Attitudes toward Institutional Features and Savings in Individual Development Accounts

Latent Class Analysis

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This exploratory study focuses on classifying attitudes toward institutional features of Individual Development Accounts (IDAs). This study also examines to what extent the attitudes change and how they are associated with savings in IDAs. While attitudes toward IDAs are generally positive, latent class analysis (LCA) found 3 groups, "highly positive", "moderately positive", and "mixed opinion". Race is significantly associated with the classification. This study found dynamic changes in attitudes at 18 months and 48 months after the baseline interview. While attitudes became somewhat more positive for 18% of participants, they became more negative for 26%. It was also found that participants with a mixed attitude had significantly lower savings, suggesting that attitudes influence saving in IDAs.

Key words: *attitudes, institutional features, Individual Development Accounts, savings, latent class analysis*

Introduction

Asset ownership matters for all. Assets or wealth may increase self-sufficiency and the well-being of individuals and families. Financial capital mitigates economic hardships (Parks-Yancy et al., 2007). Assets have positive effects on marriage (Dew, 2007) and marital stability by decreasing financial strain (Gudmunson et al., 2007). Fletcher et al. (2005) found that ownership of a reliable car is positively associated with a family's economic well-being. However, wealth in the United States is very unequally distributed. The most striking feature of this distribution is its degree of concentration. The richest 1% of households owns about one-third of the total wealth (measured as net worth) in the economy, and those in the top 5% hold more than half. At the other extreme, a significant fraction of households have zero or negative net worth or no assets at all (Caner & Wolff, 2004).

Inclusive asset-based policy focuses on broadening asset-building access to the disadvantaged and providing mechanisms that encourage asset accumulation for this population. Individual

Development Accounts (IDAs), which provide low-income households with subsidies through matched deposits, are the classic example of inclusive asset-based policy (Sherraden, 1991).

Research on IDAs has identified two noteworthy findings First, contrary to the stereotype that they cannot save, the poor have saved in IDA programs. Most notably, participants in the American Dream Demonstration (ADD), which was the first large-scale demonstration of IDAs in the United States, made an average of $528 in net deposits and $2,586 in matched withdrawals during the 4-year demonstration period (Schreiner et al., 2002). Second, controlling for individual socioeconomic demographics, institutional factors such as access, information, and expectation are significantly and meaningfully related to savings performance (Curley et al., 2005; Schreiner et al., 2002; Ssewamala & Sherraden, 2004).

Qualitative research has demonstrated that attitudes toward IDAs influence individual participation and the amount saved in IDAs (Sherraden et al., 2005). Little quantitative evidence has been examined, however, about how participants view IDAs and to what degree their views are associated with saving in IDAs. Examination of attitudes toward IDAs builds on our knowledge of saving behaviors among low-income households. Furthermore, evidence from this study is expected to provide information useful for improving IDA programs.

Using latent class analysis (LCA), this exploratory study focuses on classifying attitudes toward institutional features of IDAs as well as investigating relationships between attitude and saving outcome. Specific research questions were developed as follows: (1) How do participants in an IDA program view key institutional features of IDAs? (2) How can attitudes toward IDAs be classified? (3) To what extent are individual socioeconomic characteristics associated with the classification of attitudes? (4) Do attitudes change over time? If so, to what extent? (5) Last, to what extent are the attitudes associated with savings in IDAs? This study uses data from a longitudinal survey collected at an IDA program in Tulsa, Oklahoma.

IDAs and CAPTC IDA Program

Individual Development Accounts and the American Dream Demonstration

Sherraden (1991) proposed a savings instrument, Individual Development Accounts (IDAs), for low-income households. One critical premise of IDAs is that the disadvantaged can save with institutional supports. The American Dream Demonstration (ADD) was the first large-scale test of IDAs. ADD involved 14 IDA program sites selected through a competitive process. The 14 program sites established more than 2,000 IDA accounts in low-income communities (Schreiner et al. 2002). Participants in ADD are characterized as "working poor," who tend to be employed, have more education, and a greater probability of owning a bank account. However, they tend to be among the more disadvantaged of the working poor in that they are more likely to be female, African American, and single (Schreiner et al., 2002).

IDAs provide matches for participants who use their savings for home purchase, post-secondary education, or microenterprise. Match rates are high—usually 1:1 or 2:1 or even higher—and serve both to attract people to the program and to turn small amounts of saving into large amounts of asset accumulation. IDA programs also provide informal social support such as peer group meetings, and they typically require that participants attend financial education classes.

The number of IDA programs has exploded in the past decade, and recent estimates suggest that there are about 500 IDA programs and 20,000 accounts in the United States (and probably even more than this abroad). While more than 40 states have some type of IDA policy, most IDA programs are run by community-based, non-profit organizations.

CAPTC IDA Program

The Community Action Project of Tulsa County (CAPTC) is a multi-service community agency whose target population is working poor households in the Tulsa metropolitan area. CAPTC provides a variety of services for children (e.g., early education program), families (e.g., free tax preparation, affordable housing, and financial education), and communities (e.g., community outreach services). The CAPTC IDA program was one of a series of local programs initiated under ADD. Overall, CAPTC is a typical IDA program.

Eligibility in the CAPTC IDA program was limited to employed people with a household income at or below 150% of the poverty line. CAPTC offered a match rate of 2:1 for matched withdrawals for home purchase and a match rate of 1:1 for all other uses, including post-secondary education, small business, home repair, and retirement. CAPTC required participants to take 12 hours of general financial education, four hours of which were required prior to opening an account. Asset-specific education (for example, information on the home-buying process) was also required prior to making a matched withdrawal.

Theory and Evidence

Institutional Saving Theory

Implementation of inclusive asset-based policy is based on institutional savings theory. Institutional savings theory focuses on institutional aspects affecting opportunities for asset accumulation (Sherraden, 1991). Given that low savings by the poor can be explained in part by limited institutional opportunities, the theory suggests that institutional factors other than income and preference may influence saving behaviors of low-income families (Beverly & Sherraden, 1999). In particular, seven institutional factors have been proposed—access, information, incentives, facilitation, expectation, restrictions, and security—that may influence saving in low-income families (Schreiner & Sherraden, 2007).

First, since access to institutionalized savings plans is convenient and decreases transaction costs, individuals with access to saving institutions are more likely to save (Beverly & Sherraden, 1999). Second, information and knowledge of how to save influence saving behaviors (Lusardi, 2003). In IDA programs, all participants are required to take financial education, which has positive effects on savings (Schreiner et al., 2002). Third, performance in saving programs may depend on incentives. Matching grants, tax-free earnings, and rebates can be types of incentives (Clancy et al., 2006). In particular, matching was found to have positive effects on saving outcomes in pensions (Munnell et al., 2001/2002) and in 529 college saving plans (Clancy et al., 2006). Fourth, facilitation—assistance with participation and savings—appears to be a key feature of most contractual saving programs (Schreiner & Sherraden, 2007). Automatic enrollment and automatic deposit, for example, are significantly associated with participation levels and contribution levels in 401(k)s (Madrian & Shea, 2001) and 529 plans (Clancy et al., 2006). Fifth, institutionalization of expectations encourages

savings achievement. In IDAs, for example, the match cap is regarded as a target savings amount, and often becomes a goal for participants (Schreiner et al., 2002). Sixth, restrictions limit certain types of actions so that savings goals can be achieved. Restrictions can be measured by match caps or by limits on the use of matched withdrawals (Ssewamala & Sherraden, 2004). Last, whether saving plans are secure influences participation and saving outcomes (Mason et al., 2006; Schreiner & Sherraden, 2007).

Attitudes toward Saving Plans

With the introduction of new asset-based policies, research has begun to explore how participants view saving plans and how their attitudes influence saving performance (Mason et al., 2006; Sherraden et al., 2005). Commonly, these studies have used in-depth interviews. According to these qualitative studies, participants in inclusive asset-based policy programs generally expressed positive attitudes toward matching (an institutional feature). IDA participants described the matching grants as "a big incentive," "a good bribe," and "like winning the lottery" (Sherraden et al., 2005, p.74). In-depth interviews with account holders of 529 college saving plans found that all interviewees spoke positively about the matching grants; most indicated that the matching grants were an attractive or even the most important feature when they considered opening an account and making deposits (Mason et al., 2006).

Studies have also found that participation in saving plans influences saving goals. Participants in IDAs have a specific saving goal for matching and withdrawal. However, IDA participants listed fewer but specific saving goals and their goals were more likely to be for longer-term uses (Sherraden et al., 2005). In 529 college saving plans, account owners are encouraged to have personal saving goals such as saving a specific amount for a child's education. In addition, participants in college saving plans expected that having a small amount would make a difference for their children's future (Mason et al., 2006).

Regarding information that IDAs provide, of 57 participants who discussed the financial education classes offered by IDA programs, 49 reported learning something new and 33 thought the classes were highly useful. Nineteen thought that the classes were somewhat useful but that the material presented was not necessarily new information for them, and 5 did not find them useful at all (Sherraden et al., 2005).

In-depth interviews also found that confidence in administration and management in saving plans influenced participants' participation and deposit frequency. Some account owners in 529 college saving plans perceived the plans as being safer than other investment alternatives, and their perception of safety was associated with better saving performance, as measured by net deposits and deposit frequency (Mason et al., 2006).

Data and Methods

Sample and Data

The CAPTC IDA program employed an experimental and longitudinal design where a total sample of 1,103 eligible participants were assigned to treatment (n=537) and control (n=566) groups. While those in the treatment group were eligible to participate in the IDA program, control group

participants were not allowed to open IDA accounts during the four-year demonstration period (1999-2003). The baseline interview was conducted just before the assignment, followed by follow-up surveys at 18 and 48 months. This study draws on this survey data, which captured information about individual characteristics including demographics, income, assets, and saving behaviors. This study also draws on data from the Management Information System for Individual Development Accounts (MIS IDA), a software program developed to manage and monitor information on IDA accounts and programs. This study merges the survey and MIS IDA data for analysis. Since this study focuses on analyzing attitudes toward IDAs, only participants in the treatment group (n=537) were used for analysis.

This study suffered a large reduction in the sample because of attrition, non-participation in the experiment, and missing data. Attrition reduced the baseline sample (n=537) to 412 respondents at Wave 3. In addition, 12% (n=66) of the sample at the baseline (n=537) did not open IDA accounts over the course of the demonstration period. More specifically, it was found at Wave 3 that 43 of the 412 respondents had not opened IDA accounts, reducing the sample to 369. In addition, 63 of 369 cases were found to have missing data. This final sample was 306 cases, approximately 60% of the eligible participants (n=537) at the baseline.

Given that there was a large reduction in the sample from the original sample of 537 to 306, this study compared the socioeconomic demographic characteristics at the baseline of the 306 respondents with the 231 non-respondents that were eliminated. There were no significant differences in age, gender, race/ethnicity, marital status, or household size between the respondents and non-respondents. The two groups were also similar in income and poverty status at the baseline. They differed significantly, however, in terms of education attainment status, total financial assets, real assets, and total liabilities. Seventy-one percent of the respondents had some college or a college degree, compared with 60% of the non-respondents ($\chi^2 = 8.26$, $df = 2$; $p=.016$). The respondents owned more total financial assets ($2,440 vs. $1,020; $t=-2.65$; $p=.008$) and total real assets ($16,368 vs. $7,490; $t=-4.37$; $p<.001$) than the non-respondents. In addition, the respondents were found to have more total liabilities than the non-respondents ($15,812 vs. $10,130; $t=-3.42$; $p=.001$).

Measures

Six items regarding participant's attitudes toward IDA program features were measured at Wave 2 (18 months after the baseline survey) and Wave 3 (48 months after the baseline survey): "Your IDA account has seemed secure" (security); "Your IDA has earned enough interest" (interest earned); "The match rate for your IDA has been adequate" (match rate); "You have wanted to save for a certain goal" (saving for a goal); "You have liked the rules about taking money from your IDA" (withdrawn rules); and "The IDA classes have helped you to save" (financial classes). Each factor uses a 4-point Likert-type scale ranging from *strongly disagree* (0) to *strongly agree* (3).

Average monthly net deposit (AMND) is the most frequently used measure of saving outcome in IDAs (Curley et al., 2005; Schreiner et al., 2001, 2002; Ssewamala & Sherraden, 2004). AMND is defined as net deposit per month and is calculated by dividing net deposits by the number of participation months (Schreiner et al., 2002). Net deposit is defined as deposits plus earned interest minus unmatched withdrawals. Earned interest is included in net deposit because it can be matched (Schreiner et al., 2002).

Table 1. Sample Characteristics (*N* = 306)

Variables	Mean (SD) and Percentage
Number of children	1.48 (1.68)
Number of adults	1.77 (1.36)
Gender (%)	
Male	20.59
Female	79.41
Age	40.71 (10.70)
Race (%)	
Caucasians	47.06
African Americans	41.50
Other race/ethnicity	11.44
Marital status (%)	
Married	28.10
Non-married	71.90
Education (%)	
High school graduation or less	28.43
Some college	57.84
College graduation or higher	13.73
Monthly household income ($)	1,540.35 (1,099.84)
Poverty status (%)	
Below the poverty line	37.58
Equal to or above the poverty line	62.42
Total financial assets ($)	2,440.34 (6,272.52)
Total real value assets ($)	16,368.35 (26,982.36)
Total liabilities ($)	15,812.50 (21,449.51)

This study used socioeconomic demographics as covariates including gender, age, household composition (number of children and adults), marital status, race/ethnicity, education, monthly household income, poverty status, total financial assets, total real value assets, and total liabilities. These covariates were measured at the baseline. Table 1 presents a descriptive analysis of the covariates.

Rationale for Latent Class Analysis and Analysis Plan

The goal of latent class analysis (LCA) is to categorize individuals into groups where individuals within a group are similar to each other and different from individuals in other groups. This analysis technique is "latent" because group membership is not observed. LCA also aims to find the smallest number of latent classes that describes associations among a set of observed categorical variables. Compared with cluster analysis, which may entail various interpretational problems (See Bergman and Magnusson, 1997, for detail), LCA has strengths in dealing with measurement error (Yamaguchi, 2000) and in efficiently identifying clusters (Bergman & Magnusson, 1997). LCA is particularly suitable when diagnosis is a primary focus and symptom items are examined (McCutcheon, 1987; Muthēn & Muthēn, 2000).

LCA is useful to classify subgroups with similar attitudes that exist within a heterogeneous population. For this reason, studies have used LCA to classify attitudes toward gender roles, values, abortion, government, and social mobility (Yamaguchi, 2000). In the case of IDAs, LCA is a useful tool to evaluate how participants perceive institutional features. Participant attitude toward these features is thought to be a significant predictor of savings. LCA will allow practitioners in IDAs to identify patterns and key predictors of these attitudes if indeed they are found to be significantly associated with saving outcomes. Ultimately, the evaluation of these attitudes and their association with saving will allow practitioners to develop IDA programs tailored to participants' views; these programs, in turn, will provide greater opportunities for asset ownership among low-income households.

This study used Mplus 4.2 to determine an optimal class-solution with exploratory LCA. Each model was estimated by a stepwise approach where the best model fit is decided by the lowest score measured by the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC). The two model fits represent goodness of fit and parsimoniousness, and are regarded as a global fit index (Kass & Wasserman, 1995). Another index of a model fit is entropy which calculates an overall classification probability; the model with the highest entropy score indicates the best model classification (Muthēn & Muthēn, 2000). In addition, this study used the bootstrapped parametric likelihood ratio test to decide how many classes are chosen. The bootstrapped test compares a model with N classes to a model with (N-1) classes. Significant p-value of the test indicates that the number of latent classes chosen in LCA is sufficient but that another model with more latent classes is needed (Yamaguchi, 2000). In addition, this study uses multinomial regression models to examine to what extent individual characteristics are significantly associated with the classes. Finally, this study runs ordinary least square regression models to assess relationships between classes and saving outcome measured by AMND.

Results

Table 2. Descriptive Results of Attitudes toward IDA Program ($N = 306$)

		Strongly Disagree (0)	Disagree (1)	Agree (2)	Strongly Agree (3)	Mean	SD
Security	Wave 2	3	7	133	163	2.49	.60
	Wave 3	1	12	159	133	2.39	.58
Earned interest	Wave 2	26	63	156	58	1.81	.84
	Wave 3	14	67	161	60	1.88	.77
Match rate	Wave 2	2	10	150	143	2.42	.59
	Wave 3	5	12	164	121	2.33	.63
Saving for a goal	Wave 2	2	7	149	148	2.45	.58
	Wave 3	2	10	165	129	2.38	.58
Withdrawal rules	Wave 2	2	14	159	131	2.37	.60
	Wave 3	5	18	184	98	2.23	.63
Financial classes	Wave 2	3	25	159	117	2.28	.65
	Wave 3	11	38	167	90	2.10	.74

## How Do Participants View Institutional Features of IDAs?

Descriptive results of attitudes toward an IDA program at both Wave 2 and Wave 3 are presented in Table 2. Some findings are noteworthy. First, participants in the CAPTC IDA program generally have positive attitudes toward all institutional features of the IDA program. Second, compared with the attitudes toward other features, participants are likely to have a moderately positive view about the amount of interest earned in IDA accounts. While IDAs were designed to make earned interest matched, the earned interest is generally very low, which may be related to the only moderately positive attitude toward the feature. More generally, paired-samples t-tests of each item suggest that the extent of positive attitudes toward institutional features of IDAs had no significant changes between Wave 2 and Wave 3.

How Are Attitudes Toward IDAs Classified?

LCA estimates what class a person belongs to. According to the four model fit criteria of the number of classes, this study found that 4 classes at Wave 2 (BIC = 2,797.70; AIC = 2,674.82; Entropy = .986; Bootstrapped test = .0001) and 3 classes at Wave 3 (BIC = 3,027.01; AIC = 2,930.20; Entropy = 1.000; Bootstrapped test = .0001) are the best fit models.

Figure 1. Latent Class Analysis of Attitudes toward IDAs

(a) Latent Classes at Wave 2
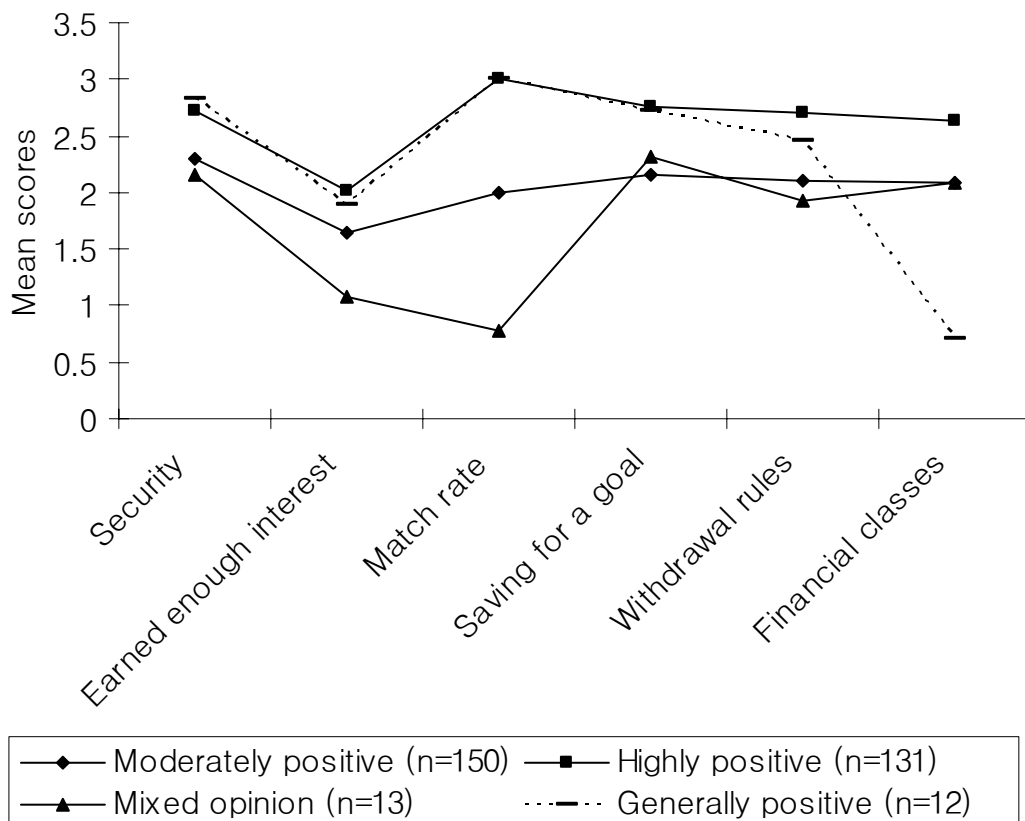
(b) Latent Classes at Wave 3
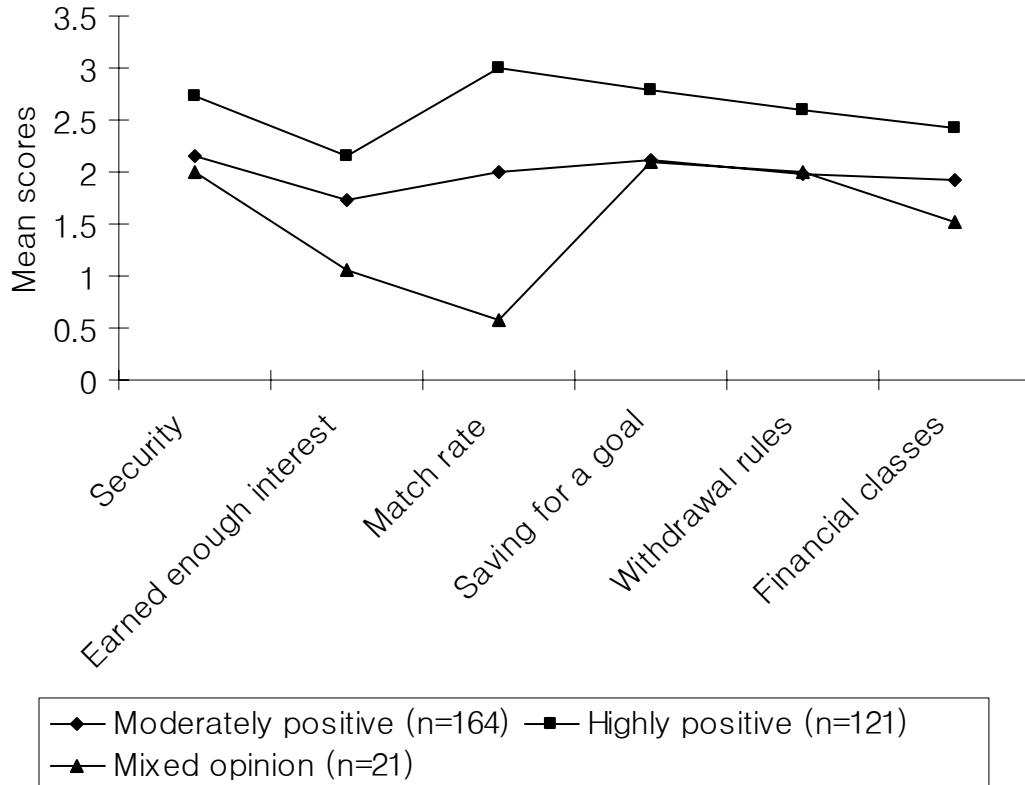
At Wave 2, out of 306 subjects, 42.81% (n=131) are categorized as a group with "highly positive attitudes." About 3.92% (n=12) of the subjects have similar attitudes as the former group except toward financial classes, so that the group is called "generally positive attitudes except financial classes." A group with 49.02% (n=150) of the subjects is characterized as "moderately positive." Last, 4.25% (n=13) are categorized as a group with "mixed opinion" because they have negative attitudes toward interest earned and match rate, but positive attitudes toward the other features (See Figure 1 (a)).

This study found a 3-class model at Wave 3. Out of 306 subjects, 39.54% (n=121) are sorted as a "highly positive" group which has higher scores in the 6 items than the other two classes. About 53.59% (n=164) of the subjects are characterized as a "moderately positive" group, and 6.86% (n=21) are categorized as a group with "mixed opinion." The group with mixed opinion has moderately positive attitudes toward security, saving for a goal, withdrawal rules, and financial classes, while it has negative attitudes toward two incentive items, interest earned and match rate (See Figure 1 (b)).

To What Extent Are Individual Characteristics Associated With the Classification of Attitudes?

Using multinomial regression models, this study examined relationships between individual socioeconomic characteristics and attitudes at Wave 2 and Wave 3. However, the model on the

attitudes at Wave 2 was found to have a model fit problem, indicating that there is possibly a quasi-complete separation in the data. Therefore, this study presents the results of multinomial regression on attitudes at Wave 3 only.

The multinomial model on the attitudes at Wave 3 marginally satisfies model fit (χ^2 = 841.68, df = 28, p<.05). In a model with "mixed opinion" as a reference group, only race or ethnicity is significantly associated with this attitude. The racial group self-identified as "other" is much more likely to have "moderately positive" attitudes than "mixed opinion" (Wald statistics = 1,329.51, p<.001). African Americans are more likely to be classified as "mixed opinion" than "moderately positive" (Wald statistics = 6.69, p<.05) or "highly positive" (Wald statistics = 8.36, p<.01) views. In a model with "moderately positive" views as a reference, it was found that participants whose income is below the poverty line are marginally more likely to be "moderately positive" than "highly positive" (Wald statistics = 2.82, p<.10).

Did the Classification of Attitudes Change from Wave 2 to Wave 3?

Table 3 presents to what degree attitudes toward IDAs changed between Wave 2 and Wave 3. To simplify the analysis of patterns of change between the two waves, this study regarded "generally positive except financial education" at Wave 2 as "highly positive."

Table 3. Changes in Attitudes toward IDAs

| | | Classes at Wave 3 | | | |
		Highly positive	Moderately positive	Mixed opinion	Total (%)
	Highly positive	71 (23.20)	55 (17.97)	5 (1.63)	131 (42.81)
	Generally positive (except financial classes)	4 (1.31)	7 (2.29)	1 (0.33)	12 (3.92)
Classes at Wave 2	Moderately positive	43 (14.05)	94 (30.72)	13 (4.25)	150 (49.02)
	Mixed opinion	3 (0.98)	8 (2.61)	2 (0.65)	13 (4.25)
	Total (%)	121 (39.54)	164 (53.59)	21 (6.86)	306 (100.00)

Note: Percentages are in parentheses.

Of 306 participants, about 56% (n=171) have no changes in their attitudes toward IDAs. While 75 participants have highly positive attitudes during the participation, 94 participants have moderately positive attitudes, and only 2 participants have mixed opinion throughout the two waves. About 18% (n=54) of 306 participants showed positive changes in their attitudes. While 43 participants changed their moderately positive views of IDAs at Wave 2 into highly positive views at Wave 3, 3 participants changed their mixed opinion to highly positive views and 8 participants changed from mixed opinion to moderately positive views. In addition, about 26% (n=81) of 306 participants changed their views in a somewhat negative way. Sixty-two participants with highly positive views at Wave 2 moved to moderately positive views at Wave 3. While 6 participants changed their highly

positive views at Wave 2 to mixed opinion at Wave 3, 13 participants who had moderately positive views at Wave 2 held mixed opinions at Wave 3.

To What Extent Are the Classification of Attitudes Associated with Saving Outcome in IDAs?

Table 4. Results of OLS Multivariate Regression (N = 306)

	Model 1 on AMND		Model 2 on AMND	
	b	SE	b	SE
Constant	14.37 †	8.47	3.31	9.73
Number of children	-1.70	1.10	-1.56	1.09
Number of adults	3.61	2.87	2.83	2.84
Gender (Male: reference)				
Female	-4.66	3.73	-5.09	3.69
Age	.35 **	.13	.37 **	.13
Race (Caucasians: reference)				
African Americans	-15.62 ***	2.92	-14.05 ***	2.94
Other race/ethnicity	-.99	5.05	-1.46	4.99
Marital status (Nonmarried: reference)				
Married	-2.64	3.87	-3.31	3.83
Education				
H.S. graduation or less (reference)				
Some college	.56	2.73	.71	2.70
College graduation or higher	5.03	3.05	4.96	3.02
Monthly household income/1,000 ($)	.55	1.47	.57	1.45
Poverty status				
Below the poverty line	-1.74	3.26	-1.38	3.24
Above the poverty line (reference)				
Total financial assets/1,000 ($)	.56 *	.22	.58 **	.21
Total real value assets/1,000 ($)	.08	..09	.07	.07
Total liabilities/1,000 ($)	.04	.04	.04	.08
Attitudes toward IDA program				
Mixed opinion (reference)				
Moderately positive attitudes			9.12 †	5.36
Highly positive attitudes			15.20 **	5.53
R^2	.258		.282	
F value (df)	7.12*** (14)		7.03*** (16)	
R^2 Change			.024**	

Note: AMND denotes average monthly net deposits. Model 2 adds attitudes toward institutional features of IDAs.
† p<.10; * p<.05; ** p<.01; *** p<.001

This study ran multivariate regression models to examine to what degree attitudes are associated with saving outcome, controlling for socioeconomic demographics (See Table 4). Since the

differences in classes are more manifest among 3 classes at Wave 3 than among 4 classes at Wave 2, this study used the former as a primary predictor in the OLS model. While both Model 1 and Model 2 considered the socioeconomic covariates, Model 2 included the attitude variable. The change in R^2 between the two regression models is .024 (p=.009), which indicates significant variance explained by the attitudes. Controlling for the covariates, participants with moderately positive views toward institutional features of IDAs had an AMND that was higher by $9.12 than those with mixed opinion, which is a marginally significant difference (b=9.12, p=.09). Relatively, the AMND of participants with highly positive attitudes was much larger than that of those with mixed opinion (b=15.20, p<.01). In a regression model with a group of moderately positive attitudes as a reference group which was not presented here, participants with highly positive attitudes are found to save $6.07 more in AMND than those with moderately positive views (b=6.07, p<.05).

While many socioeconomic characteristics are not significantly associated with AMND, several covariates are significant predictors of saving outcome. First, older participants are likely to save more than younger participants; a one year increase in age is associated with an increase of $.37 in AMND. Consistent with previous studies (Schreiner et al., 2002), African American participants saved $14 less in AMND than Caucasians. Finally, while real assets and total liabilities were not significantly associated with AMND, participants with more financial assets were likely to save more in their CAPTC IDA accounts.

Summary and Discussion

This study is the first exploratory study to classify attitudes toward institutional features of IDAs and to examine to what extent the attitudes are associated with saving outcome. Key findings are noteworthy. First, this study generally replicated findings of Sherraden et al. (2005) where participants have positive attitudes toward IDAs. Given that IDAs provide remarkable opportunities for asset accumulation, participants in IDAs generally hold positive views of institutional features such as security, incentives (earned interest and match rate), expectations (saving for a goal), restrictions (withdrawal rules), and information (financial classes).

While the examination of each attitude toward institutional features is helpful to understand general patterns of the attitudes among participants in IDAs, it may not be an efficient way to find a target group which has mixed or negative attitudes and practitioners should take actions to. In this regard, this study used latent class analysis which can sort participants with latent groups. Like descriptive results of each item above, a key finding is that LCA replicated findings from qualitative studies that the majority of participants are likely to have positive attitudes toward IDAs. LCAs at Wave 2 and Wave 3 have similar patterns of attitudes in that three classes were identified, this study labeled "highly positive attitude", "moderately positive attitude", and "mixed opinion". One exception is that, at Wave 2, 12 participants did not have positive attitudes toward the financial classes, although they had generally positive views otherwise. This exception was not identified at Wave 3. These findings suggest that, as times go, participants' attitudes at Wave 3 were more clearly classified than at Wave 2.

A striking result, obtained by multinomial regression on attitudes at Wave 3, found that race/ethnicity is associated with attitude. In particular, African Americans are more likely than Caucasians to have a mixed opinion. A common finding in ADD is that African Americans save much less than Caucasians (Curley et al., 2005; Schreiner et al., 2002; Ssewamala & Sherraden, 2004).

The difference in attitudes between the two groups may explain the gap. Future research is needed to examine why African Americans and Caucasians hold different attitudes toward features of IDA programs.

This study also found indications of dynamic changes in participants' attitudes demonstrated by a matrix (Table 3) between Wave 2 and 3. While about 56% of participants showed no change in attitude, 18% showed positive change and 26% showed negative change. IDA staff and practitioners should be especially attentive to this latter group. In particular, practitioners could provide counseling services to members of this group to understand what triggered their changes in attitudes.

Finally, attitudes toward institutional features of IDA programs seem to matter for saving outcome in IDAs. The differences in saving outcome among classes are more manifest at Wave 3. Participants with highly positive attitudes toward institutional features of IDA programs had significantly higher AMND than those with moderately positive and mixed attitudes. In addition, those with moderately positive attitudes also have higher AMND than that with mixed opinion. These findings suggest that policymakers and practitioners should periodically evaluate how attitudes change and in what direction.

This study has several specific implications for future research and policy. First, since the general idea of LCA is that each latent class corresponds to a subgroup that has its own set of parameter values, various possibilities exist for applying LCA to an examination of attitudes and behaviors in IDAs (See Muthēn & Muthēn, 2000, for detail applications of LCA). Second, institutional features of IDAs can be measured not only by objective characteristics but also by subjective attitudes. Previous studies on IDAs have attempted to identify and test institutional features as objective characteristics. However, an examination of perception or attitudes toward the institutional features of saving plans is also warranted. This approach is expected to contribute to knowledge building and to testing the theory of institutional saving. Third, while previous studies (Mason et al., 2006; Sherraden et al., 2005) have used qualitative methods to examine attitudes toward saving plans, this study employed latent class analysis, a quantitative approach. The two approaches are not contradictory but complementary in informing policymakers and practitioners of how saving plans should be designed or reformed to maximize saving outcomes. Fourth, examining attitudes toward institutional features is a way of evaluating IDAs. Practically, it is important that practitioners in the IDA field help participants understand institutional features of IDAs. Through surveys on participant attitudes, practitioners can evaluate participants' knowledge and understanding of IDAs; this evaluation, in turn, can be used to reform IDA programs. In particular, exit surveys should be implemented for eligible participants who do not open accounts or drop out from IDAs. Last, results of this study suggest that more emphasis should be put on campaigns to increase awareness of features of IDA programs. LCA can help practitioners develop counseling programs or other services targeting participants who have a mixed or negative attitude. Formal and informal communication combined with financial education and peer group meetings may also play important roles in influencing the attitudes of participants toward the institutional features of IDA programs.

Several limitations are also noteworthy. First, it is highly likely that the sample in this study is influenced by potential sampling bias, although the impact of the bias on the results is unknown. Second, this study's results have limitations for generalization because the sample is from only one IDA program. Future studies should collect data from as many IDA programs as possible. Third,

the association between attitudes toward IDAs at Wave 3 and saving outcome (AMND) may have an endogenous problem. Successful participants in IDAs are more likely to evaluate IDAs in a highly positive way. In this regard, the results of this study should be carefully interpreted.

Conclusion

This study is the first quantitative analysis of how participants view key institutional features of IDAs and to what extent their attitudes are associated with saving outcome. Despite limitations of this study, latent class analysis can provide a general picture of attitudes toward IDAs. The findings of this study can contribute to knowledge building on saving behaviors among low-income households and development of IDA programs tailored toward participants' perspectives. Institutional features of IDAs should be adjusted so that they encourage low-income households to save more effectively, and thus enable them to accumulate assets for the development of their families and communities. In particular, since IDAs are voluntary savings plans, understanding participants' attitudes will be essential to expand saving programs.

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