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Does Banking Experience Matter?

Differences of the Banked and Unbanked in Individual Development Accounts

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Using data from the 4-year American Dream Demonstration, this study compared saving performance and program participation of banked participants ($n = 1,538$) with unbanked participants ($n = 466$) enrolled in 14 IDA programs across the United States. The study found that unbanked participants had \$3.26 lower average monthly net deposit ($p < .05$) and 5% lower deposit frequency ($p < .001$) than banked participants. Unbanked participants had 45% greater odds of dropout than banked participants ($p < .001$). Further analyses looking at the intervening variables suggested that the combined effects of car ownership, education, race, and monthly savings targets significantly reduced the savings gap between the two groups.

Key words: IDAs, asset building, banked, unbanked, savings

An estimated 10 million Americans do not have bank accounts and rely on nonbank alternatives such as check-cashing outlets or money order purchases to handle everyday transactions (Caskey, 2002). These alternatives to conventional bank accounts are more costly, offer no access to conventional loans or incentives to save, and increase consumers' vulnerability to predatory services (Barr, 2004).

The adverse effect of not having a bank account for lower income households has been well documented in a considerable body of research. The costs associated with alternative financial services such as check cashing outlets are myriad: (a) the direct costs reduce take-home pay; (b) these services offer limited opportunities or incentives to save for household emergencies and long-term needs (Beverly and Sherraden, 1999; Caskey, 1997a); (c) alternative services make building credit and qualifying for a loan more difficult (Gale & Carney, 1998; Hogarth & O'Donnell, 1999; Kennickell, Starr-McCluer, & Surette, 2000); and (d) the consumer vulnerability to high-cost short-term credit such as payday loans or refund anticipation loans is greater (Barr, 2004). In addition, Barr (2004) noted various accounts reported in the popular press regarding the greater risk of robbery or theft among unbanked Latino households.

In recent years, the problems associated with not having a bank account, particularly among people of color and lower-income families, have caught the attention of policy makers, banks, and

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community-based organizations. For example, *First Accounts*, a pilot initiative launched in 2002 by the U.S. Treasury Department, is an example of the growing concern about and action on behalf of the unbanked population.

Various approaches to bringing the unbanked population into the banking mainstream include outreach efforts by conventional banks that offer low-cost accounts to underserved communities, and financial education efforts using curricula such as Federal Deposit Insurance Corporation's *Money Smart*. Another approach uses Individual Development Accounts (IDAs), which are matched savings accounts that provide low-income populations with incentives for saving, financial education, and a connection to mainstream financial institutions. To date, IDAs have been offered as a time-limited program in which the matched savings are added to the individual's account at the time funds are withdrawn for the purchase of program-approved assets such as a house, postsecondary education, or microenterprise.

This study compares the saving performance and dropout risk between banked and unbanked participants in IDA programs and identifies the variables that reduced the savings and participation gaps between banked and unbanked participants. As such, this study is the first careful investigation into the program experiences of banked and unbanked participants in IDAs, and the factors associated with program participation and performance.

Literature Review

Compared to higher-income households, low-income households are much less likely to own bank accounts (Aizcorbe, Kennickell, & Moore, 2003; Barr, 2004; Berry, 2004; Caskey, 2000; Dunham, 2001; Hogarth & Lee, 2000). In their analysis of data from the 2001 *Survey of Consumer Finances*, Aizcorbe, Kennickell, and Moore (2003) found that 29% of families whose incomes were in the bottom 20th percentile were unbanked compared to slightly more than 9% among all American families. This same study found that among unbanked families, nearly 60% had incomes in the lowest 20th percentile. In addition, Vermilyea and Wilcox (2002) found that 83% of the unbanked had an annual income below \$25,000, based on a sample of 2,000 low- and moderate-income persons in New York City and Los Angeles who completed the Survey of Financial Activities and Attitudes.

Without access to conventional bank accounts and bank services, it is difficult for families to save and build financial assets. For example, families with bank accounts were more than twice as likely to have savings as compared to unbanked families (Dunham, 2001). Similarly, Stegman (2001) found that although more than 90% of unbanked families had no retirement accounts, this proportion was less than 50% among banked families. Further, among more than half of the unbanked families in America, an automobile was the only family-owned asset (U.S. Department of Treasury, 2000).

For many low-income families, the lack of access to bank accounts and banking institutions translates into reliance on alternative nonbank businesses such as check cashing outlets, payday lenders, title lenders, refund anticipation loans, and pawn shops to conduct their basic financial transactions (Barr, 2004; Fox, 1999; Jacob, Hudson, & Bush, 2000; Rhine et al., 2001; Wu, Fox, & Renuart, 2002). For example, Rhine and her associates (2001) found that unbanked households were nearly 15% more likely than their banked counterparts to patronize a currency exchange in the Chicago Metropolitan area. The unbanked's dependence on these nonbank businesses for financial

services makes it more difficult for unbanked families to establish credit histories that are needed to secure conventional bank loans and other forms of credit. In addition, these nonbank alternatives frequently impose high fees for their services (Fox, 1999; Kennickell, Starr-McCluer, & Surette, 2000; Wu, Fox, & Renuart, 2002) that erode earnings and limit the ability to save.

A number of studies have examined why the rate of unbanked households is so high among low-income households (e.g., Aizcorbe, Kennickell, & Moore, 2003; Berry, 2004; Caskey 1997*a*, 1997*b*, 2000; Hogarth, Anguelov, and Lee 2004; Hogarth and Lee 2000; Kennickell, Starr-McCluer, and Surette 2000). Several of these studies found that a lack of sufficient income to save and to justify maintaining a checking account based on both the real and perceived costs posed a significant barrier to having a bank account (Aizcorbe, Kennickell, & Moore, 2003; Berry, 2004; Caskey, 2000). In addition, other important “hard” barriers to owning a bank account included lack of required identification and bad credit history (Berry, 2004). Conversely, “soft” barriers, such as feeling unwelcome in the banking environment or not speaking English, were infrequently cited as reasons for being unbanked (Berry, 2004).

Further, other studies have indicated that reasons for not having a checking account have shifted from account features (e.g., bank fees) toward institutional factors and human capital reasons such as lack of knowledge regarding account management or lack of other information (Hogarth, Anguelov, & Lee, 2004).

Related to institutional factors, Berry (2004) found that network factors, including whether friends have bank accounts or whether personal checks are accepted as payment by landlords or local stores, posed an important barrier to having a checking account among low-income neighborhood residents (Berry, 2004). In addition, the lack of bank distribution systems in low-income neighborhoods has been noted as a critical institutional barrier (Barr, 2004).

Human capital factors, such as lack of knowledge, experience, and information, have also been shown as important reasons for remaining unbanked. Findings from an evaluation of financial education programs targeted toward the low-income population in Illinois indicated that participants had little knowledge concerning interest rates, automatic teller machine (ATM) card use, or how to open a bank account (Zhan, Anderson, & Scott, 2006). Similarly, Berry (2004) found that low-income people without a checking account lacked knowledge of the complexity of opening and managing an account. In addition, multiple studies have found that many recipients of public assistance believed that bank account ownership would adversely affect their eligibility for these benefits (Caskey, 1997*b*; Hogarth & Lee, 2000).

Indeed, research has produced inconsistent findings regarding whether the unbanked understand the comparative costs associated with banks and alternative financial services. Some studies have indicated that the unbanked might overestimate the cost of owning an account, or underestimate the costs of using alternative financial services (Hogarth & Lee, 2000). However, other studies have determined that the unbanked understood these costs well, and that those who chose nonbank alternatives rather than conventional banks were primarily motivated by convenience (Berry, 2004; Dunham, 2001).

Within the last decade, the IDA has emerged as a new approach to helping low-income persons become part of the financial mainstream. IDA programs offer low-income persons the opportunity

to establish savings accounts for the purpose of building assets, and offer the help of institutional and program support as well as incentives. IDA programs match participants' savings at various rates based on their intended goal, require participants to attend financial education classes, and provide participants with a connection to mainstream financial institutions. Account holders receive matching funds as they save for purchase of approved asset-building purposes such as homeownership, postsecondary education, job training, microenterprise, or other investments that promote long-term development and financial well-being (Sherraden, 1988, 1991). IDA program participants attend general financial and asset-specific education classes, work with a case manager, and have the opportunity to develop supportive peer relationships with others in the program.

The purpose of this study was to compare the saving performance and dropout risk between banked and unbanked participants in IDA programs, and to identify the variables that reduced the savings and participation gap between banked and unbanked participants. Specifically, this study tested the following questions: (1) What were the differences in individual and program characteristics between the banked and unbanked IDA participants? (2) What were the differences in saving outcomes and program participation between these two groups? (3) If a difference exists in the saving outcomes and the program participation rates between the banked and unbanked groups, which variables act to decrease this gap?

Method

Data and Sample

The data used in this study was obtained from the American Dream Demonstration (ADD), which was the first large-scale test of IDAs designed to study the merits of IDAs as a community development and public policy tool (Sherraden et al., 2000). Between 1997 and 2002, the ADD research followed more than 2,000 low-income participants (i.e., at or below 200% of the federal poverty level) at 14 community-based IDA program sites across the United States. Both the program and the participant data were collected by ADD program staff using the Management Information System for Individual Development Accounts (MIS IDA). Using the MIS IDA quality control software, the data was checked for data entry errors, outliers, missing cases, and inconsistencies. As such, this data may be the best available data set on savings patterns among low-income families in the United States (Sherraden, 2002).

In addition, the MIS IDA data was complemented by a program survey data set that was obtained from a survey conducted with the administrative personnel at the 14 ADD sites. The survey data was collected using face-to-face and telephone interviews. The design of the survey instrument was based on constructs offered by institutional theory (Ssewamala & Sherraden, 2004). The purpose of this survey was to collect additional information on how these programs support and operate IDA programs.

Table 1 presents descriptive statistics of the IDA participants in ADD and compares the participants to a sample of the general low-income population obtained from the *2000 National Longitudinal Survey of Youth*. The NLSY sample included respondents whose household income was at or below 200% of the federal poverty threshold. Compared to the NLSY sample, ADD participants were more likely to be female, black, and single. In addition, ADD participants were more educated and more likely to be employed full-time, but less likely to own either a home or a car.

Table 1. Characteristics of ADD Participants Compared with General Sample of Low-Income Population

Variables	ADD Sample (N=2,364)			NLSY Sample (N=1,869)		
	M	S.D.	Range	M	S.D.	Range
Age	35.67	10.29	13 - 72	38.99	2.31	35 - 43
Female	.80	.40	0 - 1	.57	.49	0 - 1
Rural	.13	.34	0 - 1	.31	.47	0 - 1
Race/ Ethnicity						
White	.37	.48	0 - 1	.57	.49	0 - 1
Black	.47	.50	0 - 1	.25	.43	0 - 1
Latino/ Hispanic	.09	.28	0 - 1	.09	.28	0 - 1
Other ethnicity	.07	.26	0 - 1	.09	.28	0 - 1
Education						
Graduated from college	.22	.41	0 - 1	.07	.26	0 - 1
Attended some college	.37	.48	0 - 1	.21	.41	0 - 1
Completed high school	.26	.44	0 - 1	.51	.50	0 - 1
Did not complete high school	.16	.36	0 - 1	.21	.41	0 - 1
Marital Status						
Single	.49	.50	0 - 1	.24	.43	0 - 1
Divorced/Separated/ Widowed	.29	.46	0 - 1	.37	.48	0 - 1
Married	.22	.41	0 - 1	.39	.49	0 - 1
Employment						
Full time	.59	.49	0 - 1	.44	.50	0 - 1
Part time	.23	.42	0 - 1	.18	.38	0 - 1
Student	.08	.27	0 - 1	.01	.04	0 - 1
Unemployed	.10	.29	0 - 1	.37	.48	0 - 1
Household Composition						
Number of adults	1.47	.69	0 - 6	1.72	.98	1 - 11
Number of children	1.74	1.49	0 - 10	1.56	1.49	0 - 9
Home ownership	.16	.36	0 - 1	.44	.49	0 - 1
Car ownership	.65	.48	0 - 1	.73	.44	0 - 1
Household Income	1,380	701	0 - 5,480	1,371	953	0 - 4,978

* $p < .05$; ** $p < .01$; *** $p < .001$

The MIS IDA data includes 2,364 participants. In this study, three independent variables had more than 5% of their cases missing. These independent variables were direct deposit (5.5% missing), peer group meeting (6.0% missing), and number of deposit locations (6.0% missing). The majority of the variables had no missing cases at all. After deleting observations in a listwise fashion, the final analytic sample for this study is 2,004 participants. Missing data analysis suggested that the missing is at random. Among the 2,004 participants at the time of program entry, 466 participants did not have any checking or savings account other than the IDA, and 1,538 participants were identified as owners of an existing checking or savings account.

Measurement

Dependent variables. Three dependent variables measured savings in IDA programs or program participation: the average monthly net deposit (AMND), deposit frequency, and program dropout. The AMND and deposit frequency captured the two major aspects of savings: amount and regularity. Program dropout is a key indicator of successful program activity.

The definition of AMND is net deposits per month, and it was calculated as deposits plus interest minus unmatched withdrawals, divided by the number of months of participation. Thus, AMND controls for the length of participation in the program. Net deposits included matched withdrawals, but excluded deposits in excess of the match cap (i.e., the maximum amount eligible for matching funds) or deposits made after the time cap. Although excess deposits, late deposits, and unmatched withdrawals were savings in IDAs, these deposits were not eligible for matched funds and, therefore, such deposits were not considered as part of the net deposits. In this study, AMND is the key measure of savings outcomes because greater AMND implies greater savings and asset accumulation (Schreiner et al., 2001).

Deposit frequency was defined as the number of months with a deposit divided by the number of months of IDA program participation. The variable for deposit frequency indicated how regularly a participant has saved, and also functioned as an important indicator of whether program participants had acquired the habit of saving. Further, deposit frequency may even be an indicator of whether participants will continue to save after graduating from the IDA program.

The program dropout variable was a dichotomous measure. If participants dropped out of the program without a matched withdrawal, they were coded 1; otherwise they were coded 0. Given that when participants drop out, the IDA programs lose their investment in participants and the participants lose the potential matched funds, program dropout is an important issue for successful and sustainable IDA programs. Moreover, participants who drop out of IDA programs may become discouraged with the process of saving and asset building in general. (Schreiner & Sherraden, 2002).

Independent variables. The independent variables in this study included various individual and program characteristics. Individual demographics included age (in years); gender (*female* coded as 1, and *male* coded as 0); rural/urban residence (*rural* coded as 1, *urban* coded as 0); a set of dummies that measured marital status: *single*, *divorced/separated*, or *married* (the reference group); *number of children* (under 18 years); and *number of adults* (18 years and older) in the household. We also included a set of dummy variables that indicated whether the participants identified their race as *black*, *Latino* or *Hispanic*, *white* (the reference category), or *other* category. Another set of dummies measured the educational attainment of participants: *do not have a high school diploma* (reference group), *high-school diploma*, *some college but no degree*, and *graduated from college*. A participant's employment status was measured by whether he or she was employed *full time* (i.e., more than 35 hours per week), employed *part time* (i.e., less than 35 hours per week), *unemployed* (reference group) or a *student*.

Participants' financial characteristics included monthly household income; car ownership (*yes* coded as 1, *no* coded as 0); and home ownership (*yes* coded as 1, *no* coded as 0). For the purpose of interpretation, we divided the household income by 100 for the regression analyses.

Several program characteristics were included in the analyses: direct deposit, match rate, financial education, monthly savings target, peer group meetings, and the number of deposit locations. Although all of these variables captured program characteristics, they were subject to the rules and restrictions that were determined by the different programs. With the exception of peer group meetings and the number of deposit locations, all other variables were measured at the individual level.

The first program variable considered was match rate. Four dummy variables measured the different match rates that participants received; 1:1 (reference group), 2:1, 3:1, and those in the range of 4:1 to 7:1. Although the match rate is a program characteristic, it is measured at the individual level; individual programs typically offered participants different match rates based on their intended purpose for their savings. For example, one program offered a match rate of 1:1 to people who saved for education but offered a match rate of 2:1 for people who saved for homeownership.

The second program variable was the use of direct deposit. This variable measured whether an individual used direct deposit (*yes* coded as 1, *no* coded as 0). The third program variable, monthly savings target, was calculated as the total match cap (i.e., the limit on the amount of deposits eligible for matched funds) divided by the time cap (i.e., the number of months after opening an IDA account in which a participant may make deposits eligible for matched funds). The monthly savings target variable is also measured at the individual level because IDA programs typically use a rolling admissions procedure that allows participants to enroll at different times. Participants who enrolled after the initial start date had fewer months in which they could make matchable deposits. Therefore, the monthly savings target was adjusted for each new participant.

The fourth program variable, the peer group meeting, asked whether programs offered peer group meetings of IDA participants in addition to the financial education classes. This variable indicated whether the program in which an individual was enrolled offered peer group meetings (*yes* coded as 1, *no* coded as 0).

The fifth program variable was the number of deposit locations. This is a continuous variable that identifies the number of deposit locations that were available to participants. Previous study found that the number of deposit locations was significantly related to saving performance among MIS IDA participants (Ssewamala & Sherraden, 2004).

The final program variable was the number of hours of financial education classes taken by participants. As part of the ADD program design, IDA participants were required to attend free general financial education classes as well as asset-specific financial education classes. The general financial education classes covered material regarding financial management and saving strategies, and included topics such as how to create a budget, how to manage money, and how to repair or establish credit records. The asset-specific classes provided information on the participant's desired asset. Our analysis included a measure of general financial education, which depicted the number of hours of financial education taken by a participant. The various programs required and offered different ranges of financial education classes. Each program had the flexibility to determine its own rules regarding financial education classes, and each participant (even within the same program) used different levels of service.

Analysis

This study focused on the differences in the saving outcomes and program dropout between banked and unbanked IDA participants. Moreover, this study examined which independent variable or set of independent variables might decrease the gap in saving outcomes and program participation between the banked and unbanked groups.

Descriptive statistics were produced to characterize banked and unbanked IDA participants in the ADD programs. To answer the first question about the differences in the individual and program characteristics between the banked and unbanked groups, we conducted t tests and chi-squares tests.

To address the second question on the differences in saving outcomes and program participation, we conducted regression analyses controlling for individual and program characteristics. Because the AMND and deposit frequency were continuous measures, we applied ordinary least squares (OLS) regression analyses. Because program dropout was a dichotomous measure, we conducted logistic regression analysis.

To answer the last question that sought to identify which variables explained the savings and program participation between two groups, we conducted a series of regression models. We hypothesized that one or more other covariates acted as intervening variables to reduce the gaps in savings outcomes and program participation between banked and unbanked IDA participants. First, each of the outcome variables (i.e., AMND, frequency, and dropout) were regressed on a dummy variable by banked/unbanked. Then a series of regressions added an additional covariate (in addition to the dummy variable for banked/unbanked) as a dependent variable.

For continuous outcomes (i.e., AMND, deposit frequency), we applied the Welch Satterthwaite t test (Satterthwaite, 1946) to determine whether the banked/unbanked variable was reduced to a statistically significant degree in the presence of this intervening variable.

For the dichotomous outcome (i.e., dropout), we applied a likelihood ratio test to test whether the model was significantly improved by inclusion of additional variables.

Results

Differences in Characteristics, Saving Outcomes, and Program Participation Between Banked and Unbanked Participants

Table 2 shows the characteristics of banked and unbanked IDA participants. Most individual characteristics were found to be significantly different for the two groups. The majority of banked participants were white while the majority of unbanked participants were black. Compared to banked participants, unbanked participants were more likely to be younger, less educated, single, and less likely to be employed full time. Unbanked participants were also more likely to have more children and adults in their household. Regarding financial backgrounds, unbanked participants showed lower rates of both home ownership and car ownership, and had lower household incomes.

Table 2. Sample Characteristics and Program Outcomes by Bank Account Ownership

Variables	With Account (<i>n</i> = 1538)		Without Account (<i>n</i> = 466)		χ^2/t
	<i>M</i>	<i>S.D.</i>	<i>M</i>	<i>S.D.</i>	
<i>Individual characteristics: Social demographics</i>					
Age	36.28	10.23	34.03	10.18	-4.16***
Female	0.80	0.40	0.79	0.41	0.08
Rural	0.13	0.34	0.10	0.30	3.38
Race/Ethnicity					
White	0.42	0.49	0.25	0.43	47.18***
Black	0.41	0.49	0.60	0.49	48.30***
Latino	0.08	0.27	0.11	0.31	2.89
Other	0.08	0.27	0.05	0.22	5.13*
Education					
Graduated from college	0.26	0.44	0.09	0.29	58.85***
Attended some college	0.41	0.49	0.29	0.45	23.40***
Completed high school	0.22	0.42	0.32	0.47	18.04***
Did not complete high school	0.10	0.31	0.30	0.46	107.36***
Marital Status					
Single	0.45	0.50	0.58	0.49	22.28***
Divorce/Separated/Widowed	0.32	0.47	0.23	0.42	16.29***
Married	0.22	0.42	0.20	0.40	1.52
Employment					
Full time	0.61	0.49	0.52	0.50	13.40***
Part time	0.23	0.42	0.21	0.41	0.50
Student	0.06	0.24	0.15	0.36	36.29***
Unemployed	0.09	0.29	0.12	0.32	2.12
Household composition					
Number of adults	1.46	0.68	1.54	0.75	2.04*
Number of children	1.65	1.44	2.00	1.65	4.09***
<i>Individual characteristics: Financial backgrounds</i>					
Home ownership	0.18	0.39	0.09	0.29	21.27***
Car ownership	0.74	0.44	0.41	0.49	174.92***
Monthly household income	1,442.01	714.70	1,165.30	639.95	-7.95***
<i>Program characteristics</i>					
Match rate					
1:1	0.26	0.44	0.23	0.42	1.95
2:1	0.51	0.50	0.51	0.50	0.001
3:1	0.14	0.35	0.14	0.35	0.03
4:1 to 7:1	0.03	0.17	0.04	0.20	1.90
Direct deposit	0.07	0.26	0.02	0.14	18.05***
Monthly saving targets	43.93	21.37	36.62	19.30	-6.98***
Peer group meetings	0.35	0.48	0.27	0.45	9.10**
Financial education	10.42	5.64	9.31	7.25	-3.05**
Number of deposit locations	17.20	20.94	13.17	16.13	-4.40***
<i>Saving outcomes and program participation</i>					
AMND	22.24	25.49	10.16	19.49	-10.85***
Deposit frequency	0.52	0.28	0.38	0.26	-9.60***
Dropout	0.25	0.44	0.50	0.50	99.09***

p*<.05; *p*<.01; ****p*<.001

Program characteristics (except match rate) between the two groups were significantly different as well. Compared to unbanked participants, banked participants had participated in more hours of financial education, had more deposit locations, and greater monthly saving targets. The rate of direct deposit and peer group meetings were also significantly higher for banked participants. There was no significant difference in the match rate between the two groups.

There were highly significant ($p < .001$) differences in saving outcomes and program dropout rates between the two groups. The AMND among banked participants (\$22) was more than twice that of unbanked participants (\$10), and the result of t tests indicated the difference was significant ($p < .001$). The difference in deposit frequency between banked participants (0.52) and unbanked participants (0.38) was statistically significant as well ($p < .001$). The dropout rate among the unbanked participants (0.50) was twice that of banked participants (0.25; $p < .001$).

Bank Account Ownership, Saving Outcomes and Program Participation

Table 3 summarizes the outputs from three regression analyses on the AMND, deposit frequency, and program dropout, after adjusting for the differences in individual and program characteristics. The AMND was \$3.26 more for banked participants than unbanked participants. Banked participants had a 5% greater monthly deposit frequency than unbanked participants. In addition, the likelihood of dropout among banked participants was significantly lower than that of unbanked participants. The odds of dropout for banked participants was 55% of the odds for participants without a bank account.

Further, we found that participant age was statistically related to deposit frequency. Each additional year of age was associated with a 0.2% increase in deposit frequency. However, rural residency was associated with negative saving outcomes. Rural participants had \$4.01 less in the AMND, and 10% less frequency of deposits. In addition, black participants demonstrated both smaller total saving amounts and less frequent deposits. Compared to white participants, black participants had \$4.19 less in AMND, and 5% lower deposit frequency. The other race/ethnicity category was found to be a significant predictor of dropout. The odds of dropout for participants who identified as other race/ethnicity were 96% of the odds for dropout among white participants.

The number of adults in the household was statistically related to AMND. Each additional adult in the household was associated with a \$2.38 increase in AMND. Education level was a significant predictor of both savings amount and program dropout. The AMND for participants who graduated from college was \$5.49 greater than that of the participants with no high school education. The odds of dropout among the participants who graduated from college was 58% less than the participants with no high school education. Compared to participants who were unemployed, student status was statistically associated with both savings amount and program dropout. Students had \$7.50 greater in monthly saving amounts than did the unemployed participants. In addition, students had odds of dropout that were 58% of the odds of dropout among the unemployed participants. Home ownership was a strong predictor for all three outcomes. The participants who owned a home had \$9.10 greater AMND, and 8% greater deposit frequency. The likelihood of dropout for the participants who owned a home was also statistically less than that of participants who were not homeowners.

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Table 3. Regression Analyses for AMND, Frequency and Program Dropout

Variables	AMND		Frequency		Drop out		O.R.
	<i>b</i>	<i>s.e.</i>	<i>b</i>	<i>s.e.</i>	<i>b</i>	<i>s.e.</i>	
Intercept	-23.90***	4.38	0.12*	0.05	2.98***	0.50	
Bank account	3.26*	1.27	0.05***	0.01	-0.59***	0.13	0.55
Age	0.07	0.05	0.002*	0.001	-0.001	0.01	1.00
Female	-0.12	1.31	-0.02	0.01	-0.09	0.15	0.92
Rural	-4.01*	1.75	-0.10***	0.02	-0.08	0.22	0.92
Race/Ethnicity							
(White)							
Black	-4.19***	1.27	-0.05**	0.01	-0.08	0.14	0.92
Latino	3.31	1.93	-0.05	0.02	-0.27	0.22	0.76
Other	2.10	1.96	-0.01	0.02	-0.96***	0.26	0.38
Marital Status							
(Married)							
Single	-0.30	1.59	-0.02	0.02	0.16	0.18	1.17
Divorce/Separated/Widowed	1.17	1.66	0.01	0.02	0.12	0.19	1.13
Number of children in household	-0.62	0.36	-0.01	0.004	-0.02	0.04	0.98
Number of adults in household	2.38**	0.82	-0.01	0.01	-0.09	0.09	0.91
Education							
(Did not complete high school)							
Completed high school	0.71	1.62	0.01	0.02	-0.20	0.17	0.82
Attended some college	1.58	1.57	0.002	0.02	-0.54**	0.17	0.58
Graduated from college	5.49**	1.75	0.04	0.02	-0.88***	0.20	0.42
Employment							
(Unemployed)							
Part time	1.92	1.88	0.03	0.02	-0.41	0.21	0.67
Full time	0.35	1.78	0.01	0.02	-0.29	0.20	0.75
Student	7.50**	2.35	0.01	0.03	-0.54*	0.26	0.58
Home ownership	9.10***	1.48	0.08***	0.02	-0.87***	0.20	0.42
Car ownership	2.51*	1.16	0.02	0.01	-0.30*	0.12	0.74
Monthly Household Income	0.25**	0.08	-0.002	0.001	0.02*	0.01	1.02
Direct deposit	3.71	2.05	0.23***	0.02	-1.04**	0.32	0.35
Match rate							
(1:1)							
2:1	-1.00	1.24	0.02	0.01	-0.12	0.14	0.89
3:1	-3.54	2.06	0.17***	0.02	-0.11	0.24	0.90
4:1 to 7:1	-4.21	3.12	0.01	0.04	-0.11	0.36	0.90
Financial education	0.86***	0.09	0.01***	0.001	-0.13***	0.01	0.89
Monthly saving targets	0.33***	0.03	0.003***	0.0003	-0.02***	0.004	0.98
Peer group meetings	14.26***	1.42	-0.01	0.02	-0.48**	0.16	0.62
Number of deposit locations	0.09**	0.03	0.001**	0.0003	-0.003	0.003	1.00
N	2004		2004		2004		
R ² /-2DLL	0.26		0.27		2041.450		
F / Wald	24.27***		26.30***		323.76***		

p*<.05; *p*<.01; ****p*<.001

Further, our analysis showed that the match rate was a significant predictor, but only for deposit frequency. A match rate of 3:1 was associated with a 17% increase in deposit frequency when compared to the deposit frequency of participants who received a match rate of 1:1. The hours of financial education and the monthly saving targets were significant predictors for saving outcomes and program dropout. Each additional hour of financial education was associated with an \$0.86 increase in AMND, a 1% increase in deposit frequency, and a 12% decrease in the odds of program dropout. A dollar increase in the monthly saving target was associated with a \$0.33 increase in AMND, a 0.3% increase in deposit frequency, and a 2% decrease in the odds of dropout.

In addition, we found that peer group meetings were a significant predictor for both AMND and program dropout. Participants who participated in peer group meetings had an increase of \$14.26 in the AMND, and a 38% decrease in their likelihood to dropout. Finally, each additional deposit location was significantly associated with \$0.09 increase in the AMND, and 0.1% increase in deposit frequency.

Variables Related to Decrease in the Gap of Saving Outcomes and Program Dropout Between Banked and Unbanked Participants

Table 4 summarizes the results from a series of regression models that evaluated the extent to which covariates acted as intervening measures, and reduced the gap of saving and program participation between bank account owners and participants who did not own bank accounts prior to the IDA program. First, the dependent variables were regressed on a dummy variable by bank ownership (*banked* coded as 1, *unbanked* coded as 0). This analysis revealed statistically significant differences in program performances. Banked participants were estimated to save \$12.08 more on AMND and have deposit frequencies that were 13.5% greater than unbanked participants. The odds of dropout for banked participants was 34.4% of the odds for unbanked participants. Subsequently, all other covariates were entered separately as intervening variables to determine if the reduction in the bank ownership coefficient was statistically significant.

As illustrated in Table 4, for continuous outcomes, AMND and deposit frequency, the first and second columns present the coefficient and standard error of the bank ownership coefficient for each of the outcome variables with a different covariate entered each time. The third column presents the percentages of change for the bank ownership coefficient by adding an additional variable. The fourth column presents the Satterthwaite *t* test results for testing whether the reduction of the coefficient on the bank ownership variable is statistically significantly reduced in the presence of the different covariates. Regarding the dichotomous outcome (i.e., program dropout) odds ratios are presented instead of coefficients, and percentage change reflects the changes of odds ratio by adding additional covariate. Because the Satterthwaite *t* test is not applicable to a dichotomous measure, alternatively chi-square statistics based on a likelihood ratio test were used to test if additional covariates significantly improved the model fit.

DOES BANKING EXPERIENCE MATTER?

Table 4. Variables Related to Decreased Differences in Savings Outcomes and Program Participation Between Banked and Unbanked Participants

Variables	AMND				Frequency				Dropout			χ^2
	b	S.E.	% change	t	b	S.E.	% change	t	O.R.	S.E.	% change	
Bank account (No covariates)	12.075	1.281			0.135	0.015			0.344	0.110		
Bank account with:												
Age	11.523	1.280	-4.57	-0.305	0.127	0.014	-5.93	-0.390	0.354	0.110	2.91	10.133**
Female	12.090	1.280	0.12	0.008	0.136	0.015	0.74	0.047	0.344	0.110	<0.01	0.661
Rural	12.100	1.283	0.21	0.014	0.136	0.015	0.74	0.047	0.347	0.110	0.87	9.674**
Race	10.166	1.271	-15.81	-1.058	0.119	0.015	-11.85	-0.754	0.373	0.112	8.43	30.616***
Marital status	11.339	1.276	-6.10	-0.407	0.125	0.014	-7.41	-0.487	0.355	0.111	3.20	16.245***
Children	11.876	1.287	-1.65	-0.110	0.133	0.015	-1.48	-0.094	0.345	0.110	0.29	0.114
Adults	12.306	1.278	1.91	0.128	0.134	0.015	-0.74	-0.047	0.340	0.110	-1.16	2.787
Education	10.114	1.324	-16.24	-1.064	0.119	0.015	-11.85	-0.754	0.423	0.114	22.97	47.278***
Employment	11.874	1.294	-1.66	-0.110	0.128	0.015	-5.19	-0.330	0.355	0.111	3.20	10.153*
Home ownership	11.107	1.271	-8.02	-0.536	0.127	0.014	-5.93	-0.390	0.364	0.111	5.81	37.858***
Car ownership	9.417	1.326	-22.01	-1.442	0.108	0.015	-20.00	-1.273	0.410	0.115	19.19	29.345***
Total income	11.015	1.291	-8.78	-0.583	0.136	0.015	0.74	0.047	0.347	0.111	0.87	0.159
Direct deposit	11.693	1.284	-3.16	-0.211	0.121	0.014	-10.37	-0.682	0.360	0.110	4.65	24.031***
Match rate	11.915	1.276	-1.33	-0.088	0.134	0.014	-0.74	-0.049	0.342	0.110	-0.58	7.838*
Financial education	11.252	1.263	-6.82	-0.457	0.123	0.014	-8.89	-0.585	0.368	0.117	6.98	192.531***
Peer group meeting	11.739	1.280	-2.78	-0.186	0.138	0.015	2.22	0.141	0.344	0.110	<0.01	0.002
Number of deposit locations	11.753	1.283	-2.67	-0.178	0.131	0.015	-2.96	-0.189	0.342	0.110	-0.58	0.173
Target	10.209	1.264	-15.45	-1.037	0.114	0.014	-15.56	-1.023	0.370	0.111	7.56	24.964***
Race, education, target, and car ownership	6.118	1.320	-49.33	-3.239***	0.080	0.015	-40.74	-2.593***	0.524	0.121	52.32	104.492***

* $p < .05$; ** $p < .01$; *** $p < .001$

These analyses suggested that none of the covariates individually significantly reduced the saving gap related to AMND or deposit frequency between banked and unbanked participants. However, several covariates were found to significantly decrease the gap of dropout.

When we examined the percentages of change in the coefficient or odds ratio for three outcomes (i.e., AMND, frequency, and dropout), we found that race, education, car ownership, and monthly savings target were the covariates of greatest estimated effect that reduced the gap of any outcomes between banked and unbanked participants.

Including the four variables with the greatest estimated effect (i.e., race, education, car ownership, and target amount) as a block into the model, the saving outcomes and dropout gap between banked and unbanked participants was reduced to a statistically significant degree. With these four variables in the model, the estimated bank ownership gap in AMND, and frequency was reduced from \$12.08 to \$6.12 ($p < .001$), from 0.14 to 0.08 ($p < .001$), respectively. The gap of odds of dropout between two groups was also reduced by 52% ($p < .001$).

Discussion

Using data from the ADD, which is the most comprehensive data set of saving behavior of low-income populations as far as we know, we examined individual differences, program participation, and savings performances of banked and unbanked participants in IDAs. Consistent with the evidence from previous research about the saving behaviors of banked and unbanked in the general population (Dunham, 2001; Stegman, 2001), our findings indicate that, although both banked and unbanked participants can save in IDAs, unbanked participants save lower amounts, save less frequently, and are at higher risk for dropping out of the program compared with banked participants. Last, our study augments the existing literature by identifying the key intervening variables that may help decrease the savings gap between banked and unbanked participants in IDAs.

Characteristics of Banked and Unbanked participants in IDAs

Our study found that unbanked IDA participants differ from banked participants in several respects. Banked participants were significantly more likely to be older; to have more formal education; to be divorced, separated, or widowed; to be employed full time; and to have fewer children. Conversely, unbanked participants were more likely to be single, black, and a student. In addition, we found significant financial differences between the banked and unbanked participants. Although both groups were comprised of low-income populations, banked participants were more likely to own a home, own a car, and had higher monthly household incomes. Therefore, unbanked participants in IDAs in ADD seem to be at somewhat more social and economic disadvantages. Our findings are consistent with those from previous studies among the general low-income population (Aizcorbe, Kennickell, & Moore, 2003; Barr, 2004; Hogarth, Anguelov, & Lee, 2004; Kennickell, Starr-McCluer, & Surette, 2000).

Two interesting observations about the differences between banked and unbanked participants with relation to program characteristics are worth mentioning. First, banked participants were significantly more likely to use direct deposit (7% for banked and 2% for unbanked participants).

The greater use of direct deposit among banked participants may be a result of the group's greater likelihood to be employed full time, which likely provides greater access to direct deposit.

Second, banked IDA participants completed significantly more hours of financial education. The difference in hours of financial education may be a result of a greater likelihood of being enrolled in IDA programs that required or offered more hours of financial education, or due to a greater interest in financial education among banked participants. However, the literature on the unbanked and the role of financial education is inconclusive regarding whether financial education precedes the decision to be banked or vice versa.

Saving Performance and Program Participation of Banked and Unbanked IDA Participants

Banked IDA participants included in our study had significantly higher average monthly savings, more frequent deposits, and were less likely to drop out as compared to the unbanked participants. These findings echoed the literature, suggesting that having a bank account is increasingly important for savings and asset-building (Stegman, 2001; Barr, 2004). The fact that banked participants demonstrated better savings behavior may indicate that their previous experience with savings or greater financial knowledge and sophistication helped them to save. For example, the existing relationships with banking institutions may have provided the banked participants with more convenient methods for making deposits (Schreiner et al., 2001). On the other hand, the unbanked participants may typically rely on alternative financial services that do not facilitate savings and consequently, unbanked participants seem to have experienced greater difficulties when they tried to save and stay in the program.

Variables That Reduce the IDA Savings and Participation Gap Between the Banked and Unbanked

We further found that a combination effect of race, education, car ownership, and monthly savings target explained a significant part of the gap in savings performance and dropout rates between the banked and unbanked IDA participants. These results are consistent with literature indicating that people of color and those with less education are more likely to be unbanked. Car ownership as a contributing factor to savings may indicate wider social and economic opportunities associated with mobility, or previous experiences with financial institutions. Higher monthly savings targets as a program variable suggest that part of the bank-unbanked outcome gap in IDA programs can be offset with a higher saving goal.

These results indicate that the efforts that provide unbanked participants with opportunities to gain financial knowledge through education, as well as the financial learning that accompanies buying and maintaining a car may increase their savings. Further, implementing strategies that encourage programs to set a higher monthly saving target may also contribute to a reduction in the performance gap. In addition, further consideration is warranted for the differences in savings behaviors that may be a result of race/ethnicity or cultural backgrounds.

Practice and Policy Implications

The findings from this study suggest that participants in IDA programs may have better saving performances and lower risks of dropping out if they have prior banking experience. Therefore,

IDA practitioners might consider what steps they can take to increase the likelihood of success for participants who enter the IDA program with little or no banking experience.

Insofar as banking experience acts as a proxy for financial knowledge, one possibility is to increase the financial education requirements for unbanked IDA participants. Parrish and Servon (2006) note that financial education among low-income adults is more effective during “teachable moments,” such as when they are actively participating in an IDA program. Similarly, in a study comparing the dropout rates of IDA participants and participants in a program that offered only financial education (Illinois’ *Financial Links for Low-Income People*), Anderson, Zhan, and Scott (2004) find that the dropout rates are much lower for IDA participants than the education-only participants. Given these findings, IDA programs can be regarded as unique opportunities to capture the interest of the unbanked to receive financial education and to assist with establishing bank accounts beyond their IDA.

IDA practitioners should think broadly about empowering participants by providing opportunities to gain banking experience and financial knowledge beyond the goals and activities of IDA programs. The program interaction can act as an important gateway, leading to mainstream financial services and greater financial knowledge and sophistication. Thus, IDA practitioners may wish to focus their efforts on setting specific goals with unbanked participants, such as providing assistance in opening a checking account.

This shift in perspective raises the question of what constitutes effective financial education in IDA programs. Our growing knowledge of the reasons for being unbanked suggests that IDA programs need to have a sufficient understanding of their unbanked enrollees and to tailor their financial education programs to meet these needs. For example, one study (Rhine, Greene, & Toussaint-Comeau, 2006) suggests that the preference for using check cashing business by blacks and Hispanics is primarily explained by three factors: lower transaction and time costs, liquidity constraints, or a preference for cash transactions. Therefore, education efforts should directly address such perceptions and preferences and should be careful not to assume that the use of alternative financial services among unbanked enrollees is solely the result of a lack of financial education.

Anderson, Zhan, and Scott (2004) also conclude that financial education programs for low-income persons should use pre-training tests to determine baseline knowledge, and that initial training sessions should identify specific learning goals, incorporate information on predatory financial practices, as well as offer participation incentives, transportation assistance, and child care during the training sessions. In addition, IDA programs should not overlook basic principals of adult education on experiential learning and shared experiences.

In addition to financial education, unbanked IDA participants can benefit from partnerships between IDA programs and banks. Local bank representatives can attend IDA financial education workshops to explain their products and answer participants’ questions and concerns. They can also walk participants through the process of opening an account and use class time to help participants learn how to write a check, make a deposit, and balance a checkbook. Having personal contact with a bank coupled with knowledge gained in financial education sessions may make participants more likely to open a checking account in addition to their IDA.

To fairly interpret these results, the study's limitations must be considered. First, participants in IDA programs in ADD were both program-selected because of eligibility criteria and self-selected because they volunteered to participate (Schreiner et al., 2001). Therefore, ADD participants differ in some aspects from the general U.S. low-income population, and, therefore, our results may not represent how the general low-income population might perform in IDAs. Second, we could not test for the possibility that participants redirected existing savings into their IDA accounts. It is possible that some of the savings were not new savings, but the extent of such redirection cannot be determined. However, because low-income households have limited assets overall, such reshuffling is less likely among this population.

In conclusion, this paper finds that unbanked IDA participants save lower amounts less frequently and are more likely to drop out than banked IDA participants. These findings may be due in part to the combined effects of their race/ethnicity, educational status, car ownership, and their IDA program's monthly savings target. In order to improve their saving performance and program participation, IDA programs may need to consider increasing hands-on financial education and individual case management for unbanked participants.

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