

Individual and Institutional Factors Related to Low-Income Household Saving Behavior

Stuart J. Heckman¹, Sherman D. Hanna²

This research sought to further understanding of factors related to low-income household saving behavior. Saving behavior, defined as whether a household spent less than income, was analyzed by applying institutional theory, which proposes that households' institutional environment has a substantial effect on financial decisions. Two logistic regression models were used to test the effects of variables on saving behavior; the first logit was based on the life cycle hypothesis and the second added noneconomic individual factors (i.e., social networks, financial literacy, and psychological variables) and institutional factors (i.e., access, incentives, and facilitation). Institutional factors, including the number of institutions used, credit access, and having an employer sponsored retirement plan, had significant effects even after controlling for the effect of variables based on the life cycle model, suggesting that promoting institutional access and facilitation—especially through employer-provided plans—may encourage saving behavior among low-income households.

Keywords: consumer policy, institutions, low-income households, poverty, saving behavior, Survey of Consumer Finances

Saving is widely accepted as a positive financial behavior that leads to positive family outcomes. For example, saving can be used to smooth consumption throughout the life cycle, allowing households to weather difficult economic times. Savings can also help families avoid drastic consumption shocks in cases of unemployment, disability, or retirement. While there are clear benefits to accumulating assets through disciplined savings, some economists have argued that low-income consumers do not have much incentive to save (Hubbard, Skinner, & Zeldes, 1995).

For instance, retirement saving in the U.S. may be a lower priority for low-income families because the Social Security system, designed to provide a safety net for retirees, replaces a larger proportion of pre-retirement income for low-income workers compared to middle- to upper-income families. In addition to a cap on the eligible earnings for Social Security, the reason for this difference is the calculation of the primary insurance amount, which is the monthly benefit a covered worker receives during retirement. For 2014, 90% of the first \$816 of the average indexed monthly earnings (AIME), 32% of the AIME above \$816 and below 4,917, and only 15% of the AIME above \$4,917 is replaced (see Social Security Administration, n.d.). Therefore, for low-income households, retirement saving may be less important because Social Security will provide a larger wage replacement ratio compared to high-income households. Furthermore, low-income families who save risk losing welfare benefits if

eligibility is based on assets. While this may suggest poor consumers should exercise caution when saving, there are important benefits to owning assets.

Sherraden (1991) argued that the stock of capital (i.e., assets) differs in important ways from the flow of capital (i.e., income). In the introduction to their book, Sherraden, McBride, and Beverly (2010) provide a concise review of positive outcomes that have been associated with asset ownership, including psychological benefits, sociological benefits, and opportunities for social mobility. From a life cycle perspective, saving may be even more important for low-income households. If income is down in a particular year, a low-income household might face a potentially life-threatening situation as there are no resources to use to buy basic necessities. The ability to smooth consumption is especially important for these households.

The institutional theory of saving behavior, discussed later, suggests that institutions play an important role in shaping consumer behavior (Beverly & Sherraden, 1999); therefore, institutions may be an important consideration in promoting saving among low-income households. Individual Development Accounts (IDAs), which provide subsidies or matches to low-income consumers who save, have been used to encourage saving and have grown substantially. However, there is concern that funding for these programs will not be available in the future due to budget cuts. While there is robust

¹School of Family Studies and Human Services, Kansas State University, 319 Justin Hall, Manhattan, KS 66506, 785-532-1371, sheckman@ksu.edu

²Department of Human Sciences, The Ohio State University, 1787 Neil Avenue, Columbus, OH 43210, 614-292-4584, hanna.1@osu.edu

literature on IDA participation, researchers still know very little about the behavior of low-income households outside of IDA programs. If asset building programs do not persist, research can help identify alternative ways to use institutions to help low-income consumers. By understanding the factors related to low-income household saving behavior, policymakers can make informed decisions about efficient ways to help poor consumers build assets. Because institutional theory has traditionally been applied in the context of IDA programs, this study contributes to the current understanding of low-income consumers by exploring the effect of non-economic individual and institutional factors on saving behavior in a general population.

Literature Review

The extensive literature on saving behavior reflects the diversity of the researchers as there is substantial variation in approaches to saving behavior. This review focuses on empirical studies that have used the life cycle hypothesis or the institutional theory of saving behavior.

Hanna, Fan, and Chang (1995) presented a simple description of the normative life cycle model, and showed that expected future income patterns were important in optimal savings patterns. Pistaferri (2009) provided a review of some of the key predictions of the life cycle hypothesis and presented recent empirical evidence in consideration of the theory. Empirical research on household saving patterns has included a variety of measures of saving, including spending relative to income (Bae, Hanna, & Lindamood, 1993; Jayathirtha & Fox, 1996), with estimates that approximately 40% of households spent more than income, and therefore, about 60% of households spent the same or less than income. Chang (1994) used the change in real net non-housing assets as a measure of saving, and found that about 60% of households saved between 1983 and 1986. Lewis (1996) used the change in real net worth between 1983 and 1986 as a measure of saving and found that about 52% of low income (less than 200% of poverty thresholds) households saved.

The Survey of Consumer Finances (SCF) contains a variable indicating whether the household spent more, less, or about the same as income, and a number of authors have used the spent less than income as a proxy for saving. Yuh and Hanna (2010) tested whether households were behaving consistently with the normative predictions of a life cycle model with an analysis of the 1995-2004 SCF datasets. Education, income, net worth, owning a home, having health insurance, and expecting higher future income were all positively associated with saving.

Young households were more likely to save than otherwise similar middle age households, a seemingly puzzling result the authors explained based on normative theoretical issues and the fact that they controlled for income (Yuh & Hanna, 2010). Rha, Montalto, and Hanna (2006) investigated the SCF saving variable, testing for whether behavioral indicators affected saving, and concluded that some behavioral proxies helped explain saving behavior.

Hogarth and Anguelov (2003) used institutional theory in their framework for examining saving behavior among low-income households using the 1998 SCF. Specifically, they explored the poor's ability to save, the asset levels of the poor, and the determinants of being a saver (Hogarth & Anguelov, 2003). They found that the poor can save, but asset levels are very low. They identified the following characteristics as having the largest positive relationship to the likelihood of saving: reporting at least one reason to save, owning a bank account, no bad credit history, and longer planning horizons (Hogarth & Anguelov, 2003).

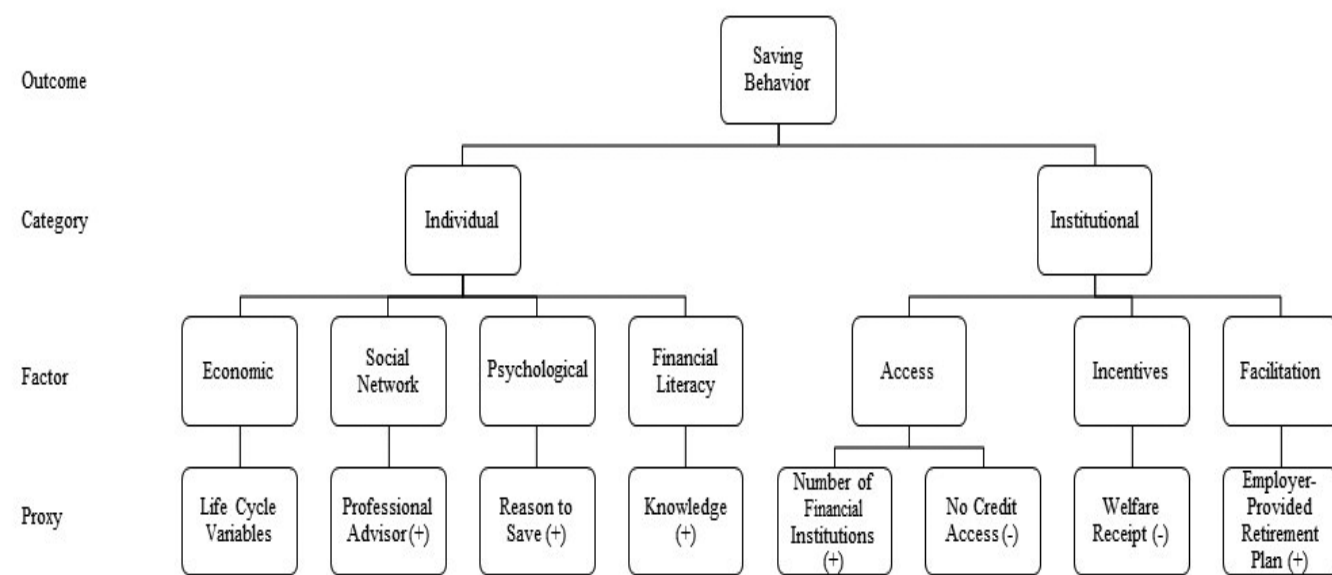
Research has shown low-levels of financial knowledge among households with less education and lower incomes (Lusardi, 2008; Sherraden et al., 2010). The literature on financial service use suggests that low-income households have less access to low-cost banking services compared to middle and upper income households (Barr & Blank, 2008; Hogarth & O'Donnell, 1999; Seidman, Hababou, & Kramer, 2005) and less access to more modern types of banking (internet, electronic funds transfers, etc.) than otherwise similar but more educated, professional households (Worthington, 2007).

Many studies have used the institutional theory, or variations of institutional theory, to analyze saving behavior, especially the saving behavior of the poor. However, nearly all of these studies examined saving behavior in IDA programs (e.g., Han & Sherraden, 2009; Loibl, Grinstein-Weiss, Min, & Bird, 2010; McKernan & Sherraden, 2008; Schreiner & Sherraden, 2006). Although Hogarth and Anguelov (2003) cited institutional theory in their framework, there is still insufficient evidence to conclude that institutions play a significant role in the behavior of low-income households. Therefore, the purpose of this study was to explore, from a public policy perspective, which individual and institutional factors are important predictors of saving behavior among low-income households.

Theoretical Framework

This analysis used the conceptual model presented by Beverly

Figure 1. Institutional and Individual Factors and Expected Effects on Saving Behavior



et al. (2008). Their model, meant to inform public policy, emphasized individual factors and institutional factors as being important determinants of saving and asset accumulation behavior. Individual factors were classified into four categories: economic resources and needs, social networks, financial literacy, and psychological variables. Economic resources and needs include factors from classical economic models, such as income and expenses. Social networks refer to the extent to which saving is encouraged or discouraged by an individual's social network. Financial literacy refers to an individual's level of understanding about financial concepts and products and is expected to have a positive influence on saving behavior. Psychological variables include attitudinal and personality traits that may influence savings, such as an individual's motivation for saving. Institutional factors were based on the institutional theory of saving behavior.

The approach of the current study builds on Beverly et al.'s (2008) conceptual model. The life cycle hypothesis was used to form a basic model of household saving behavior and represents to the economic needs and resources of the household. Because traditional asset accumulation policies have focused on economic resources (e.g., IDA programs), one goal of the current study was to identify non-economic factors, such as those presented in Beverly et al.'s model, that may be predictors of saving behavior. Therefore, the basic life cycle model was supplemented by incorporating non-economic individual characteristics (i.e., social networks, financial literacy, and psychological variables) and the institutional theory of saving behavior. This theoretical framework is

illustrated in Figure 1. The life cycle hypothesis and the institutional theory of saving behavior are briefly reviewed in the following discussion.

The Life Cycle Hypothesis

The life cycle hypothesis assumes that household consumption is a function of long-term income and suggests that consumption and saving is determined by an individual's position in the life cycle (Modigliani & Brumberg, 1954). Households are assumed to attempt to smooth their consumption over the life cycle. Households are expected to borrow when income is low in the early life cycle stages, save during accumulation years when income is high, and dissave in later years (i.e., retirement).

Institutional Theory of Saving Behavior

Beverly and Sherraden (1999) suggested that more emphasis should be placed on the roles of institutions, argued that "individual and household saving behavior is shaped by the institutional processes through which saving occurs" (p. 463), and identified four institutional determinants of savings. Subsequent work (Beverly, McBride, & Schreiner, 2003; Schreiner & Sherraden, 2006; Sherraden & Barr, 2005) led to the identification of a total of seven institutional dimensions of savings: access, security, incentives, information, facilitation, expectations, and limits. Due to data limitations, only the dimensions of access, incentives, and facilitation were used in the current study. See Sherraden et al. (2010) for treatment of the other institutional dimensions.

Access is the extent to which an individual is able to use and communicate with institutions (Sherraden et al., 2010). Incentives are institutional factors, both financial and non-financial, that make saving more attractive (Sherraden et al., 2010). Facilitation is the extent to which individuals are able to take advantage of plans that make saving easy and choosing current consumption at the expense of future consumption difficult, such as automatic payroll deductions (Beverly & Sherraden, 1999; Sherraden et al., 2010).

Hypotheses

Given these individual and institutional factors and the expected relationship to saving behavior, the following hypotheses were formulated. Hypotheses 1 through 3 correspond to individual-level factors; Hypotheses 4 through 6 correspond to institutional-level factors.

- H1: Households with social networks that encourage saving will be more likely to save than households lacking such networks.
- H2: Households with higher levels of financial literacy will be more likely to save than households with lower levels of financial literacy.
- H3: Households with clear reasons for saving will be more likely to save than households lacking such motives.
- H4: Households with greater levels of access to financial institutions will be more likely to save than households with less access.
- H5: Households with greater incentives to save will be more likely to save than households with fewer incentives.
- H6: Households with institutional facilitation of saving will be more likely to save than households lacking facilitation.

Methods

Data

This study used a combination of the Survey of Consumer Finances (SCF) datasets for the survey years 1995, 1998, 2001, 2004 and 2007. Combining datasets from multiple survey years was necessary in order to have robust estimates of variable effects because the SCF over samples upper-income households. In each survey year, there were approximately 1,000 low-income households. The 2010 SCF was not included as it was very different from the other years because of the impact of the Great Recession on low

income households (Bricker et al., 2012). The SCF is a triennial, nationally representative survey sponsored by the Federal Reserve Board in cooperation with the Department of the Treasury. This survey was selected because it provides detailed demographic information and extensive financial data for U.S. households.

Sample

This study focused on low-income households, so only households with income of up to 300% of the federal poverty thresholds were included in the sample. The national poverty thresholds, determined by the U.S. Census Bureau, are calculated as a function of income and the number of people in the household and do not vary by geographic location (U.S. Census Bureau, 2014). The 300% cut-off was an appropriate choice for several reasons. The limit of 300% of the poverty thresholds is the highest percentage of the poverty thresholds that has been observed in welfare eligibility programs for low-income households. The use of this limit is also consistent with previous work (Hogarth & Anguelov, 2003).

The 2006 thresholds were used because the most recent survey year, 2007, asked respondents about their income from the previous year. All other survey years were indexed for inflation to 2006 dollars. We define a household as the SCF's primary economic unit, which is the "economically dominant single individual or couple...and all other [financially dependent individuals]." Retired households were also excluded from analysis. For couple households, the household was considered retired if both individuals were retired or if one was retired and the spouse was not working. The final sample for the two logistic regressions included 5,619 non-retired households with incomes under 300% of the poverty thresholds.

Dependent Variable

The dependent variable was an indicator variable distinguishing households who save (coded 1) from households who do not save (coded 0). The SCF asks respondents whether spending was less than, equal to, or greater than income. Households who reported that their spending was less than their income were coded as savers while households reporting spending more than or equal to income were coded as non-savers. As in Yuh and Hanna (2010), if a household reported spending about the same as income but consumption included durable purchases, such as a home or car, the household was categorized as spending less than income.

Analysis

Two logistic regressions were run to test the hypotheses. Model 1 was based on the life cycle hypothesis while Model 2 added the noneconomic and institutional proxies to the variables in Model 1. A likelihood ratio test was then used to determine whether the noneconomic and institutional proxy variables significantly add explanatory power to the model. This test is similar to a full and reduced model test when estimating general linear models (Kutner, Nachtsheim, & Neter, 2004).

Multiple imputation was used in the SCF to ensure privacy and to impute missing data. The SCF staff create five implicates for each household, and for missing values of variables, the values may be different across implicates. Montalto and Sung (1996) noted statistical estimations based on only one implicate will underestimate the variance of effects. Lindamood, Hanna, and Bi (2007) showed that even estimates based on averaging the five implicates will underestimate the variance of effects. The repeated imputation-inference (RII) technique (see Rubin, 1987) was developed to obtain more valid estimates for significance tests, and the RII method was used for both logits, based on based on SAS code developed by Montalto and Yuh (1998). RII techniques account for this additional variation by averaging point estimates and variances across implicates (Rubin, 1987). There are five implicates for each household. RII techniques were used for both logits to improve the estimates of variance (Lindamood et al., 2007; Montalto & Sung, 1996). For descriptive analyses, the survey weight was used to make the results representative, but weighting was not used for the multivariate analyses (Lindamood et al., 2007).

Model 1

Model 1, based on the Yuh and Hanna (2010) life cycle model, included the following independent variables: age, marital status, racial/ethnic status, education, presence of a child under the age of 18, self-employment status, homeownership, income, net worth, current income relative to normal income, future income expectations, health status, and health insurance coverage. Because the life cycle model was simply used in the current study to establish a baseline model of saving behavior, interested readers are referred to Yuh and Hanna's (2010) paper for the theoretical justification for each of these variables under a life cycle framework. For couple households, variables correspond to the respondent's (i.e., the most financially knowledgeable person in the household) characteristics with the exception of education—the highest

education level of anyone in the household was used as the education level.

Several changes were made to the Yuh and Hanna (2010) model. This study used percentiles of the federal poverty thresholds to represent income. As argued by Hogarth and Angelov (2003), this measure corrects for unequal variances but may be more suitable for low-income households. Four categorical variables were created to represent the following increments of the poverty thresholds: up to 100%, 101% to 150%, 151% to 200%, and 201% to 300%. Yuh and Hanna (2010) treated age as a categorical variable while we treat age as a continuous variable and add an age squared term to the model. Lastly, only variables available from 1995 to 2007 were included in the current analysis.

Model 2

Variables used to represent the noneconomic and institutional factors are shown in Figure 1. Noneconomic individual factors included social networks, financial literacy, and reason to save. Institutional factors included access, incentives, and facilitation. Because several variables in Model 1 may have life cycle or institutional explanations, only variables that did not overlap were added as institutional proxies. For example, Beverly and Sherraden (1999) suggested that households with greater net worth have more incentive to save because they are able to take advantage of better financial products that yield higher returns. Sherraden et al. (2010) also point out that income tax incentives to save (e.g. deductible contributions to a traditional IRA or 401(k) plan) yield greater benefits to high income households. Net worth and income were not used to proxy institutional incentives because they were already included in Model 1.

Social Networks. SCF respondents were asked who the household consults for questions regarding credit/borrowing and investment/saving decisions. Among other possible responses, options included the following: broker, attorney, accountant, financial planner, and banker. Consulting a professional advisor may be an important source of norms and goals because these professionals would be very likely to encourage saving and asset accumulation. A dummy variable was created to distinguish households who consulted professional advisors, coded 1, from households who did not consult any professionals, coded 0. Households reporting the use a professional advisor were expected to be more likely to save than households who do not use a professional advisor.

Financial Literacy. The SCF does not contain a direct measure of comprehension of financial literacy but does ask the interviewer for his/her perception about how well the respondent understood the questions asked. The interviewer rates the respondents understanding as excellent, good, fair, or poor; this perception was used as a proxy for financial literacy. For our purposes and given the distribution of responses, it was sufficient to create a dummy variable to distinguish households with excellent or good understanding (coded 1) from households with fair or poor understanding (coded 0). Households who seemed to be more knowledgeable were expected to be more likely to save than seemingly less knowledgeable households.

Reason to Save. Because saving motivation is an important psychological consideration for saving behavior, a dummy variable was created to distinguish households reporting at least one reason to save (coded 1) from households who did not have a reason to save (coded 0). Households reporting at least one reason to save were expected to be more likely to save than households reporting no reasons to save.

Access. A continuous variable, representing the number of financial institutions with which the household has a relationship, was used to measure institutional access. The SCF question asked for the number of financial institutions and excluded institutions with which the household only had credit cards or business accounts—any other financial institution could be counted. Households who have a greater number of relationships with financial institutions were expected to be more likely to save than households who have relationships with fewer financial institutions.

Credit history and availability may also represent access to financial institutions. Households with little access to financial institutions are unlikely to have a credit history or access to credit lines. Because many households who are rejected for credit tend to have high levels of debt, it is important to control for the amount of debt. A dummy variable was used to distinguish debt-free households who have either been rejected for credit during the last 5 years (and did not successfully reapply) or have been discouraged from applying for credit (coded 1) from all other households (coded 2). Based on institutional theory, consumers with access to credit were expected to be more likely to save than households who do not have access to credit, although it is possible that having access to credit may reduce the incentive to save.

Incentives. This study created a dummy variable to indicate welfare receipt as a proxy for this disincentive to save because many programs base eligibility on assets. The SCF questions regarding welfare receipt do not specify which welfare program was utilized, so the proxy does not distinguish among welfare programs with asset limits. Households receiving social welfare benefits (coded 1) were expected to be less likely to save than households not receiving social welfare benefits (coded 0).

Facilitation. The SCF asks whether the household has an employer-sponsored retirement plan or is eligible for such a plan. This is an example of a contractual saving mechanism that facilitates saving behavior. A dummy variable was created to distinguish households who currently have a plan or are eligible for a plan (coded 1) from households who do not have a retirement plan or are ineligible (coded 0). Households with an employer-sponsored retirement plan were expected to be more likely to save than households without these plans.

Results

Descriptive Results

To establish a frame of reference, the sample proportions of the low-income sample were compared to a moderate to upper-income (above 300% of poverty thresholds) sample from the SCF in Table 1. The low-income sample had higher proportions of households with the following characteristics: Black, Hispanic, single females, high school diploma or less, greater uncertainty about future income, poor health status, no access to credit, fewer relationships with financial institutions, fewer employer-sponsored retirement plans, and used professional advisors less. Forty-three percent of low-income households reported spending less than income while 71% of high-income sample report spending less than income.

Model 1

The results of Model 1 are presented in Table 2. The likelihood of saving decreased with age until age 62 then increased with age after age 62, a pattern similar to Yuh and Hanna (2010). Single females and single males were significantly less likely to save than married households. Households with at least one child under the age of 18 were significantly less likely to save than household with no children under the age of 18.

Net worth was positively associated with increased likelihood of saving. Households reporting that current income was low relative to normal income were significantly less likely to save than households who reported current income was approximately the same as normal income. Households who

expected their future income to decrease or who were unsure about future income were significantly less likely to save than households who expected future income to increase. Compared to households with poor health status, households with excellent, good, or fair health were significantly more likely to save. Lastly, households with health insurance were significantly more likely to save than households without insurance.

Model 2

The results of Model 2 are also presented in Table 2. Several effects were consistent and significant between the two models; age, age squared, single females, presence of a child, net worth, current income relative to normal, future income expectations, and health status. Three variables became insignificant after adding the institutional variables, including single males, income between 201% and 300% of the poverty thresholds, and having health insurance coverage.

Of the noneconomic individual factors, receiving advice from a professional advisor and having a reason to save were positively and significantly related to saving behavior. Having a good understanding of the SCF questions was not significantly related to saving behavior. Of the institutional proxies, three of the four were significant predictors. The following characteristics were significantly and positively related to the likelihood of saving: number of financial relationships with institutions, access to credit, and an employer-sponsored retirement plan or being eligible for such a plan. The effects of receiving welfare assistance were not significant.

Likelihood Ratio Test

To test the explanatory power of the noneconomic individual factors and institutional factors in Model 2, a likelihood ratio test was performed. The null hypothesis for this test is that all of the additional coefficients were equal to zero. The test statistic, χ^2 , is calculated based on the likelihood functions from the full model (Model 2) and the reduced model (Model 1) (Kutner et al., 2004). Based on the results of the two logits, χ^2 is approximately 107 with 7 degrees of freedom ($p < .0001$). Therefore, we reject the null hypothesis, concluding that the noneconomic individual factors and institutional factors significantly add to the explanatory power of the model.

Discussion

This study sought to understand the influence of noneconomic individual factors and institutional factors on low-income household saving behavior. The results from

the two logistic regressions demonstrate that institutional theory may be a useful framework for guiding research and policy geared towards low-income consumers. The findings provide evidence supporting two of the three hypotheses regarding noneconomic individual factors and two of the three hypotheses regarding institutional factors. Social networks (H1) and psychological factors (H3) were positively and significantly associated with saving behavior while the effect of financial literacy (H2) was not significant. Regarding the institutional factors, access (H4) and facilitation (H6) were positively and significantly associated with saving behavior while the effect of incentives (H5) was not significant. Considering the lack of support for H2 and H5, one possible explanation is that the proxy for financial literacy and for incentives may not have accurately measured the factor—the financial literacy proxy was based on the interviewer's perception of the respondent's knowledge and the welfare receipt proxy included programs that may or may not have had asset limitations. Beside the measurement limitation, other possible explanations for these findings are that financial literacy has a limited impact on financial behavior, and the benefits of saving may outweigh the cost of losing eligibility for welfare programs.

While the findings of Model 1 were generally consistent with prior research, there are several differences compared to Yuh and Hanna's findings (2010). This study did not provide evidence of saving differences between racial/ethnic groups. A possible explanation is that there are racial/ethnic differences in factors already included in the model but that racial differences do not directly account for the differences in saving behavior (Fisher, 2010). A number of other explanatory variables were not significant predictors in the current study compared to the Yuh and Hanna (2010) findings; therefore, we conclude that low-income household saving behavior differs in systematic ways compared to the general U.S. population.

Our results in Model 2 regarding the positive effects of having a reason to save and expecting income to increase on saving were similar to those found by Hogarth and Anguelov (2003). Additionally, being rejected for credit during the last five years and having a child under the age of 18 were associated with a decreased likelihood of saving, as found by Hogarth and Anguelov (2003). This study also supported the findings of other researchers that gender has an influence on economic decision making (Whitaker, Bokemeiner, & Loveridge, 2013) and that single females are significantly less likely to participate in saving (Yuh & Hanna, 2010). The effect of having health insurance on saving was not significant after

Table 1. Descriptive Results of Low-Income Households Compared to Moderate to Upper-Income Households

Variable	Category	Low-Income Sample (≤300% of Poverty Thresholds)		Moderate to Upper-Income Sample (>300% of Poverty Thresholds)	
		Percentage in Category (n = 5,619)	Percentage of Savers (43.43%)	Percentage in Category (n = 12,435)	Percentage of Savers (71.15%)
Age	< 30	28.74%	45.00%	11.42%	71.14%
	30-39	27.75%	43.28%	22.57%	70.31%
	40-49	22.34%	41.83%	29.90%	69.81%
	50-59	12.44%	38.17%	23.38%	72.81%
	60-69	6.07%	48.04%	9.45%	73.93%
	> 69	2.65%	55.49%	3.28%	69.59%
Marital Status	Married	40.56%	49.67%	65.29%	73.21%
	Partner	10.48%	43.95%	7.20%	67.63%
	Single Male	14.36%	42.22%	13.21%	72.01%
	Single Female	34.60%	36.44%	14.31%	62.75%
Race/Ethnicity	White	62.14%	46.03%	82.66%	72.51%
	Black	19.35%	36.11%	8.19%	61.09%
	Hispanic	14.96%	41.03%	4.85%	62.71%
	Asian/Other	3.55%	47.90%	4.29%	73.84%
Education	Less than H.S. Diploma	14.93%	34.47%	2.03%	61.87%
	H.S. Diploma	37.85%	42.67%	19.34%	67.03%
	Some College	30.28%	45.09%	27.06%	68.18%
	Bachelor's Degree	12.89%	50.19%	28.60%	72.61%
	Graduate Degree	4.06%	49.61%	22.98%	77.13%
Presence of a Child <18	Yes	59.95%	42.61%	46.01%	69.62%
	No	40.05%	44.65%	53.99%	72.46%
Net Worth	< 25,000	55.87%	36.79%	13.85%	56.75%
	25,000-49,999	11.69%	49.16%	7.51%	62.81%
	50,000-99,999	11.69%	49.92%	12.52%	63.86%
	>100,000	20.75%	54.42%	66.12%	76.50%
Self-Employed	Yes	14.29%	46.56%	20.05%	73.71%
	No	85.71%	42.91%	79.95%	70.51%
Homeowner	Yes	46.20%	49.08%	80.13%	72.78%
	No	53.80%	38.57%	19.87%	64.62%
Current Income Relative to Normal Income	Same	64.24%	45.77%	76.55%	72.16%
	High	7.13%	44.76%	12.98%	74.14%
	Low	28.63%	37.85%	10.47%	60.10%
Future Income Expectations	Increase	12.45%	50.20%	18.07%	77.68%
	Same	23.62%	48.59%	36.98%	74.29%
	Decrease	16.71%	41.55%	20.56%	68.12%
	Not Sure	47.22%	39.72%	24.38%	24.38%

Table 1 Continued. Descriptive Results of Low-Income Households Compared to Moderate to Upper-Income Households

Variable	Category	Low-Income Sample (≤300% of Poverty Thresholds)		Moderate to Upper-Income Sample (>300% of Poverty Thresholds)	
		Percentage in Category (n = 5,619)	Percentage of Savers (43.43%)	Percentage in Category (n = 12,435)	Percentage of Savers (71.15%)
Health Status	Poor	5.78%	28.58%	2.74%	60.12%
	Fair	24.84%	42.43%	15.84%	64.83%
	Good	48.98%	43.70%	53.42%	71.42%
	Excellent	20.40%	48.18%	28.00%	75.30%
Health Insurance Coverage	Yes	62.10%	46.06%	90.15%	72.33%
	No	37.90%	39.11%	9.85%	60.39%
Noneconomic Individual Factors					
Advice from Professional Advisor	Yes	45.53%	47.90%	63.40%	67.70%
	No	54.47%	39.69%	36.60%	73.15%
Good Understanding	Yes	84.79%	44.65%	95.59%	71.62%
	No	15.21%	36.59%	4.41%	61.13%
Reason to Save	Yes	94.02%	44.93%	98.53%	71.66%
	No	5.98%	19.80%	1.47%	37.41%
Institutional Factors					
Number of Financial Institutions	1	26.73%	37.74%	6.48%	59.54%
	2	28.09%	45.01%	15.01%	64.41%
	3	21.26%	48.14%	20.68%	70.24%
	4	12.48%	49.94%	19.33%	71.61%
	5 or more	11.45%	54.54%	38.49%	76.13%
No Credit Access	Yes	8.13%	30.93%	0.93%	49.27%
	No	91.87%	44.53%	99.07%	71.36%
Received Welfare Assistance	Yes	15.31%	30.61%	0.62%	57.69%
	No	84.69%	45.74%	99.38%	71.24%
Employer Sponsored Retirement Plan	Yes	39.98%	50.08%	73.50%	73.10%
	No	60.02%	38.99%	26.50%	65.76%

Source: Survey of Consumer Finances 1995-2007, weighted data excluding retired households. The actual n for each group was unweighted and averaged across implicates.

controlling for individual and institutional factors. Hogarth and Anguelov (2003) found that Hispanics, homeowners, and households with health insurance were significantly more likely to save than otherwise similar households, but they used a broader saving measure that included reported saving habits. We found that better health was associated with an increased likelihood of saving. While this may suggest that efforts to improve health among the poor might increase saving, the causality could be the other direction (i.e., saving may lead to improved health); future research should investigate this issue.

The results should be interpreted in light of the limitations associated with the analysis. Because this study relied on a large, cross-sectional survey and proxies for institutional dimensions, causality cannot be directly inferred. Therefore, we suggest that future research use experimental designs to further investigate the causal relationship between institutions and low-income household saving behavior. Qualitative studies may also be useful in helping researchers understand how low-income consumers think about institutional relationships and the effect those relationships have on saving

Table 2. Logistic Regressions for Whether a Household Saved

Variable (n = 5,619)	Model 1				Model 2			
	Estimate	SE	p-value	Odds Ratio	Estimate	SE	p-value	Odds Ratio
Intercept	-0.373	0.256	0.149	-	-1.263	0.301	<.0001	-
Survey Year (1995)								
1998	-0.025	0.087	0.775	0.975	-0.115	0.089	0.204	0.891
2001	0.059	0.088	0.504	1.061	-0.012	0.090	0.901	0.989
2004	0.021	0.089	0.816	1.021	-0.066	0.091	0.48	0.936
2007	0.065	0.090	0.490	1.067	-0.047	0.093	0.636	0.955
Age	-0.025	0.008	0.003	0.976	-0.027	0.008	0.001	0.973
Age Squared	0.000	0.000	0.030	1	0.000	0.000	0.008	1
Marital Status (Married)								
Partner	-0.058	0.101	0.582	0.944	-0.049	0.102	0.646	0.953
Single Male	-0.209	0.097	0.035	0.811	-0.14	0.098	0.165	0.869
Single Female	-0.342	0.074	<.0001	0.71	-0.293	0.076	0.000	0.746
Race/Ethnicity (White)								
Black	-0.133	0.079	0.095	0.875	-0.112	0.08	0.168	0.894
Hispanic	0.036	0.090	0.689	1.037	0.070	0.091	0.451	1.073
Asian/Other	0.175	0.151	0.254	1.191	0.248	0.153	0.110	1.281
Education (H.S. Diploma)								
Less than H.S. Diploma	-0.125	0.094	0.19	0.883	-0.034	0.097	0.725	0.966
Some College	0.062	0.069	0.379	1.064	-0.024	0.071	0.740	0.976
Bachelor's Degree	0.152	0.091	0.101	1.164	0.022	0.094	0.819	1.022
Graduate Degree	0.062	0.140	0.679	1.063	-0.108	0.143	0.466	0.898
Presence of a Child <18	-0.178	0.066	0.009	0.837	-0.194	0.068	0.005	0.824
Income (Up to 100%)								
101%-150%	-0.062	0.090	0.532	0.94	-0.126	0.092	0.205	0.881
151%-200%	0.196	0.091	0.044	1.216	0.096	0.095	0.347	1.101
201%-300%	0.27	0.082	0.002	1.31	0.118	0.087	0.187	1.126
Log Net Worth	0.058	0.006	<.0001	1.059	0.054	0.006	<.0001	1.055
Self-Employed	0.007	0.081	0.929	1.007	0.018	0.084	0.834	1.018
Homeowner	0.048	0.070	0.505	1.049	-0.084	0.073	0.264	0.92
Current Income Relative to Normal Income (Same)								
High	-0.012	0.113	0.919	0.988	-0.036	0.114	0.758	0.965
Low	-0.198	0.066	0.003	0.82	-0.234	0.067	0.001	0.791
Future Income Expectations (Increase)								
Same	-0.161	0.098	0.104	0.851	-0.130	0.099	0.192	0.878
Decrease	-0.442	0.108	<.0001	0.643	-0.409	0.108	0.000	0.665
Not Sure	-0.360	0.089	<.0001	0.698	-0.299	0.090	0.001	0.742

Table 2 Continued. Logistic Regressions for Whether a Household Saved

Variable (n = 5,619)	Model 1				Model 2			
	Estimate	SE	p-value	Odds Ratio	Estimate	SE	p-value	Odds Ratio
Health Status (Poor)								
Excellent	0.816	0.147	<.0001	2.261	0.718	0.149	<.0001	2.051
Good	0.635	0.138	<.0001	1.887	0.514	0.140	0.000	1.672
Fair	0.635	0.142	<.0001	1.887	0.530	0.144	0.000	1.699
Health Insurance Coverage	0.132	0.062	0.039	1.141	0.057	0.064	0.389	1.059
Noneconomic Individual Factors								
Advice from Professional Advisor	-	-	-	-	0.161	0.059	0.007	1.174
Good Understanding	-	-	-	-	0.127	0.084	0.142	1.135
Reason to Save	-	-	-	-	0.936	0.144	<.0001	2.548
Institutional Factors								
Number of Financial Institutions	-	-	-	-	0.079	0.018	<.0001	1.082
No Credit Access	-	-	-	-	-0.257	0.113	0.024	0.774
Received Welfare Assistance	-	-	-	-	-0.075	0.095	0.439	0.928
Employer Sponsored Retirement Plan	-	-	-	-	0.158	0.066	0.017	1.171
	Model 1				Model 2			
Pseudo R ² (Nagelkerke)	0.064		n/a		0.079		n/a	
Concordance Index, <i>c</i>	0.659		n/a		0.676		n/a	
Model Fit Statistic χ^2 (df)	431.4352(32)		<.0001		538.5269 (39)		<.0001	
Likelihood Ratio Test χ^2 (df)	-		-		107.092 (7)		<.0001	

Source: Survey of Consumer Finances 1995-2007. Unweighted analysis combining all implicates and using RII procedures, excluding retired households and households with income above 300% of the poverty thresholds. Reference categories are in parentheses. Bolded effects were significant at the .05 alpha level.

behavior. Using panel data to study low-income household saving behavior over time may also help increase our understanding of the long-term effects of saving. Furthermore, one difficulty associated with the institutional theory approach is choosing proxies for the institutional dimensions. Therefore, future work should explore alternative measures for the institutional dimensions.

Implications

Results were largely consistent with expectations, demonstrating the potential of implementing policies that combine individual factors with institutional factors to promote saving behavior. On the individual level, the findings indicate that working with financial professionals and having a reason to save may help improve saving behavior among low-income households, a traditionally neglected clientele in the U.S. Policymakers may consider ways to

encourage financial professionals to work with low-income households. Encouraging innovation in fee structures may help remove some of the barriers in offering professional financial services to low-income households. Financial service professionals can also provide financial education regarding financial institutions, products, and the benefits of saving. Improving financial education is one of the main objectives of the Association for Counseling and Planning Education (AFCPE) which sponsors the Accredited Financial Counselor designation. Many of these counselors operate on military bases and other avenues in which services can be provided for little or no cost (Oleson, Nielsen, & Martin, 2004).

Of the institutional factors, having access to financial institutions is an important predictor of saving behavior. Although low-income households may have a disincentive to save due to asset limitations for welfare programs, this effect

was not significant in the current study. This may suggest that the potential benefits of saving outweigh the potential of lost welfare. Ideally, only programs with asset limitations would have counted in this variable—data limitations did not allow for this level of control. Similar to prior research (Loibl, 2009), these findings also suggest facilitating saving through automatic transfers (such as employer-sponsored plans) may help consumers save. Financial service professionals can also help consumers take advantage of employer-provided plans and encourage business owners and employers to use automatic enrollment features for retirement plans.

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About the authors

Stuart J. Heckman is an Assistant Professor of Personal Financial Planning in the School of Family Studies and Human Services at Kansas State University. His research focuses on the financial decision-making and financial wellness of college students, young adults, and low-income households and he holds the CERTIFIED FINANCIAL PLANNER™ designation. He earned his B.S. in Personal Financial Planning from Kansas State University and his M.S. and Ph.D. in Family Resource Management from The Ohio State University.

Sherman D. Hanna, Professor, Human Sciences Department, Ohio State University, has taught undergraduate and graduate financial planning and consumer economics courses and advised graduate students at Ohio State University, Kansas State University, Auburn University, and Southern Illinois University-Carbondale. Currently he is the Program Director for the undergraduate financial planning program registered with the CFP® Board. His research has covered many topics in personal finance, including household saving, credit use, retirement adequacy, investment choices, risk tolerance, and racial/ethnic differences in financial decisions. He has been quoted in the *Wall Street Journal*, *the New York Times*, and numerous other news outlets. He has presented papers at conferences in Asia and Europe. He has advised 34 Ph.D. students, including some who are tenured faculty at universities in the United States, Korea, and Taiwan, as well as others who have prominent positions in the financial industry. He was the founding editor of the *Journal of Financial Counseling and Planning*, the founding co-editor of the journal *Housing and Society*. He was named a Distinguished Fellow of the American Council on Consumer Interests and the Association for Financial Counseling and Planning Education, and received the Financial Educator of the Year award from the Association for Financial Counseling and Planning Education.