et al.*, 2001). IDAs provide participants with matches for savings used for home purchase, microenterprise, and post-secondary education. This paper investigates the following questions: Do IDA participants who intend to use their savings for post-secondary education have different savings outcomes than other IDA participants? And if so, what demographic factors and program-design characteristics are associated with the differences? Answers to these questions may provide lessons that will help guide modifications to IDA policy and program design in ways that might improve savings outcomes for those intending to use their IDA for post-secondary education.

Background

Access to Post-Secondary Education for Low-Income People

The rising costs of college since the early 1980s have made post-secondary education less affordable for low-income households (Milano, 2003). Social investment in higher education for low-income people has also declined. Since the 1990s, the federal government and some states have moved from need-based financial aid to merit-based aid (Clancy, Cramer, & Parrish, 2005; Mortenson, 2000). In addition, the federal government has aggressively expanded educational loan programs in the past two decades, with more of the costs of these programs borne by borrowers instead of taxpayers. Unfortunately, students from low-income families are more likely to view loans as barriers; for example, many low-income students report being afraid of not being able to pay back the loans (Choitz & Widom, 2003). Furthermore, state budget crises in recent years have forced many community colleges—traditionally a popular choice among low-income students—to raise tuition (Choitz & Widom, 2003).

These above factors made college less affordable for low-income people, especially considering that college aid previously had greater impact for the poor than for the non-poor (Dynarski, 2002). Related to these changes, gaps in educational attainment by income level started to widen in the 1980s and 1990s. For example, by the mid-1990s, a student from a family in the top income quartile was 10 to 12 times more likely than a student from the bottom quartile to have completed a bachelor's degree by age 24, but in 1970 and 1980, the gaps were only 6 and 4 times (Mortenson, 2000).

Beyond these changes to college costs and the structure of financial aid, welfare reform made post-secondary education—especially four-year college degrees—more difficult for low-income people. The Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) replaced Aid to Families with Dependent Children (AFDC) with a Temporary Assistance for Needy Families (TANF) block grant (U.S. Congress, 1996). This law transformed the 60-year-old welfare system into a work-based system which requires states to place increasing percentages of adults in work or work-related activities. Historically, most work-relief programs until the first half of this century

did not offer extensive opportunities for training and manpower development of welfare recipients, primarily to avoid opposition from trade unions (Charnow, 1943). Since the 1960s, however, a few training and manpower development programs such as the Manpower Development and Training Act (MDTA) program, the Work Incentive program (WIN), the Comprehensive Employment and Training Act (CETA) program and the Job Training Partnership Act (JTPA) programs were implemented with federal funding. The Job Opportunities and Basic Skills Training (JOBS) program, which was the centerpiece of the Family Support Act (FSA) of 1998, permitted the states to support postsecondary education, including two- and four-year college degrees.

TANF's work-participation mandates have shifted the focus of welfare-to-work programs away from education and training toward quick job placement. The new system of welfare provision includes a number of regulations that discourage welfare recipients from pursuing post-secondary education. First, TANF is designed to place recipients directly into jobs. States are penalized unless they put a large share of their adult recipients into work programs. This makes states less likely to provide education or meaningful job training. Second, job programs under TANF are narrowly defined, and most post-secondary education and job training do not count as "work". For example, recipients enrolled in post-secondary education for longer than a 12-month period are, for the most part, excluded from a state's calculation of its work-participation rates (Greenberg, Strawn, & Plimpton, 1999). Third, recipients are limited to 60 months of benefits (whether or not consecutive), and states can specify shorter time limits. Poor women with children and limited resources often take longer than four or five years to finish a Bachelor's degree (Mathur, 1998; Naples, 1998). Fourth, no more than 20 percent of caseload can count vocational training toward meeting the work requirement, including teen parents in secondary school. This cap may further limit the number of those seeking to enroll in higher education.

These factors can greatly reduce welfare recipients' access to post-secondary education, especially 4-year college degrees. Studies show that in the last few years, the college attendance of welfare recipients has decreased (Center for Women Policy

Studies, 2002; Jacobs & Winslow, 2003; Jones-Deweever, Peterson, & Song, 2003). For example, the Center for Women Policy Studies found that the college enrollment of welfare recipients had dropped by 46%, 60%, and 77% in different states such as Wisconsin, New York, and California. Other studies have also noted a drop in the number of students in universities who receive welfare (Snow, 1997; Spatz, 1997).

The "quick labor-force attachment model" assumes that those who take low-paying or part-time jobs will eventually move up to higher-paying and full-time jobs (Pavetti & Acs, 2001). While welfare reform has decreased welfare caseloads, research has consistently found that those who leave TANF often have unstable jobs and face precarious financial circumstances (Anderson & Gryzlak, 2002; Johnson & Corcoran, 2003; Loprest, 2001). At the same time, studies have found that welfare recipients who had college degrees earned more than those without college degrees (Karier, 1998; Mathur, 2004). This research has sparked an increasing interest in human-capital development strategies to enhance long-term self-sufficiency among welfare recipients, and more broadly, among the working poor (Strawn, 2004). Individual Development Accounts are one approach in this respect.

Asset-based Theory, IDAs, and Post-Secondary Education

Asset-based welfare theory highlights the importance of assets compared to that of income (Sherraden, 1991). According to this perspective, assets bring security, and maybe more importantly, assets may possibly stimulate and facilitate the development of human capital. Consistent with the notion of social investment in developmentalism (Midgley, 2003; Sen, 1999), asset-based welfare theory emphasizes opportunities to build assets that can strengthen human capacities.

Based on this theory, IDAs were designed to help low-income people build assets for long-term development, including post-secondary education (Sherraden, 1988; 1991). Deposits are made in IDAs by low-income participants. Others could also make deposits, perhaps related to milestones such as completing a year of schooling or graduating from high school. Withdrawals for post-secondary education (or other specified asset purchases) would be matched, with higher match rates for poorer participants. In

contrast to the current emphasis on loans to pay for college, IDAs aim to promote a system of savings and assets.

At the state level, asset building and IDAs are already a policy theme. For example, PRWORA allows states to set up IDA programs with TANF funds and to exclude IDAs balances as countable assets for the purpose of qualifying for benefits. As of 2002, 22 states include post-secondary education as a matchable use of their IDAs (Edwards & Gunn, 2002). Some IDA or similar programs outside the United States have also focused on post-secondary education (Boshara & Sherraden, 2004). For example, Canada has embarked on an asset-building demonstration (called "Learn\$ave") that provides matches for post-secondary education and microenterprise. In Western Europe, national Individual Learning Accounts (ILAs) resemble IDAs for post-secondary education. Participants in the Saving Gateway, a pilot asset-building program in the United Kingdom, indicated that education and training were the only restrictions on matched withdrawals that they would find acceptable (Kempson, McKay, & Collard, 2003). In sum, matched savings for post-secondary education as a new policy theme is being tested both in the United States and elsewhere.

Purpose of the Study

Can low-income people save for post-secondary education in IDAs? How do their savings outcomes differ from those of participants who are saving for other purposes such as home ownership or microenterprise? Given the current development of IDA programs, these are important questions. This study addresses these questions through an analysis of data from the American Dream Demonstration (ADD), a national IDA project. As far as we know, this is the first quantitative research on how low-income people save for post-secondary education in a structured, matched savings program.

Data and Methods

ADD Programs

ADD was a national demonstration of IDAs for low-income people. The 14 IDA programs in ADD were run from 1997–2001 by 13 not-for-profit host organizations (one host had two programs)

which include community development organizations, social-service agencies, credit unions, and housing organizations. A consortium of private foundations provided funding. All programs in ADD provided matches for home purchase, microenterprises, and post-secondary education, and some programs also provided matches for job training, home repair, or retirement savings. Match rates ranged from 1:1 to 7:1, with the most common rate being 2:1. Eight programs had annual deposit limits, ranging from \$180 to \$3,000 per year; and six programs had lifetime deposit limits, ranging from \$1,800 to \$ 8,000 per participant.

The savings data are unusually accurate, as they come directly from the monthly passbook savings-account records of the depository institutions.

Participants

ADD programs used a variety ways to market IDAs, and ADD participation was voluntary. Enrollment in ADD began July 1, 1997 and ended by December 31, 1999. As of December 31, 2001 (the date at which deposits were ended), ADD had 2,353 participants. A *participant* is defined as an enrollee with at least one account statement, whether or not he or she later dropped out (Schreiner, Clancy & Sherraden, 2002). Important characteristics of ADD participants are presented in Table 1. Most participants were female (80 percent), and nearly half were African-American (47 percent). Almost half were never-married (49 percent). About 58 percent had attended some college or had some type of college degree, and 82 percent were employed (full-time or part-time) at enrollment. Compared with the general low-income population (Sherraden *et al.*, 2000), ADD participants were more educated and more likely to be employed. On the other hand, compared with the general low-income population, a higher proportion of ADD participants were women, African-American, or never-married. These comparisons suggest that ADD participants tended to be somewhat disadvantaged members of the "working poor".

Measurements

The dependent variable in this study, Average Monthly Net Deposits (AMND), is defined as deposits plus interest minus unmatched withdrawals, divided by the number of months eligible

to participate. Withdrawals in ADD may be matched or unmatched, depending on whether they are used to purchase matchable assets, such as home, postsecondary education, or microenterprises. AMND measures net deposits but also controls for the length of time that a participant has had the opportunity to save. All else constant, greater AMND implies greater saving and asset accumulation in IDAs.

The independent variables include important program-related factors (also known as "institutional" factors) and participant characteristics. Program factors include the match rate, the monthly savings target, hours of required financial education, and whether participants used direct deposit into their IDAs. The monthly savings target is the total match cap (i.e., the limit on the amount of deposits that can be matched) divided by the time cap (i.e., the number of months after opening an account in which a participant may make matchable deposits). IDAs in ADD have both a match cap and a time cap because funds are limited in time and amount. If deposited each month and not removed as an unmatched withdrawal, this level of savings would lead to net deposits equal to the lifetime match cap by the end of participation. Participant characteristics include demographic information (gender, age, marital status, race/ethnicity, number of children, and number of adults), education and employment status, household income, bank account ownership, home ownership, and receipt of AFDC/TANF. Detailed information on these variables is presented in Table 1.

The regression also includes a yes/no variable that indicates whether a given participant was an "education saver" who made a matched withdrawal for post-secondary education or who declared at enrollment that he or she intended to make such a matched withdrawal. There are two major reasons that we include participants who have not made matched withdrawals as "education savers". First, for most participants, savings ended and matches were allowed only for deposits made through December 31, 2001, at which point the most recent data are available. However, matched withdrawals were possible at most ADD programs through June 30, 2002. Therefore, the "time window" for the current data does not catch participants who made a matched withdrawal after the end of the "savings period" (i.e., December

31, 2001). This group includes a large share of intended "education savers". Second, further analyses indicate that there are no significant differences between "intended education savers" and "actual education savers" in terms of their demographic and socioeconomic characteristics.

Similar yes/no indicator variables are also included to mark participants who declared an intention to save for home purchase, home repair, microenterprise, retirement saving, or job training. Finally, in order to examine how being an education saver moderates the associations between program and participant factors and savings outcomes, the regression model includes interaction terms between the indicator for "education savers" and all the other independent variables.

Analysis

Following descriptive and bivariate analyses, multiple regression was used to examine how Average Monthly Net Deposits in IDAs might differ between "education savers" and others in ADD. AMND was regressed on program factors, participant characteristics, and interactions between the indicator for "education savers" and each of the other independent variables. After list-wise deletion of cases with missing values, the regression sample encompassed 1,979 cases. This model simultaneously estimates how the savings outcome is associated with program and participant factors, with being an "education saver", and how being an "education saver" moderates the associations between AMND and other program and participant characteristics. Specifically, the coefficient on the (non-interacted) indicator for "education savers" is an estimate of the link between characteristics that are omitted from the regression that are associated with both "education savers" and AMND. The interaction effects provide estimates of how being an "education saver" moderates the associations between AMND and program and participant characteristics. Overall, the model intends to examine both *whether* "education savers" are different from other savers and, if they are different, *why*.

Researchers often attempt to assess moderating or interaction effects indirectly through subgroup analysis (Coulton & Chow, 1992). The "sub-group" approach runs two regressions, one with

only “education savers” and one with all others. The “interaction” model used here is to be preferred over the “sub-group” approach, mostly because there is no rigorous way to compare coefficients between two different regressions because the sample sizes and error terms differ (Coulton & Chow, 1992; Koeske, 1992). The coefficients across the regressions might look similar or different, but there is no straightforward way to test whether the apparent differences/similarities are statistically significant. With the “interaction” model used here, in contrast, the p-value on a given coefficient of the interaction term immediately and transparently indicates whether being an “education saver” moderates that characteristic, and an F test for all the interaction terms as a group (along with the stand-alone “education saver” indicator) can be used to see whether “education savers” differ overall from other participants.

Results

Sample Characteristics

There were 377 “education savers” in ADD. Of these, 40 percent had made matched withdrawals as of the cut-off date of the data, accounting for 21 percent of all the ADD participants who had made matched withdrawals at that point. Table 1 compares the characteristics of “education savers” and other participants. Compared with others, “education savers” were younger, more likely to be never-married, and had fewer children at home. They were also less likely to be females and less likely to be African-American. “Education savers” also had less income, were less likely to be working full-time, and—in line with the discussion in the literature review—were less likely to receive welfare. These features are also consistent with the fact that a larger share (22%) of “education savers” was already students when they opened their IDAs than other savers (6%).

Bivariate Analysis of Savings Outcomes

Table 2 presents the bivariate analysis of AMND by some subgroups of program and participant characteristics. When other factors were not controlled, male participants, married participants, and participants with higher educational status had higher

Table 1

Characteristics of ADD Participants and Comparisons of Education Savers and Non-Education Savers

<i>Variables</i>	<i>Education Savers (N = 377)</i>	<i>Non-education Savers (N = 1,976)</i>	<i>Comparisons of Education and Non-education Savers</i>	<i>ADD Participants (N = 2,353)</i>
<i>Continuous Variables</i>	<i>Mean</i>	<i>Mean</i>	<i>t / χ^2</i>	<i>Mean</i>
Age	30	37	-11.3***	36
Number of adults	1.4	1.5	0.68	1.5
Number of children	1.5	1.8	-3.36**	1.7
Household monthly income	\$1,252	\$1,402	-3.80***	\$1,378
<i>Categorical Variables</i>	<i>Percents</i>	<i>Percents</i>		<i>Percents</i>
<i>Gender</i>				
Female	74	81	8.37**	80
Male	26	19		20
<i>Race/ethnicity</i>				
White	41	37	2.77	37
African-American	35	49	26.4***	47
Others	24	14	22.9***	16
<i>Marital Status</i>				
Never married	66	46	52.18***	49
Divorced, Separated, or Widowed	19	31	24.81***	29
Married	15	23	10.59**	22
<i>Education</i>				
Did not Complete High School	20	15	5.96*	16
Completed High School or GED	20	27	6.82**	26
Some College Education (no Bachelor's Degree)	53	51	0.36	51
Completed 4-year Degree or More	7	7	0.04	7
<i>Employment</i>				
Employed Full-time	41	62	56.43***	59
Employed Part-time	28	22	7.56***	23

continued

Table 1

Continued

<i>Variables</i>	<i>Education Savers (N = 377)</i>	<i>Non-education Savers (N = 1,976)</i>	<i>Comparisons of Education and Non-education Savers</i>	<i>ADD Participants (N = 2,353)</i>
<i>Categorical Variables</i>	<i>Percents</i>	<i>Percents</i>	<i>t / χ^2</i>	<i>Percents</i>
<i>Employment</i>				
Not working or Unemployed	9	10	0.75	10
Students	22	6	100.01***	8
Banked	75	77	0.55	77
Home Owner	14	16	1.39	
<i>Receipt of AFDC/TANF</i>				
Formerly	30	39	11.0***	38
Currently	7	11	3.26	10

* $p \leq .10$, ** $p \leq .05$, *** $p \leq .01$.

AMND. Participants who received welfare, those who did not have home or bank account ownership, and African-American participants saved less. The mean value of AMND of education savers (\$19.8) and that of other savers (\$18.4) was not different from each other in bivariate analysis. Among program factors, participants with higher match rates saved less, and those who used direct deposits saved more.

Regression Analysis of Savings Outcomes

Table 3 displays the results from the regression analysis on AMND. The model as a whole was statistically significant ($p = 0.01$) and explained about 22 percent of the variance in the dependent variable.

Effects of program and participant factors. Three of the four program factors were positively related to AMND. Participants who had higher monthly savings target and those who used direct deposit saved more. Hours of financial education was also positively linked with AMND. These findings suggest that these three institutional incentives facilitate participants' savings in IDAs.

Table 2

Bivariate Analyses: AMND by Subgroups

	AMND (\$)	Analysis of Variance (F vales) / t test (t value)
<i>Institutional Characteristics</i>		
Match Rate		
1:1	21.5	F = 7.15***
2:1	17.6	
3:1	18.1	
4:1 to 7:1	11.5	
Use of Direct Deposit to IDAs		
Yes	26.2	t = 3.44***
No	18.5	
<i>Participant Characteristics</i>		
Gender		
Female	17.6	t = -2.73***
Male	21.3	
Race/Ethnicity		
Caucasian	23.1	F = 51.4***
African-American	12.9	
Others	23.0	
Marital Status		
Never Married	14.5	F = 30.1***
Married	23.9	
Divorced, separated or widowed	20.6	
Education		
No High School Diploma	13.6	F = 20.2***
High School Graduates	16.1	
Some College, Less than Bachelor's Degree	19.1	
Bachelor's Degree or More	30.3	
Employment		
Unemployed or not working	15.4	F = 2.54
Employed, full-time	15.4	
Employed, part-time	18.7	
Students, working or not working	19.2	
Home Owner		
Yes	28.4	t = 7.68***
No	16.5	

continued

Table 2

Continued

	AMND (\$)	Analysis of Variance (F vales) / t test (t value)
Checking or Savings Account		
Yes	20.9	t = 10.63***
No	10.1	
Receipt of Public Assistance		
TANF or AFDC Never	20	F = 14.2***
TANF or AFDC formerly	17.6	
TANF or AFDC currently	11.1	
Intended Users of Education		
Yes	19.8	t = 1.20
No	18.1	

* $p \leq .10$, ** $p \leq .05$; *** $p \leq .01$.

Higher match rates, however, were negatively associated with AMND. Specifically, participants with match rates 4:1 to 7:1 saved less than those who had match rates ranging from 1:1 to 3:1. The study by Schreiner (2004) of all ADD participants found similar results, i.e., match rates was associated with less AMND.

There are a couple of possible explanations for the negative links between match rates and savings in IDAs. First, programs may assign higher match rates if they expect their participants to save less. In this case, cause-and-effect is reversed, and (expectations of) low savings lead to higher match rates. Second, because IDA participants are saving for a specific purpose, and they generally have limited incomes, some participants could be "target savers". In other words, they may aim to save a fixed amount and stop saving more (for example, they may aim to save \$2,000 for tuition, or to save \$1,500 for the down payment of a house). For these participants, a higher match rate allows them to reach a given asset-accumulation target with less savings (Schreiner, 2004).

Table 3

Regression Analysis on Average Monthly Net Deposits (AMND)

	<i>Main Effects</i>		<i>Interaction Effects</i>	
	<i>Coefficient</i>	<i>p-value</i>	<i>Coefficient</i>	<i>p-value</i>
<i>Institutional Characteristics</i>				
Match Rate				
(4:1 to 7:1)				
1:1	7.76***	0.003	5.19	0.49
2:1	6.94***	0.003	10.17	0.15
3:1	9.67***	0.001	13.06*	0.08
Monthly Savings Target	0.18***	0.001	0.08	0.21
Use of Direct Deposit to IDAs	3.95*	0.08	6.69	0.35
Hours of General Financial Education	0.49***	0.001	0.71***	0.003
<i>Participant Characteristics</i>				
Age	0.16**	0.01	-0.06	0.72
Female	2.56*	0.09	-9.05**	0.01
Race/Ethnicity				
(Caucasian)				
African-American	-7.87***	0.001	3.50	0.29
Others	1.68	0.33	6.23	0.11
Marital Status				
(Never Married)				
Married	1.86	0.30	-11.88**	0.02
Divorced, separated or widowed	0.19	0.89	-0.75	0.85
Number of children	-0.64	0.12	1.11	0.31
Number of adults	2.33**	0.01	-0.85	0.71
Education				
(No High School Diploma)				
High School Graduates	0.91	0.62	-1.07	0.83
Some College, Less than Bachelor's Degree	2.92*	0.09	3.75	0.41
Bachelor's Degree or More	8.96***	0.001	8.96	0.19
Employment				
(Unemployed or not working)				
Employed, full-time	-1.90	0.34	0.26	0.96
Employed, part-time	0.04	0.98	2.46	0.65
Students, working or not working	1.11	0.70	10.14*	0.09

continued

Table 3

Continued

	<i>Main Effects</i>		<i>Interaction Effects</i>	
	<i>Coefficient</i>	<i>p-value</i>	<i>Coefficient</i>	<i>p-value</i>
Household Monthly Income	0.003***	0.003	0.003	0.25
Home Owner	3.72**	0.04	7.89*	0.07
Having Checking or Savings Account	5.27***	0.001	-2.94	0.41
Receipt of Public Assistance (TANF or AFDC Never)				
TANF or AFDC formerly	-2.02	0.13	4.95	0.17
TANF or AFDC currently	-0.14	0.95	-6.30	0.27
Intended users of education	-10.41	0.55	—	—
Intended users of home purchase	5.88	0.65	—	—
Intended users of home repair	12.83	0.32	—	—
Intended users of microenterprises	6.92	0.59	—	—
Intended users of retirement	10.33	0.43	—	—
Intended users of job training	5.14	0.70	—	—
F			9.71	
R ²			0.22	
N			1,979	

* $p \leq .10$, ** $p \leq .05$; *** $p \leq .01$.

Four demographic characteristics of participants were related to AMND: age, gender, race/ethnicity, and number of adults. Contrary to the findings from bivariate analysis, female participants saved more than male participants. In other words, once other factors associated with being a woman (such as being African-American, being single, having kids, etc.) were taken into consideration, it turns out that being female per se is associated with higher savings. Older participants and those having more adults in households had higher AMND. When other factors in the regression constant, AMND was higher for Caucasians than for African Americans.

Among participants' socioeconomic characteristics, IDA sav-

ings were higher for those who attended some college or who had a degree. Also, participants with higher household monthly incomes saved more. This association, however, was not strong; a \$1 increase in monthly income was associated with about \$0.003 more AMND. Home owners and bank-account owners also saved more than participants without such assets.

Savings for post-secondary education. Analyses show that variables related to "education savers" (the stand-alone indicator and the interaction terms) explained about 2 percent of the variance in AMND. As a group, the variables related to "education savers" were statistically significant ($p < 0.05$) (based on the method of Pedhazur, 1997, p. 109), suggesting that savings outcomes were indeed different for "educational savers".

What factors were related to the differences? Table 3 indicates that being an "education saver" moderated the associations of several program and participant factors on AMND. Among program factors, the interaction with hours of education was positive and statistically significant. While an additional hour of financial education was linked with \$0.49 more AMND for any participant, regardless of whether they were an "education saver", an additional hour was associated with an additional \$0.71 for "education savers". Apparently, "education savers" derived greater benefits from financial education than did others. Thus, an additional hour of financial education was associated with \$1.20 (\$0.49 plus \$0.71) more AMND for "education savers" but only \$0.49 more AMND for others.

The interaction of education savers and match rates was negative and statistically significant. The education savers with a match rate of 3:1 saved much more than those with match rates between 4:1 and 7:1. Perhaps "education savers" are more likely than others to be "target savers" (targeting, for example, to save for tuition) for whom higher matches rates are associated with dampened savings.

Among participant demographic factors, savings for post-secondary education moderated the association of gender with AMND. While females in ADD on average saved \$2.56 more than males, female "education savers" saved \$9.05 less than female "non-education savers" and \$6.49 (\$9.05–\$2.56) less than male

participants. Thus, while women saved more than men overall after controlling for other factors, female saved less than the average male participant for "education savers".

Similarly, although married participants on the whole in ADD had higher AMND than not-married participants (p-value of 0.30), married "education savers" saved \$11.88 less than married "non-education savers" and \$10.02 (\$11.08–1.86) less than non-married participants. Married participants and female participants who planned to use their IDAs for post-secondary education saved much less than others.

What might explain this? In order to further understand how gender and marital status jointly affect savings, we did some additional analyses. Because these two variables appear in multiple places in the regression model with interactions (see Table 3), evaluating how they affect AMND is not straightforward. Thus, we computed the differences of AMND between the sample when every participant was assumed a single man, a single woman, a married man, or a married woman. Here is the specific method for the calculation: in a case when everyone was assumed to be a single man, we set female=0 and married=0 in the equation model derived from the regression model. The same method was used under three other assumptions. The results from these analyses indicate that single men saved the most for their postsecondary education, followed by single women and married men, and married women saved the least among the four groups. Therefore, it seems that women, especially married women, face more barriers to save for postsecondary education.

Turning to the interactions with participant socioeconomic factors, home owners who were "education savers" saved \$7.89 more than home owners who were not "education savers" and \$11.61 (\$7.89 + \$3.72) more than renters. It appears that home ownership may probably help with saving, especially for post-secondary education. Perhaps unsurprisingly, students who were "education savers" saved \$10.14 more than did students with different asset-accumulation goals. Perhaps the immediate saliency of the use of IDAs helped students save for post-secondary education. Or perhaps students shifted existing savings or financial aid into IDAs to take advantage of the match. In any case, it is

clear that, among “education savers”, students saved more than non-students.

Discussion and Implications

Discussion

We underscore several findings. First, being an “education saver” seems to strengthen the associations of some program factors with savings performance. For example, “education savers” seemed to benefit more from financial education than did others, perhaps because a higher percentage of education savers were students. Being a student might signal a greater motivation to learn and perhaps also better learning skills inasmuch as students are used to classroom learning and homework. The negative association between match rates and IDA savings was also stronger among “education savers”. The ADD data cannot reveal the reason for this, but it may be that “education savers” are also more likely to be “target savers” (targeting, for example, tuition).

Second, being an “education saver” also moderates the relationship between several participant characteristics and AMND. Female “education savers” saved much less than other female savers. Why did female “education savers” save less? Probably these women may face unique obstacles (for example, the need for child care) in their pursuit of post-secondary education. If they realize that they face these obstacles only after enrolling in IDAs and declaring their intent to save for post-secondary education, then this may explain their lower savings. Of course, another possible reason is that TANF rules act as limits on the access of welfare recipients to higher education, and low-income women with children are those most likely to be affected by TANF or—even if they are not currently on welfare—those who expect to possibly be affected by TANF rules in the future (Hurst & Ziliak, 2001).

Married “education savers” also saved much less than other married participants. Perhaps married participants who planned for post-secondary education found that going to school (or going back to school) was more difficult than single participants. For example, married participants may face responsibilities (for example, child care) or barriers within the household (for example,

unsupportive spouses) that unmarried men or women do not have. Our analysis further indicates that married women may especially face these or other related barriers.

"Education savers" who were students saved more than "education savers" who were not students. More than half of "education savers" either had some college education (38%) or already had a college degree (22%). Perhaps the pressures of paying for their education make saving for post-secondary education more salient for student savers. They do not have to think very far into the future to see how IDAs will be useful. In contrast, participants who are not already students are saving for a further-off goal and thus may end up savings less.

As a caveat on the interpretation of these results, we note that participants in ADD were both program-selected and self-selected. Therefore, ADD participants are not representative of the general low-income population. We cannot address self-selection into participation through ADD data. Thus, the results in this paper pertain to a particular portion of low-income population and must be tentative.

Implications

Implications for college savings plans. As mentioned, lack of financial resources has been a major barrier for low-income people to attend college. Many new forms of financial aid in recent years have been created to subsidize savings for postsecondary education (for example, Coverdell Education Savings, HOPE Scholarship and Lifetime Learning, and State College Savings Plans or "529 savings plans"), but these policies provide their subsidizes through tax breaks that are most irrelevant to low-income people (Clancy, Cramer, & Parrish, 2005). The findings of our study indicate that low-income people (especially some segments of low-income people) saved for postsecondary education in ADD. Thus, it may be helpful to include more low-income people in the college-finance toolkit.

For example, teaming IDAs with 529 plans may be one strategy to promote more inclusive IDAs for post-secondary education (Clancy, 2003; Clancy & Sherraden, 2003). One of the main features of 529 plans is that participation is not restricted by income, but is available to all. After-tax contributions to 529 plans accumulate

tax-free and are not taxed upon withdrawal if used for expenses for post-secondary education. All states but one sponsor 529 plans, and some states (Rhode Island, Michigan, and Louisiana) encourage savings by low-income households through matching provisions (Clancy, 2003). Given that 529 plans are run by government and that the government is a potential source of match funds, linking IDAs and 529 plans could help include more low-income households in subsidized savings policies aimed at post-secondary education. Some scholars indicate that 529 plans may carry significant risk for low-income families due to its high investment fees, penalties for non-educational uses, and possible negative interactions with college aid (Clancy, Orszag, & Sherraden, 2004). These concerns may need to be taken into consideration for the partnership of IDAs with 529 plans.

Implications for IDA designs. Our findings indicate that savings outcomes were different for “education savers” and that being an “education saver” moderated the associations of some other program and participant factors. These findings may help programs design IDAs that could improve savings outcomes for “education savers”. These results may also help understand what segments of participants benefited most from IDAs. We highlight several findings and their implications below.

We found that financial education was associated with greater savings for “education savers” than for others, probably because most of the education savers were already students and thus were better at being students than are non-students. This may imply that financial education in IDAs is not appropriate for adults and other non-students. Adopting the principle of adult education more completely in financial education of IDA programs may help address this concern (Hogarth & Swanson, 1995). The adult education principles in financial education highlight the importance of understanding learners’ (especially low-income learners) life context and experiences and bringing them into the teaching and learning process.

We also found that certain groups of low-income people had better savings outcomes for post-secondary education. First, students saved better for post-secondary education than non-students. This may indicate that salient goals help savings. IDA

programs may be able to encourage greater savings outcomes by helping to make savings goals salient, for example by role-playing the act of making an asset purchase. This may also suggest that participants who were already students benefited more from IDAs to save for post-secondary education than other participants possibly because these students were already "on track".

Second, it appears that being married and/or being a woman had more obstacles to save for their post-secondary education in IDAs. These findings may indicate that savings for post-secondary education probably are not very relevant for some participants. Due to household or resource related constraints, some participants were not able to save successfully for their college education. Thus, IDA program designs may need to be adjusted to accommodate needs of different segments of participants based on their specific life circumstances (Schreiner & Sherraden, forthcoming). For example, IDA programs may be able to increase their relevance to some participants by expanding the types of matched uses, such as job training, vehicle purchase, or child care, and these uses might provide more practical and immediate benefits to some portions of the low-income population (Edin, 2001). Programs with a different model maybe more appropriate for the post-secondary education of some groups (such as non-students, married women) of low-income people.

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