Factors Related to Saving Behavior among Low-Income Households in the 1995-2007 Survey of Consumer Finances

Stuart J. Heckman, The Ohio State University[1]
Sherman D. Hanna, The Ohio State University[2]

Abstract

This study explored saving behavior among low-income households through the institutional theory of saving behavior by (1) determining asset differences between saving and non-saving households, (2) exploring factors related to saving behavior, and (3) identifying differences between two saving measures: a broad measure and a narrow measure.

Based on the narrow measure, 43% of households under 300% of the poverty threshold saved, but 75% of these households saved based on the broad measure. Most of the multivariate results were consistent with hypotheses based on the institutional theory of savings, with the most important result that was not consistent was that racial/ethnic groups other than white were more likely to be savers under the broad measure than otherwise similar white households.

Introduction

The last two decades have seen a substantial increase in asset building as a welfare strategy. M. Sherraden (1991) explained that there are asset effects from ownership that cause a number of positive outcomes. This has inspired immense research and has raised important program considerations in terms of welfare policy in the U.S. There has been a large growth in asset building programs such as Individual Development Accounts (IDAs) over the last decade, but there is currently a great deal of concern that funding for these programs will not be available in the future. Budget cuts have caused many groups, including the federal government, to curtail the funding of asset building programs. Whether funding is available moving forward or not, it is important for researchers to try to understand the saving behavior of low-income households. If IDA programs continue to exist and gain greater monetary support, this knowledge will help policymakers make more effective decisions. If asset building programs do not persist due to the lack of funding, it will be important for research to identify other possible alternatives.

While many researchers have looked at saving behaviors or asset levels in connection to IDAs (Han, Grinstein-Weiss, & Sherraden, 2009; Han & Sherraden, 2009; Loibl, Grinstein-Weiss, Min, & Bird, 2010; McKernan & Sherraden, 2008; Schreiner & Sherraden, 2006), this study is primarily concerned with the saving behaviors of low-income households apart from

[1] Stuart J. Heckman, Ph.D. Student, Consumer Sciences Department, 1787 Neil Avenue, Ohio State University, Columbus, OH 43210. Fax: 614-688-8133. heckman.59@osu.edu
[2] Sherman D. Hanna, Professor, Consumer Sciences Department, 1787 Neil Avenue
Columbus, OH 43210. Phone: 614-292-4584. Fax: 614-688-8133. Email: hanna.1@osu.edu

IDA participation. This focus also reflects recent changes in the economic well-being of U.S. citizens.

Many Americans are now concerned that they may soon find that they are classified by the U.S. Census Bureau as a poor household (Short, 2011). The Census Bureau recently released a new measure of poverty that put many more Americans in the poor or near-poor category. The new measure is based on disposable income, and it has many people concerned that poverty is a more serious problem in the U.S. than was previously assumed (Short, 2011). As the number of Americans facing poverty increases, there is much to be gained by expanding research in this area. This also illustrates the importance of measurement when it comes to poverty issues, which will be discussed throughout this study. By learning more about typical low-income household saving behavior and the factors that lead to increased likelihood of saving, the implementation of IDA programs and other efforts could be made more effective. This study will provide a better understanding of saving behavior among low-income households by pursuing the following research questions:

Q1: Do low-income households who save have greater levels of assets than low-income households who do not save?

Q2: What are the factors related to saving behavior among low-income households?

Q3: Do these factors change between alternate saving measures?

Literature Review

A broad body of work on saving behavior exists from researchers across multiple disciplines. The literature reflects the diversity of the researchers as there is incredible variation in theoretical approaches, questions asked, and conclusions reached in terms of saving behavior. This discussion will review research in the following areas: (1) definition and measurement of saving, (2) determinants of saving, and (3) low-income saving.

Definition and Measurement of Saving

For this study, saving will refer to current income being set aside for future consumption. Empirically, there are several ways saving has traditionally been measured. These differences seem to primarily be a result of the type of data that is being used since researchers are often constrained in variable measurement by the limits of the dataset used. Researches using datasets containing income and expenditure information will typically subtract expenditures from income, as in Bae, Hanna, and Lindamood (1993). Positive differences represent saving while negative differences represent dissaving or borrowing. For researchers using panel studies (Browning & Lusardi, 1996; Chang, 1994), saving can be measured as increases in net worth. Saving can also be measured by household self-reported behavior. This is the most common saving measure for research using the Survey of Consumer Finances (SCF).

In the SCF, there are several questions that attempt to measure savings. The most commonly used question asks whether or not household income exceeded expenses (Fisher & Hsu, 2012; Fisher & Montalto, 2011; Rha, Montalto, & Hanna, 2006; Yuh & Hanna, 2010).

There have also been several studies using the SCF in which this measurement is used in addition to at least one other measure (Fisher, 2010b; Hogarth & Anguelov, 2003). Specifically, there are several questions on the survey that do not seem to have a consensus from researchers on how they should be treated.

The SCF asks the respondent to check the following statements that apply to his or her household: (1) puts aside money regularly, (2) saves out of "other income", (3) saves a specific member's income while spending another's, or (4) saves the amount that is "left over at the end of each month". Hogarth and Anguelov (2003) treat a positive response to any of the above questions as being a usual saver. In their study, a saving household was a household who was either a usual saver or current saver (spent less than income). Fisher (2010a) defined saving as a household who responded positively to questions (1) and (3): the household put aside money regularly or saved a specific member's income while spending another's. Additionally, Fisher (2010b) suggested that households who spend less than income are short-term savers, while positive responses to question (1), put aside money regularly, correspond to long-term savers.

Determinants of Saving

Many studies have explored factors that relate to greater likelihoods of saving in the U.S. It has been found that the following demographic characteristics are associated with greater likelihoods of saving: income (Fisher & Montalto, 2011; Hogarth & Anguelov, 2003; Rha et al., 2006; Yuh & Hanna, 2010), longer planning horizons (Fisher & Montalto, 2011; Hogarth & Anguelov, 2003), owning a home (Fisher & Montalto, 2011; Hogarth & Anguelov, 2003; Rha et al., 2006; Yuh & Hanna, 2010). Additionally, Yuh and Hanna (2010) found that younger households and self-employed households were more likely to save. Lower education and having a child under the age of 19 are associated with lower likelihoods of saving (Hogarth & Anguelov, 2003; Yuh & Hanna, 2010).

Research has also suggested that there are important differences between genders (Fisher, 2010b). Yuh and Hanna (2010) found that single females were less likely to save than married households. Research on racial/ethnic groups has also pointed to some interesting differences. Yuh and Hanna (2010) found that black households were less likely to save than white households, but Fisher (2010a) concluded that this difference is driven primarily by differences in the individual determinants of saving behavior and not racial/ethnic status itself. Fisher and Hsu (2012) suggested alternative saving models may be required after finding that determinants that were significant for white households were not significant for Hispanic households. However, it is also possible that this lack of significance is explained by the use of only one survey year, which meant that there were a small number of Hispanic households for estimation of effects in multivariate analyses (c.f., Lee & Hanna, 2012).

Low-Income Saving

While the literature on saving behavior in relation to IDA programs is extensive, there has been much less work on the behavior of low-income households outside of the context of an

IDA program. A rare exception is the work by Hogarth and Anguelov (2003), cited previously in the discussion regarding determinants of saving. They sought to understand the saving behaviors of poor and low-income households by exploring whether the poor are able to save, the asset levels of the poor, and also the determinants of being a saver in the hopes of changing behavior of low-income households. They found that the poor do in fact save, that the asset levels are very low, and identified several important determinants of the likelihood of being a saver (Hogarth & Anguelov, 2003). Although many determinants were studied, the following characteristics were shown to have the largest positive impact on the likelihood that low-income households would save: at least one reason to save, owning a bank account, no bad credit history, and longer planning horizons (Hogarth & Anguelov, 2003).

Gap

To our knowledge there has not been any work that has examined the differences in determinants by the measurement of saving that is utilized. Fisher (2010b) did run separate logistic regressions for two definitions of saving, although she considered these two definitions to be describing short-term and long-term saving. Differences caused by measurement variation, left unexamined, could potentially alter research agendas and policy decisions. It is critical that researchers consider the effect of saving measurement. There also exists a gap in the research regarding low-income saving behavior outside of the context of an IDA program. More stringent empirical work is needed to provide evidence in support of the institutional approach to saving behavior. Specifically, this study will explore variables that may be used as proxies for the institutional dimensions identified in the institutional theory. Given the uncertainty of the future of IDA programs, it is also important that we more fully understand the behavior of these households apart from program intervention. We may be missing valuable opportunities to more efficiently supplement the behavior that is already taking place in these households.

Theoretical Framework

After reviewing the strengths and weaknesses of neo-classical economic and behavioral economic approaches, Beverly and Sherraden (1999) concluded that the current array of theory regarding saving behavior is inadequate since these approaches have been less than perfect in explaining empirical observations of saving behavior, particularly for low-income households. They suggested that more emphasis should be placed on the roles that institutions play in shaping saving behavior. This institutional approach built upon the original work of M. Sherraden (1991) who argued that the stock of capital (assets) differs in important ways from the flow of capital (income).

Beverly and Sherraden (1999) argued that "individual and household saving behavior is shaped by the institutional processes through which saving occurs" (p. 463). Beverly and Sherraden (1999) identified four institutional determinants of saving: (1) institutionalized savings mechanisms, (2) financial information and education, (3) attractive savings incentives, (4) facilitation. Subsequent work (Schreiner & Sherraden, 2006; M. Sherraden & Barr, 2005; M.

Sherraden, Schreiner, & Beverly, 2003) led to the identification of a total of seven institutional dimensions of saving: access, security, incentives, information, facilitation, expectations, and limits. While these concepts have been fairly stable, there has been variation in the names of these dimensions, but as they are listed above seems to be the most updated categories. M.S. Sherraden, McBride, and Beverly (2010) provide a concise overview of these various dimensions. This section will detail these dimensions, outline the conceptual model for the current study, and identify the research hypotheses.

Institutional Dimensions of Saving Behavior

Access. The extent to which an individual is able to use and communicate with institutions is represented by access. It is expected that having access to institutional saving structures, such as bank accounts and saving accounts, will increase the likelihood of saving. These mechanisms make saving more convenient and their mere presence may suggest to the household that saving is important (Beverly & Sherraden, 1999), thus enhancing the likelihood of saving. The literature on low-income use of financial services suggests that these households do not have the same access to low-cost banking services as do middle and upper income households (Barr & Blank, 2008; Hogarth & O'Donnell, 1999; Seidman, Hababou, & Kramer, 2005).

Security. Security refers to the safety of an individual's savings. Considering the macro level suggests that savings are safe to the extent that the economy is growing, has low inflation, and a stable political environment (Beverly et al., 2008). This macro level consideration emphasizes the relationship between the institutions and the individuals in a political and historical context. M.S. Sherraden et al. (2010) suggest that this is an important consideration in the U.S. due to a historical relationship between institutions and low-income communities in which many minority groups have been underserved and exploited. It is believed that greater security would increase the likelihood of saving (Beverly & Sherraden, 1999; M. S. Sherraden et al., 2010).

Incentives. Generally, incentives increase the rewards of saving. Some incentives, such as a 401(k) match and high returns, are likely to encourage saving. Low-income households have less access than high-income households to incentives to save for several reasons. Tax incentives to save benefit the affluent much more than the poor (Beverly & Sherraden, 1999). Affluent households also have more access to saving and investment vehicles with higher returns (Beverly & Sherraden, 1999). In addition to incentives to save, it is also important to consider disincentives to save. To be eligible for many social welfare programs, households must meet asset requirements that place limits on the amount of resources the household may possess. These limits are likely to discourage savings (Beverly & Sherraden, 1999).

Information. Our financial system is incredibly complex, and it can be very difficult to navigate the variety of financial products and services offered. Informed consumers, those who understand the benefits and strategies of wealth accumulation and other financial behaviors, should have greater success in saving. Increasing an individual's understanding of these benefits

should also increase their willingness to save (Beverly & Sherraden, 1999). Research has shown the low-levels of financial knowledge, especially among households with less education and lower incomes (M. S. Sherraden et al., 2010).

Facilitation. Facilitation refers to the extent to which individuals are able to take advantage of saving plans that make it easier to save and more difficult to choose current consumption at the expense of future consumption (Beverly & Sherraden, 1999; M. S. Sherraden et al., 2010). Generally, this would include contractual saving mechanisms such as automatic payroll deduction and federal and state tax withholding (Beverly & Sherraden, 1999).

Expectations. Expectations are the "rules, norms, and goals" (p. 37) associated with participation in a savings program (M. S. Sherraden et al., 2010). Specifically, this determinant has been concerned with rules in IDA programs. It may also be applied to savings in 401(k) matching programs. Research has shown that individuals will often contribute the minimum required to obtain the full employer match, thus creating a savings target (M. S. Sherraden et al., 2010).

Restrictions. For many savings programs, there are limits on when the assets can be accessed or how the assets may be used. While M.S. Sherraden et al. (2010) initially suggest that this determinant reduces savings, they conclude that restrictions actually encourage saving since people are generally aware that they are likely to withdraw savings if given the opportunity.

Theoretical Framework for the Current Study

Although much of the use of this theory has been applied to saving in IDAs, this study will apply this theory to low-income saving behavior outside of IDA programs. Two modifications to the theory will be made for the purposes of the study. For the institutional determinant of expectations, this study will use a more general definition of expectations. Social groups or reference groups are especially important in determining norms and goals for personal financial management behavior, including saving. Therefore, this study will treat expectations as rules, goals, and norms associated with personal financial management. The last determinant, restrictions, refers to limits on when the savings can be accessed. Although this can be applied to retirement plans, the expected decrease in saving will be eliminated by the greater increase in likelihood associated with having access to a retirement plan. Therefore, for the purposes of this study, the first five dimensions and slight modification on the sixth will provide a sufficient theoretical framework. Figure 1 illustrates the six dimensions used in the current study and the effect that is expected on saving behavior.

Research Hypotheses

For the following hypotheses, households refer to low-income households. The following hypotheses will be tested for both a broad and a narrow measure of saving (discussed in the method section). As mentioned previously, it is important to make this comparison since we currently do not know how the factors related to saving behavior are influenced by the different measures of saving.

H1: Households with greater levels of access to financial institutions will be more likely to be identified as a saver than households with less access.

H2: Households who have more secure relationships with financial institutions will be more likely to save than households with less secure relationships.

H3: Households with greater incentives to save will be more likely to save than households with fewer incentives.

H4: Households with more financial information will be more likely to save than households with less information.

H5: Households with institutional facilitation of saving will be more likely to save than households lacking facilitation.

H6: Households with greater social or family expectations to save will be more likely to save than households with fewer expectations.

Method

Data

This study used a combined data set of the Survey of Consumer Finances (SCF) composed of survey years 1995, 1998, 2001, 2004 and 2007. (The 2010 data set was recently released to researchers, but given the unusual economic conditions in that survey year, reflecting a recession deeper than any in the previous 70 years, we did not include it in our analyses as we are interested in the long-term possibilities for saving by low income households.) The SCF is a triennial, nationally representative survey sponsored by the Federal Reserve Board in cooperation with the Department of the Treasury. This cross-section survey provides rich information about consumer financial behavior in the U.S. Since the SFC uses multiple imputation techniques, discussed later, it is important to note that this analysis used all five implicates of the SCF for each survey year.

Sample

This study has a focus 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 are determined by the U.S. Census Bureau and are calculated as a function of income and the number of people in the household and do not vary by geographic location within the U.S. (U.S. Census Bureau, 2011). For a family of four in 2006, an annual income of $20,444 constituted 100% of the threshold while an income of $61,332 constituted 300%. 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 are indexed for inflation to 2006 dollars.

The 300% cut-off was chosen for several reasons. The limit of 300% of the poverty thresholds is the highest percentage of the poverty threshold that has been observed in welfare eligibility programs for low-income households. Additionally, the use of this limit is consistent

with previous work (Hogarth & Anguelov, 2003). Therefore, 300% was an appropriate limit for the purposes of this study.

In addition to limiting the sample to 300% of the poverty threshold, this study also excluded retired households from the analysis. The primary justification for this additional restriction is the population of interest. Retired low-income households and those who work full time for their low wages face very different situations in terms of their well-being. The retired household may only receive $1,000 a month in income, but the non-retired household may work full time and only receive $1,000 a month. Those are two very different situations. For couple households, the household was considered retired if either spouse was retired. The final sample for the two logistic regressions included 5,619 non-retired households with incomes under 300% of the poverty threshold.

Analysis

To test the first research question, differences in key financial variables were analyzed between saving and non-saving households. Since households were placed in either the saving or non-saving category, the use of the independent samples t-test is most appropriate (Field & Miles, 2010). The variables of interest included net worth, financial assets, and non-financial assets. A means test was carried out for each variable at various levels of the poverty thresholds. Additionally, since the measurement of saving is also of interest, two different sets of means tests were carried out for the broad and narrow measures of saving. Therefore, these tests allowed comparisons to be made between saving and non-saving households at different levels of the poverty threshold for each variable.

Multiple logistic regression was used to model the logarithm of the odds that the response varies in relation to a set of linear predictor variables in order to explore factors related to saving behavior. In addition to the independent variables discussed earlier, the logistic regression also controlled for survey year. It is important to note that since each of the hypotheses are testing directional effects, the p-value was calculated based on a one-sided test if the result was consistent with the hypothesized direction.

The SCF imputes values for missing data using multiple imputation techniques. This allows for a greater number of complete observations and helps to ensure the privacy of respondents. The implicate structure of the SCF leads to biased estimates of the parameter variances unless repeated-imputation-inference (RII) techniques are used. Generally speaking, analyses that do not use RII techniques tend to underestimate the variance (Lindamood, Hanna, & Bi, 2007) and overestimate the significance levels of parameters (Montalto & Sung, 1996). RII techniques move estimates closer to the true values by averaging point estimates across implicates and by averaging variances across implicates (Rubin, 1987). RII techniques were used in this study for the means tests and the logistic regressions. The RII procedure for the logistic regression was based on the SAS code described in Montalto and Yuh (1998) and the RII code for the means test was based on the code developed by Chen (2007).

Dependent Variable

The dependent variable in this study is a dummy variable that categorizes each household as a saver (coded 1) or a non-saver (coded 0). In order to examine measurement effects, two saving measures, a broad measure and a narrow measure, were used. The broad measure was equivalent to the definition of saving used in Hogarth and Anguelov (2003); that is, the household either spent less than income or checked any of the four saving behavior questions on the SCF (see previous saving definition discussion). The narrow measure included only those households who reported spending less than income. These definitions are illustrated in Figure 2.

Independent Variables

Access. One way to measure the access a household has to financial institutions is to examine whether the household owns a bank account. It is often difficult and expensive to carry out basic financial transactions, such as cashing a check, without a bank account. Thus having a bank account can represent important financial institution access. A dummy variable was created for bank account ownership. On the SCF, bank account ownership will be measured by a combination of three questions. The household will be classified as owning a bank account if they have a checking account, savings account, or money market account. Households owning at least one of these bank accounts were coded 1, while households without any of these accounts were coded 0.

Credit history and availability may also represent access to financial institutions. Households with little access to these institutions are unlikely to have much of a credit history or access to any credit lines. From the SCF, it is possible to determine whether households have been rejected for credit during the last 5 years and did not successfully reapply or have not applied because they thought they would be turned down. Since many households who are turned down already have a lot of credit, it is important to control for the amount of debt. This analysis created one dummy variable that represents households who do not have debt and have either been rejected for credit during the last 5 years (and did not successfully reapply) or have been discouraged from applying for credit. This variable was coded 1 if the household did not have debt and either was rejected or did not apply because they thought they would be rejected; all other households were coded 0.

Security. Historical relationships between groups and financial institutions were represented by a set of dummy variables for racial/ethnic identity. Four categories of race/ethnicity were created: Black, White, Hispanic, Asian/Other. These variables were coded 1 if the respondent identified with the race/ethnicity and 0 if he or she did not. This variable represented the racial/ethnic identity of the respondent in the SCF.

Information. Although it can be difficult to precisely measure the amount of information a household has access to, there are several questions from the SCF that may be used make inferences about the household's information access.

Households with older respondents are likely to have greater experience with financial markets and products. It is most appropriate to use the age of the respondent because the respondent in the SCF is the most financially knowledgeable person in couple households.

Therefore, age may be thought of as a proxy for information, since older consumers presumably have more knowledge in financial decisions. In this study, age was a continuous variable, although categories were also created for descriptive purposes. In order to control for a non-linear relationship, age squared was also included in the model.

Education may also be used as a proxy for information. Consumers with greater levels of education should have greater levels of knowledge in several respects. For one, it is more likely that they have taken a formal personal finance class than consumers with less education. Similar to households with greater income, more educated households are generally thought to have networks and resources for financial information. The SCF collects the highest level of education attained by members of the household. This study used the education of the respondent for single member households and the highest education level between the respondent and spouse for couple households. Five dummy variables were created to represent these education categories: less than high school, high school diploma, some college, college degree with no graduate degree, and graduate degree. These variables were coded 1 if it correctly described the household's member with the highest education and 0 if it did not.

Lastly, the SCF asks the interviewer for his/her perception about how well the respondent understood the questions that were asked. The interviewer rates the respondents understanding as excellent, good, fair, and poor. For the purposes of this study and given the distribution of these 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.

Incentives. The SCF provides several questions that allow researchers to think about the incentives that a household has to save. Beverly and Sherraden (1999) suggested that households with greater net worth are able to take advantage of better financial products that yield higher returns, while households with low or negative net worth do not meet minimum requirements for more attractive products. Therefore, this study created a continuous variable by taking the natural logarithm of household net worth. This also allowed for the possibility that the relationship is nonlinear (Yuh & Hanna, 2010).

Household income level can also capture differences in financial incentives to save. As discussed by M.S. Sherraden et al. (2010), there are many income tax incentives to save. For example, contributions to a traditional IRA or 401(k) plan can be deducted from gross income. A household in the 15% tax bracket could save $0.15 for every dollar contributed to a tax-advantaged savings program, while a household in the 35% tax bracket would save $0.35 for every dollar saved. Thus households in higher income tax brackets have greater financial incentives to save. For the purposes of this study, percentiles of the federal poverty thresholds were used to approximate tax brackets. While income is highly correlated with a household tax brackets, the number of people in the household, among other factors, is also important to consider. The poverty thresholds are adjusted for the number of people in the household and will most likely do a better job approximating tax brackets than a simple continuous variable of household income. Four income 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%.

Having a reason to save could be thought of as a non-financial incentive to save. Consumers who are able to actually identify a reason to save are naturally creating an incentive to do so. Therefore, a dummy variable was created to categorize households as having at least one reason to save, coded 1, and households that did not identify a single reason to save, coded 0. The SCF also allows researchers to consider a possible disincentive to save. Several authors have mentioned the possibility of asset tests in welfare programs creating a disincentive for low-income households to save. Since the SCF asks whether the household received any type of welfare benefit, this study created a dummy variable as a proxy for this disincentive to save. Households who received welfare were coded 1 and households who did not receive welfare were coded 0.

Facilitation. The SCF asks whether the household has employer-sponsored retirement plans. This is an example of a contractual saving mechanism that facilitates saving behavior. A dummy variable was created to distinguish households with these plans, coded 1, from households without these types of plans, coded 0.

Expectations. This study considered two important sources of expectations: family/friends and professional advisors. Family and friends represent an important source of consumer socialization (Ward, 1974) and individuals tend to exhibit behavior that is consistent with their peers or family members (Thaler & Sunstein, 2009). The SCF asks whether the household would be able to borrow $3,000 from a family member or friend in case of an emergency. A dummy variable was used to categorize households who had this access, coded 1, and households who did not have this access, coded 0.

The SCF also asks the household several questions about sources of financial information. Specifically, respondents were asked who the household consults for questions regarding credit/borrowing and investment/saving decisions. Among other possible responses, there are several categories of professional advisors, including each of the following: broker, attorney, accountant, financial planner, and banker. Consulting a professional advisor may be an important source of norms and goals because the professional is there for the purpose of helping to establish and achieve the household's goals. Since saving is typically viewed as an important financial consideration, it is likely that any of these advisors would suggest the household save. A dummy variable was created to distinguish households who use a professional advisor, coded 1, from households who did not consult any professionals, coded 0.

Operational Hypotheses

In order to test the hypotheses identified in the theoretical framework, it was necessary to operationalize the institutional dimensions of saving behavior. Therefore, the following hypotheses were tested by the previously described analysis. Figure 3 illustrates these hypotheses.

H1A: Households who own a bank account will be more likely so save than households who do not own a bank account.
H1B: Households who have access to credit will be more likely to save than households who do not have access to credit.
H2A: Compared to White households, Black households will be less likely to save.
H2B: Compared to White households, Hispanic households will be less likely to save.
H2C: Compared to White households, Asian/Other households will be less likely to save.
H3A: Net worth will be positively related to saving.
H3B: Income will be positively related to saving.
H3C: Households reporting at least one reason to save will be more likely to save than households reporting no reasons to save.
H3D: Households receiving social welfare benefits will be less likely to save than households not receiving social welfare benefits.
H4A: Households with greater education levels will be more likely to save than households with lower education levels.
H4B: Age will be positively related to saving.
H4C: Households that seem to be more knowledgeable according to the SCF interviewer will be more likely to save than seemingly less knowledgeable households.
H5A: Households with an employer-sponsored retirement plan will be more likely to save than households without these plans.
H6A: Households reporting to have the ability to borrow $3,000 from a family member or friend in case of an emergency will be more likely to save than households who do not have this ability.
H6B: Households reporting the use a professional advisor will be more likely to save than households who do not use a professional advisor.

Results

Descriptive Results

The low-income sample in this study was compared to a high-income sample from the same SCF year which includes non-retired households over 300% of the poverty thresholds. This comparison of the sample proportions of each of the explanatory variables revealed very interesting differences between low-income and high-income households. Compared to the high-income sample, the low-income sample had higher proportions of minority households and households with a high school diploma or less. Almost 98% of high-income households had a bank account, but only 77% of low-income households had a bank account. Less than 1% of high income households did not have access to credit, while approximately 8% of low-income households lacked this access. Nearly 74% of high-income households had an employer-sponsored retirement plan, while only 40% of low-income households had these plans. For a comparison of each explanatory variable by income groupings, see Table 1.

The low-income sample was a diverse group: 62% White, 19% Black, 15% Hispanic, and 4% Asian/Other. The median net worth for these households was $16,678 and was largely composed of non-financial assets. Median financial assets were $2,242 while median non-financial assets were $21,520. There were interesting patterns by saving and non-saving households for the median values of net worth. Figure 4 indicates that narrow measure savers had highest levels of net worth, followed by broad measure savers, and lastly non-savers had the least. This pattern was consistent when looking at net worth, financial assets, and non-financial assets.

Means Tests Results

Results of the means testing for differences between saving and non-saving households are presented in Table 2 (Net Worth), Table 3 (Financial Assets) and Table 4 (Non-Financial Assets). There were significant differences in each poverty threshold between saving and non-saving households; saving households had more net worth and assets than non-saving households. These results were consistent when using either the broad or narrow measure of saving. Only 5 of the 24 comparisons were not significant at the .05 significance level.

Figure 5 shows that there was also a clear pattern when looking at the proportion of savers by poverty thresholds. Considering households up to 100% of the poverty thresholds, nearly 66% of households were classified as broad measure savers while only 34% were classified as narrow measure savers. There was a steady increase in the proportion of savers in each category as income increases. Nearly 82% of the households between 201% and 300% of the poverty threshold were classified as broad measure savers, while only 51% of these households were classified as narrow measure savers. Means test were carried out to test the differences between the proportion of savers in each poverty category, and the results in Table 5 show that the differences are statistically significant.

Multivariate Results

The results of the logistic regression analyses are presented according to the theoretical model, so the variables representing each institutional dimension are discussed. Each discussion will point out any differences between the two logistic regressions. Table 6 shows the results of the logistic regressions, including estimates of coefficients, standard error, odds ratios, and p-values.

Access. As expected, low-income households who reported owning a bank account were significantly more likely to save, using either measure of saving. Additionally, households who do not have access to credit were significantly less likely to be narrow measure savers. This effect was not significant for the broad measure.

Security. Significant differences between racial/ethnic identities were found. Contrary to the expected relationships, all minority groups were significantly more likely to save than White households under the broad measure of saving. Considering narrow measure savers, Asian/Other

households were significantly more likely to save. Hispanic households were more likely to save and Black household were less likely to save, but these findings were not statistically significant.

Incentives. Net worth was positively associated with saving for both saving measures. Households with greater net worth were significantly more likely to save. Compared to households with income up to 100% of the poverty threshold, households in between 201% and 300% of the poverty threshold were significantly more likely to be broad or narrow measure savers. Additionally, households between 151% and 200% of the poverty threshold were also significantly more likely to be narrow measure savers compared to the lowest income group. Under the broad measure, households receiving welfare were significantly less likely to save, but the effect was not significant under the narrow measure. For both the broad and narrow measure, households who could identify at least one reason to save were significantly more likely to save than households who did not report at least one reason to save.

Information. Compared to households with less than a high school diploma, households who completed some college or who finished a four year degree were significantly more likely to save, but only for the broad measure of saving. Since age squared was significant in both regressions, it is clear that the relationship between age and saving is not linear. Since the coefficients reveal opposite effects for age and age squared, it is best to estimate the probability of saving to see the marginal effects (Sung & Hanna, 1996). Figure 6 shows that this relationship was in fact a u-shaped pattern, with younger and older households more likely to save. Households with respondents nearest to the age of 47 were least likely to save. Lastly, households who seemed more knowledgeable by the interviewer were significantly more likely to save than less knowledgeable households when using the broad measure.

Facilitation. For both measures of saving, households who reported having an employer-sponsored plan were significantly more likely to save than households who lacked such a plan.

Expectations. Households reporting having resource access, defined as $3,000 or more, in case of an emergency from family or friends were significantly more likely to save under both saving measures than households without this access. Additionally, the use of a professional advisor was associated with significantly greater likelihoods of saving, but only for the narrow measure.

Survey Year. Lastly, for both measures of saving, households in more recent survey years were significantly less likely to save. Since there is little variation in the observed proportion of savers in each survey year, this effect is primarily a result of the model.

In summary, households who were more likely to save according to either definition had the following characteristics: owned a bank account, greater net worth, had at least one reason to save, had an employer-sponsored plan, had access to resources via family or friends, and responded to the SCF in 1995 compared to more recent years.

Discussion

Considering the first research question, the results of the means tests demonstrate that there are significant differences in asset levels between saving households and non-saving

households. Although these differences do exist, it would not be appropriate to say that saving necessarily causes these differences. These differences in asset levels are likely a result of many factors, some of which may not be accounted for here. However, these results at the very least suggest it would be worth greater exploration to see if savings differences are in fact explaining the difference.

The second research question explored the factors related to saving behavior. The results of each hypothesis are summarized in Table 7. Of the six research hypotheses, only H2 regarding the institutional dimension of security was not supported by the analysis. Minority households were expected to be less likely to save than White households; however, these households were significantly more likely to save under the broad measure. There are several possible explanations for this difference. It is likely that more is represented by racial/ethnic identity than simply the historical relationship between minority groups and financial institutions. There may be important cultural differences in what constitutes saving or beliefs about the importance of saving. Since few studies have applied this theory to saving behavior outside of IDA programs, this dimension of security might be better represented by another variable.

Aside from the hypothesis regarding security, every other research hypothesis was supported by this study. In the case of incentives and information, the hypotheses were partially supported. This demonstrates the usefulness of this theory in explaining low-income saving behavior. Compared to other studies regarding saving behavior, this analysis was simpler and did not require a large quantity of explanatory variables. Since the results of the multivariate analysis were generally consistent with expectations, this theory does provide a reasonable framework for understanding the saving behavior of low-income households.

It is also useful to discuss the results in terms of the operationalized hypotheses as shown in Table 7. If both logistic regressions confirmed the expected relationship at the .05 significance level between saving and the independent variable, then the hypothesis was supported. If only one of the two regression confirmed expectations, then the hypothesis was partially supported. Lastly, if the expectations were not consistent with either logisitic regression at the .05 significance level, the hypothesis was not supported. Therefore, of the 15 hypotheses, only four were not supported: H2A, H2B, H2C, and H4B. This included the race/ethnicity hypotheses and the age hypothesis.

Finally, the third research question explored the effects of using different saving measures. While a formal inference test was not carried out, it is helpful to call attention to the key determinants of saving behavior and the most important differences between the two different measures of saving. Racial differences, receiving welfare, having completed some college or a bachelor's degree, and being knowledgeable had significant effects using the broad measure but not the narrow measure. Having credit access, income between 151%-200% of the poverty threshold, and using a professional advisor had significant effects when using only the narrow measure. Measurement differences clearly have an effect on the results of the analysis. These results are consistent with findings from previous studies. Given the variation in variable definitions and measurements, it is difficult to make perfect comparisons to the literature.

However, two studies discussed in the literature review provide reasonable comparisons for the results of the current study. Hogarth and Anguelov (2003) used the broad measure and Yuh and Hanna (2010) used the narrow measure to explore saving behavior.

Hogarth and Anguelov (2003) used the broad saving measure and had the following variables, or sets of variables, that were measured in the same manner as the current study: bank account, racial/ethnic categories, income as a percentage of the poverty threshold, reason to save, and age. Results were similar across the two studies. While the direction of effect was consistent between the two studies, there were differences in significance. Considering the racial/ethnic variables, Hogarth and Anguelov (2003) found a significant effect for only Hispanics compared to Whites, while all of the minority groups had significant effects in the current study. This is almost certainly due to the larger sample in the current study. Similarly, age was significant in the current study but not in the Hogarth and Anguelov (2003) study. The current study also had a significant effect for households in the category of 201%-300% of the poverty threshold, while Hogarth and Anguelov (2003) found that none of the income categories had significant effects. Having a reason to save was also the largest effect in both studies. There were slight differences in the categories for education and credit variables. The current study had one extra category for education, graduate degree, while Hogarth and Anguelov (2003) used three variables to explore credit issues. Consistent with the present findings, Hogarth and Anguelov (2003) found that being rejected for credit is associated with a lower likelihood of saving.

Yuh and Hanna (2010) used the narrow saving measure and had the following variables in common with the current study: racial/ethnic group, net worth, income, education, age, resource access, and survey year. Of these, there were slight differences in the measurement of income and education. Yuh and Hanna (2010) created a continuous variable for income and found that likelihood of saving increased with income. More recent survey years were less likely to save in both studies. Households with resource access and greater levels of net worth were also more likely to save in both studies. Our study found that the likelihood of saving decreased with age until age 47, and Yuh and Hanna found that the likelihood of saving was highest for those under 30. Yuh and Hanna provided a theoretical interpretation of this puzzling result. There were two important differences between the Yuh and Hanna findings and our findings. Education was significantly positively associated with increased likelihood of saving in the Yuh and Hanna study but was not significant under the narrow measure of saving in the current study. Yuh and Hanna found that Black and Hispanic households were significantly less likely to save than White households, but the current study did not find any significant racial/ethnic effects for the narrow measure of saving.

The institutional theory does have some challenges in empirical implementation. One of the difficulties associated with this approach was choosing proxies for the institutional dimensions. For example, it is possible to argue that employer-sponsored plans could easily represent the dimension of restrictions, which was not used in this study, or possibly even the dimension of access. Many of the variables had aspects of several different dimensions, which create difficulties for researchers to separate and analyze the effect of a specific dimension.

Conclusions and Implications

This study has contributed to the literature on low-income saving behavior in several ways. To date, this is one of the few applications of institutional theory to saving behavior outside of IDA programs. As such, these findings provide an exploratory analysis in applying the theory. Since the future of IDA programs is somewhat uncertain, this study has provided useful insights into the saving behavior of low-income households.

This study has also highlighted the importance of careful measurement of variables. There were important differences between the two logistic regressions. It is interesting that households with more education were more likely to save under the broad measure only. While it is possible that these households may have more information regarding finances, another explanation is possible. This may be evidence of the effect that social norms have on survey responses. With any survey, responses influenced by social desirability are always a concern. In regards to saving behavior, it is possible that households who have attended higher education are more likely to perceive saving as a socially desirable behavior, and therefore are more likely to respond positively to the habitual questions underlying the broad measure of saving.

Policymakers should note several important findings from this study. Since households with greater access to financial institutions have greater likelihoods of saving, policymakers should consider possible incentives to offer financial institutions that are willing to open new services in low-income neighborhoods. Policies that encourage employers to offer savings plans to low-wage workers would also likely help low-income households. For example, employers could be offered additional deductions if their savings plans benefit low-wage earners.

Since information and expectations were also positively related to saving behavior, offering financial management educational programs in low-income neighborhoods could potentially increase their knowledge while also helping them to identify a reason to save. Professional advisors, especially financial planners, should also consider opportunities to help low-income families. Traditionally, low-income families have not been the focus of professional financial planners. This is a great disservice to this underserved population since these households stand to benefit greatly from financial planning services. In addition to providing coaching and modeling positive financial behavior, these advisors could also help improve the knowledge base of low-income households. Another potential outlet is partnering with programs dedicated to improving savings and asset levels among low-income households, such as the America Saves campaign. This campaign is sponsored by the Consumer Federation of America and seeks to encourage saving behavior across all income classes.

Since the ultimate goal of affecting saving behavior among low-income households is to help these households build assets, future research should consider using panel studies to see how these various measures of saving are correlated with increases in assets and net worth. While cross sectional studies such as the current study can provide useful insight, longitudinal studies would provide much stronger evidence of the effects of saving. Given the overall pattern found in this study, that the narrow measure of saving had the greatest levels of assets in every comparison, it would be interesting to see how the saving measure affects the asset differences.

Additionally, future research should continue to use empirical work to refine proxy variables for the institutional dimensions. Once these proxies have been identified and remain consistent through several studies, it would be interesting to use a block modeling approach to determine the relative importance of the various dimensions.

Overall, this study has provided empirical evidence that the institutional theory of saving behavior does have explanatory power as a theoretical framework when studying low-income households. It has also provided an application of this theory outside of the IDA program context, which can be helpful in determining alternative programs to help low-income households increase their well-being through asset building. Lastly, this analysis has shown that there are important differences between saving and non-saving households. While this should not be interpreted as a causal relationship, it is certainly suggestive and worth exploring in future research.

References

Bae, M., Hanna, S. D., & Lindamood, S. (1993). Patterns of overspending in U.S. households. *Financial Counseling and Planning, 4*(1), l-30.

Barr, M. S., & Blank, R. M. (2008). *Policy brief 13: Access to financial services, savings, and assets among the poor*. National Poverty Center Retrieved from http://www.npc.umich.edu/publications/policy_briefs/brief13/PolicyBrief13.pdf.

Beverly, S. G., & Sherraden, M. (1999). Institutional determinants of saving: Implications for low-income households and public policy. *Journal of Socio-economics, 28*(4), 457-473.

Beverly, S. G., Sherraden, M., Zhan, M., Shanks, T. R. W., Nam, Y., & Cramer, R. (2008). *Determinants of asset building*. Center for Social Development Washington University, St. Louis and New America Foundation.

Browning, M., & Lusardi, A. (1996). Household saving: Micro theories and micro facts. *Journal of Economic Literature, 34*(4), 1797-1855.

Chang, Y. R. (1994). Saving behavior of US households in the 1980s: Results from the 1983 and 1986 Survey of Consumer Finance. *Financial Counseling and Planning, 5*, 45-64.

Chen, C.-C. (2007). *Accounting for retirement stages.* Dissertation, The Ohio State University, Columbus, OH.

Field, A., & Miles, J. (2010). *Discovering statistics using SAS*. Thousand Oaks, CA: SAGE.

Fisher, P. J. (2010a). Black-White differences in saving behaviors. *Financial Services Review, 19*(1).

Fisher, P. J. (2010b). Gender differences in personal saving behaviors. *Financial Counseling and Planning, 21*(1), 15.

Fisher, P. J., & Hsu, C. (2012). Differences in household saving between non-Hispanic White and Hispanic households. *Hispanic Journal of Behavioral Sciences, 34*(1), 137-159.

Fisher, P. J., & Montalto, C. P. (2011). Loss aversion and saving behavior: Evidence from the 2007 US Survey of Consumer Finances. *Journal of Family and Economic Issues, 32*(1), 4-14.

Han, C.-K., Grinstein-Weiss, M., & Sherraden, M. (2009). Assets beyond savings in individual development accounts. *Social Service Review, 83*(2), 221-244.

Han, C.-K., & Sherraden, M. (2009). Do institutions really matter for saving among low-income households? A comparative approach. *Journal of Socio-economics, 38*(3), 475-483.

Hogarth, J. M., & Anguelov, C. E. (2003). Can the poor save? *Financial Counseling and Planning, 14*(1), 1-18.

Hogarth, J. M., & O'Donnell, K. H. (1999). Banking relationships of lower-income families and the governmental trend toward electronic payment. *Federal Reserve Bulletin, 85*(7).

Lee, J., & Hanna, S. D. (2012). Limitations of combining Hispanics and African-Americans for analysis of credit problems. *Journal of Consumer Affairs, 41*(2), 195-222.

Lindamood, S., Hanna, S. D., & Bi, L. (2007). Using the Survey of Consumer Finances: Some methodological considerations and issues. *Journal of Consumer Affairs, 41*(2), 195-222.

Loibl, C., Grinstein-Weiss, M., Min, Z., & Bird, B. R. (2010). More than a penny saved: Long-term changes in behavior among savings program participants. *Journal of Consumer Affairs, 44*(1), 98-126. doi: 10.1111/j.1745-6606.2010.01159.x

McKernan, S.-M., & Sherraden, M. (2008). *Asset building and low-income families*. Washington, D.C.: Urban Institute Press.

Montalto, C. P., & Sung, J. (1996). Multiple imputation in the 1992 Survey of Consumer Finances. *Financial Counseling and Planning, 7*(1), 133-146.

Montalto, C. P., & Yuh, Y. (1998). Estimating nonlinear models with multiply imputed data. *Financial Counseling and Planning, 9*(1), 97-103.
Rha, J. Y., Montalto, C. P., & Hanna, S. D. (2006). The effect of self-control mechanisms on household saving behavior. *Financial Counseling and Planning, 17*(2), 3-16.
Rubin, D. B. (1987). *Multiple imputation for nonresponse in surveys*. New York: Wiley.
Schreiner, M., & Sherraden, M. (2006). *Can the poor save?: Saving and asset building in individual development accounts*. New Brunswick, N.J.: Aldine Transaction.
Seidman, E., Hababou, M., & Kramer, J. (2005). A financial services survey of low-and moderate-income households. *Center for Financial Services Innovation. http://www/chicagofed.org/cedric/files/2005conf_paper_session2_seidman.pdf.*
Sherraden, M. (1991). *Assets and the poor: A new American welfare policy*. Armonk, NY: M.E. Sharpe Inc.
Sherraden, M., & Barr, M. S. (2005). Institutions and inclusion in saving policy. In N. P. Retsinas & E. S. Belsky (Eds.), *Building Assets, Building Credit: Creating Wealth in Low-Income Communities* (pp. 286-315): Brookings Institution Press.
Sherraden, M., Schreiner, M., & Beverly, S. G. (2003). Income, institutions, and saving performance in Individual Development Accounts. *Economic Development Quarterly, 17*(1), 95-112.
Sherraden, M. S., McBride, A. M., & Beverly, S. G. (2010). *Striving to save: Creating policies for financial security of low-income families*: University of Michigan Press.
Short, K. (2011). The research supplemental poverty measure: 2010 *Current Population Reports*: U.S. Census Bureau.
Sung, J., & Hanna, S. D. (1996). Factors related to risk tolerance. *Financial Counseling and Planning, 7*(1), 11-20.
Thaler, R. H., & Sunstein, C. R. (2009). *Nudge: Improving decisions about health, wealth, and happiness*: Penguin Books.
Ward, S. (1974). Consumer socialization. *Journal of Consumer Research, 1*, 1-14.
Yuh, Y., & Hanna, S. D. (2010). Which households think they save? *Journal of Consumer Affairs, 44*(1), 70-97.

Table 1. Descriptive Table

Parameter	Proportion	
	Low-Income Sample (≤300% of Poverty Threshold)	**High-Income Sample (>300% of Poverty Threshold)**
Access		
Bank Account	77.0%	97.8%
Credit Access	8.1%	0.9%
Security		
White	62.2%	82.7%
Black	19.4%	8.2%
Hispanic	15.0%	4.9%
Asian or Other	3.6%	4.3%
Incentives		
Net Worth		
< 25,000	55.9%	13.9%
25,000-49,999	11.7%	7.5%
50,000-99,999	11.7%	12.5%
>100,000	20.8%	66.1%
Income (mean)	27,040.25	123,392.17
Welfare Receipt	15.3%	0.6%
Stated a Reason to Save	94.0%	98.5%
Information		
Education		
Less than High School	14.9%	2.0%
High School Diploma	37.9%	19.3%
Some College	30.3%	27.0%
College Degree	12.9%	28.6%
Graduate Degree	4.1%	23.0%

Parameter	Proportion	
	Low-Income Sample (≤300% of Poverty Threshold)	**High-Income Sample (>300% of Poverty Threshold)**
Interviewer's Perception of Knowledge		
Poor	1.5%	0.2%
Fair	13.7%	4.2%
Good	48.2%	36.6%
Excellent	36.6%	59.0%
Age		
< 30	28.7%	11.4%
30-39	27.8%	22.6%
40-49	22.3%	29.9%
50-59	12.4%	23.4%
60-69	6.0%	9.5%
> 69	2.7%	3.3%
Facilitation		
Eligible for Employer-Sponsored Retirement Plan	40.0%	73.5%
Expectations		
Resource Access	31.4%	49.8%
Use of Professional Advisor	80.5%	84.6%
Survey Year		
1995	21.4%	18.0%
1998	20.6%	18.8%
2001	19.8%	20.8%
2004	19.5%	21.7%
2007	18.8%	20.8%
Sample Size	***5,619***	***12,435***

Source: Survey of Consumer Finances 1995-2007, weighted data excluding retired households.

Table 2. RII Means Tests for Net Worth Differences

	Broad Measure Saver			Narrow Measure Saver		
Poverty Threshold Percentiles	Non-Saver	Saver	p-value	Non-Saver	Saver	p-value
Up to 100%	36,965.81	82,573.25	.0377	50,758.85	98,869.17	.0283
101%-150%	32,222.26	66,611.76	<.0001	50,448.99	66,959.95	.0310
151%-200%	47,810.47	88,375.11	<.0001	58,020.80	101,672.86	<.0001
201%-300%	65,401.80	119,664.17	<.0001	91,135.68	127,596.03	<.0001

Source: Survey of Consumer Finances 1995-2007. Weighted data, excluding retired households and households with income above 300% of the poverty thresholds.

Table 3. RII Means Tests for Financial Assets Differences

	Broad Measure Saver			Narrow Measure Saver		
Poverty Threshold Percentiles	Non-Saver	Saver	p-value	Non-Saver	Saver	p-value
Up to 100%	7,552.71	23,998.69	.0614	11,837.49	31,222.51	.0281
101%-150%	5,340.76	20,149.69	.0105	14,253.40	18,547.71	.4263
151%-200%	8,932.11	24,180.87	.0063	16,156.44	25,014.87	.0694
201%-300%	15,602.56	38,854.19	<.0001	27,908.09	41,034.56	<.0001

Source: Survey of Consumer Finances 1995-2007. Weighted data, excluding retired households and households with income above 300% of the poverty thresholds.

Table 4. RII Means Tests for Non-Financial Assets Differences

	Broad Measure Saver			Narrow Measure Saver		
Poverty Threshold Percentiles	Non-Saver	Saver	p-value	Non-Saver	Saver	p-value
Up to 100%	48,328.66	75,770.91	.1153	56,950.98	84,944.58	.1073
101%-150%	48,451.26	74,233.17	<.0001	58,007.45	81,329.03	<.0001
151%-200%	76,276.61	96,538.90	.0125	73,698.67	112,624.85	<.0001
201%-300%	105,697.30	129,311.11	.0069	112,590.80	136,866.15	.0003

Source: Survey of Consumer Finances 1995-2007. Weighted data, excluding retired households and households with income above 300% of the poverty thresholds.

Table 5. RII Means Tests for Proportion of Savers by Poverty Thresholds

	Broad Measure		Narrow Measure	
Poverty Threshold Percentiles	% Saver	p-value	% Saver	p-value
All under 300%	74.54%	NA	43.43%	NA
Up to 100% (Base)	65.93%	-	33.83%	-
101%-150%	71.14%	<.0001	37.78%	<.0001
151%-200%	73.43%	<.0001	44.84%	<.0001
201%-300%	81.83%	<.0001	51.20%	<.0001

Source: Survey of Consumer Finances 1995-2007. Weighted data, excluding retired households and households with income above 300% of the poverty thresholds.

Table 6. Logistic Regression Comparison

	Broad Measure of Saver				Narrow Measure of Saver			
	Estimate	**Standard Error**	**Odds Ratio**	**p-value**	**Estimate**	**Standard Error**	**Odds Ratio**	**p-value**
Intercept	.0765	.3495	-	.8320	-.4884	.3009	-	.1178
Access								
Bank Account	**.1662**	**.0879**	**1.181**	**.0300**	**.1450**	**.0801**	**1.156**	**.0367**
Credit Access	-.1423	.1157	.867	.1109	**-.3266**	**.1108**	**.721**	**.0017**
Security								
White	Base	-	-		Base	-	-	
Black	**.4243**	**.0919**	**1.529**	**<.0001**	-.0879	.0788	.916	.1360
Hispanic	**.4544**	**.1058**	**1.575**	**<.0001**	.1349	.0893	1.144	.1408
Asian or Other	**.5338**	**.1927**	**1.705**	**.0083**	.2522	.1511	1.287	.0988
Incentives								
Log Net Worth	**.0647**	**.0057**	**1.067**	**<.0001**	**.0574**	**.0055**	**1.059**	**<.0001**
Income								
Up to 100%	Base	-	-	-	Base	-	-	-
101-150%	-.0163	.0995	.984	.8806	-.0676	.0911	.935	.4939
151-200%	.0862	.1062	1.090	.2412	**.2142**	**.0932**	**1.239**	**.0157**
201-300%	**.3882**	**.0990**	**1.474**	**<.0001**	**.2943**	**.0837**	**1.342**	**.0003**
Welfare Receipt	**-.2600**	**.0948**	**.771**	**.0036**	-.1453	.0922	.865	.0600
Reason to Save	**2.0015**	**.1319**	**7.401**	**<.0001**	**.9579**	**.1428**	**2.606**	**<.0001**

	Broad Measure of Saver				Narrow Measure of Saver			
	Estimate	**Standard Error**	**Odds Ratio**	**p-value**	**Estimate**	**Standard Error**	**Odds Ratio**	**p-value**
Information								
Education								
Less than High School	Base	-	-	-	Base	-	-	-
High School Diploma	.0920	.1036	1.096	.1882	.0455	.0961	1.047	.3185
Some College	**.2293**	**.1144**	**1.258**	**.0250**	.0605	.1029	1.062	.2788
College Degree	**.3133**	**.1421**	**1.368**	**.0157**	.1892	.1198	1.208	.0585
Graduate Degree	.2771	.1959	1.319	.0839	.1628	.1579	1.177	.1623
Interviewer's Perception of Knowledge	**.2579**	**.0916**	**1.294**	**.0032**	.1395	.0836	1.150	.0507
Age	**-.0944**	**.0151**	**.910**	**<.0001**	**-.0749**	**.0118**	**.928**	**<.0001**
Age Squared	**.0010**	**.0002**	**1.001**	**<.0001**	**.0008**	**.0001**	**1.001**	**<.0001**
Facilitation								
Eligible for Employer-Sponsored Retirement Plan	**.2597**	**.0761**	**1.296**	**.0007**	**.2201**	**.0618**	**1.246**	**.0002**
Expectations								
Resource Access	**.3787**	**.0893**	**1.460**	**<.0001**	**.2256**	**.0771**	**1.253**	**.0025**
Use of Professional Advisor	.5144	.3140	1.673	.0527	**.4960**	**.2110**	**1.642**	**.0102**
Year								

	Broad Measure of Saver				Narrow Measure of Saver			
	Estimate	**Standard Error**	**Odds Ratio**	**p-value**	**Estimate**	**Standard Error**	**Odds Ratio**	**p-value**
1995	Base	-	-	-	Base	-	-	
1998	-.5635	.3132	.569	.0746	**-.5133**	**.2101**	**.598**	**.0161**
2001	**-.9594**	**.3176**	**.383**	**.0029**	**-.5761**	**.2165**	**.562**	**.0093**
2004	**-1.0476**	**.3166**	**.351**	**.0011**	**-.6584**	**.2160**	**.518**	**.0025**
2007	**-.9902**	**.3173**	**.372**	**.0021**	**-.6077**	**.2164**	**.545**	**.0057**
Concordance (mean)	73.0%				66.3%			

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. All independent variables except for survey year had directional hypotheses, so if the sign of the estimated coefficient was consistent with the hypothesis, one-tail p-values are listed, otherwise two-tail p-values are reported. All bolded effects were significant at the .05 alpha level.

Table 7. Summary of Hypotheses and Conclusions

Dimension	Research Hypothesis	Operationalized Hypotheses	Conclusion
Access			
	H1: Households with greater levels of access to financial institutions will be more likely to be identified as a saver.		SUPPORTED
		H1A: Owning a bank account will be positively associated with saving.	Supported
		H1B: Households who have been rejected for credit or who were discouraged from applying for credit during the last 5 years will be less likely to save.	Partially Supported
Security			
	H2: Households who have less secure relationships with financial institutions will be less likely to save.		NOT SUPPORTED
		H2A: Compared to White households, Black households will be less likely to save.	Not Supported
		H2B: Compared to White households, Hispanic households will be less likely to save.	Not Supported
		H2C: Compared to White households, Asian/Other households will be less likely to save.	Not Supported
Incentives			
	H3: Households with greater incentives to save will be more likely to save.		PARTIALLY SUPPORTED
		H3A: Net worth will be positively related to saving.	Supported
		H3B: Income will be positively related to saving.	Partially Supported
		H3C: Households reporting at least one reason to save will be more likely to save than households reporting no reasons to save.	Supported
		H3D: Households receiving social welfare benefits will be less likely to save.	Partially Supported

Dimension	Research Hypothesis	Operationalized Hypotheses	Conclusion
Information			
	H4: Households with greater financial information will be more likely to save.		PARTIALLY SUPPORTED
		H4A: Households with greater education levels will be more likely to save than households with lower education levels.	Partially Supported
		H4B: Age will be positively related to saving.	Not Supported
		H4C: Households that seem to be more knowledgeable will be more likely to save.	Partially Supported
Facilitation			
	H5: Households with institutional facilitation of savings will be more likely to save.		SUPPORTED
		H5A: The presence of an employer-sponsored retirement plan will be associated with increased likelihoods of saving.	Supported
Expectations			
	H6: Households with greater social or family expectations to save will be more likely to save.		SUPPORTED
		H6A: Households reporting to have the ability to borrow $3,000 from a family member or friend in case of an emergency will be more likely to save.	Supported
		H6B: Households reporting the use a professional advisor will be more likely to save.	Partially Supported

Figure 1. Conceptual Framework

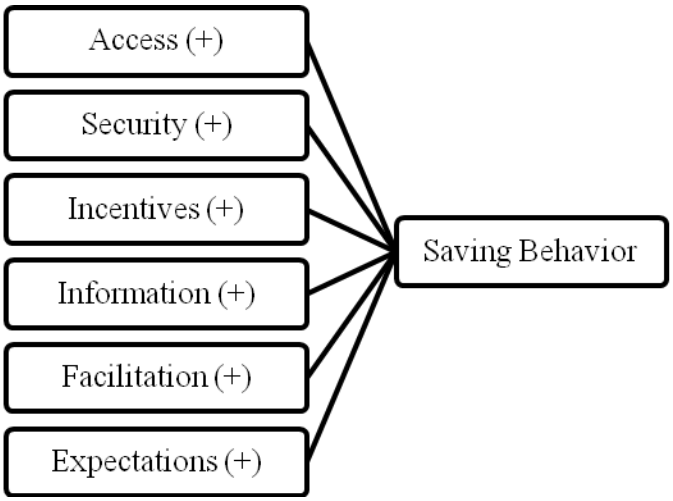


Figure 2. Measurement of Saving

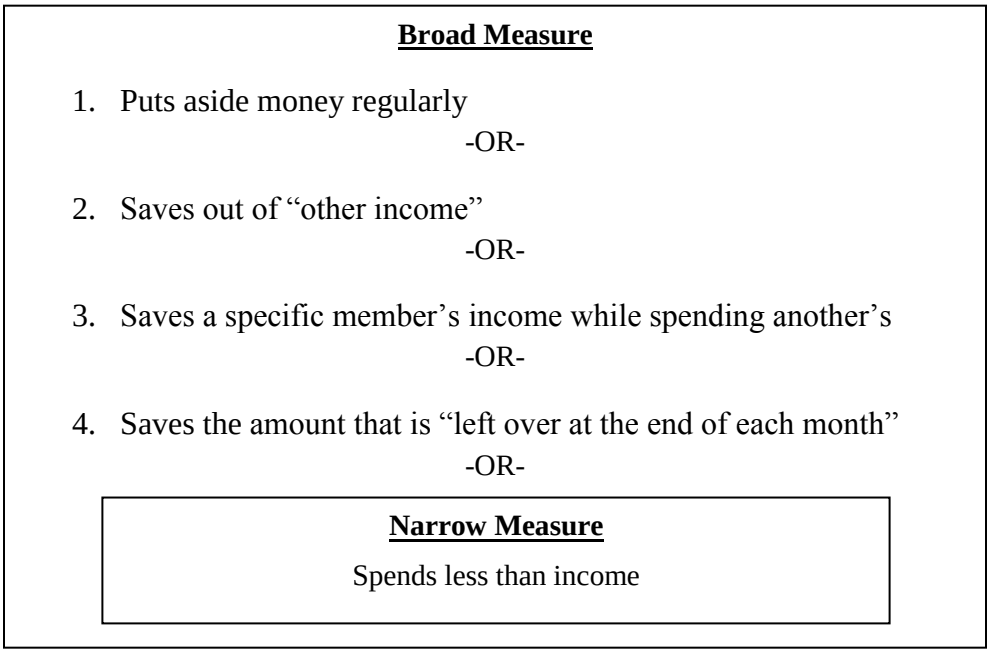


Figure 1. Empirical Model and Expected Effects on the Likelihood of Saving

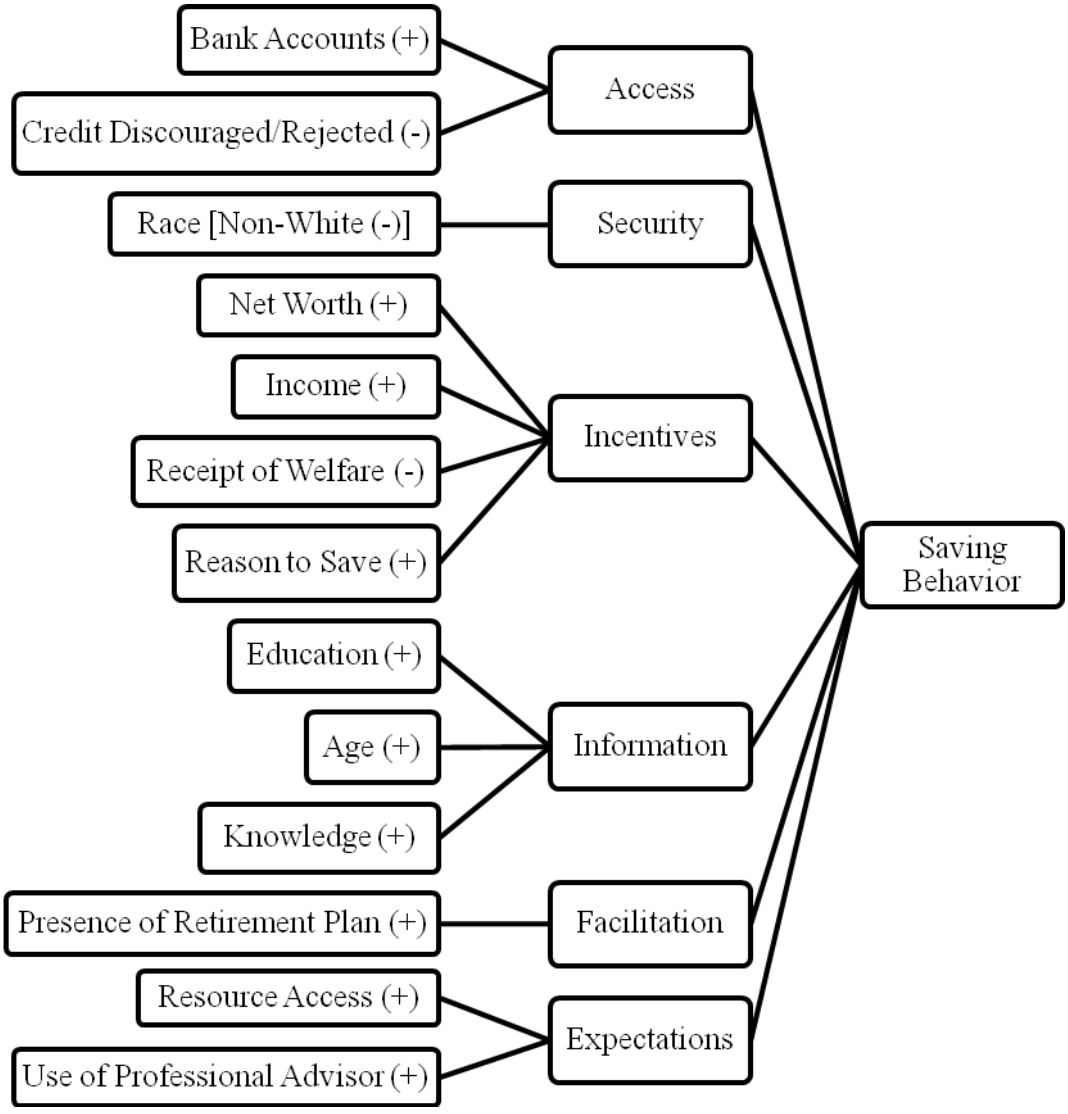
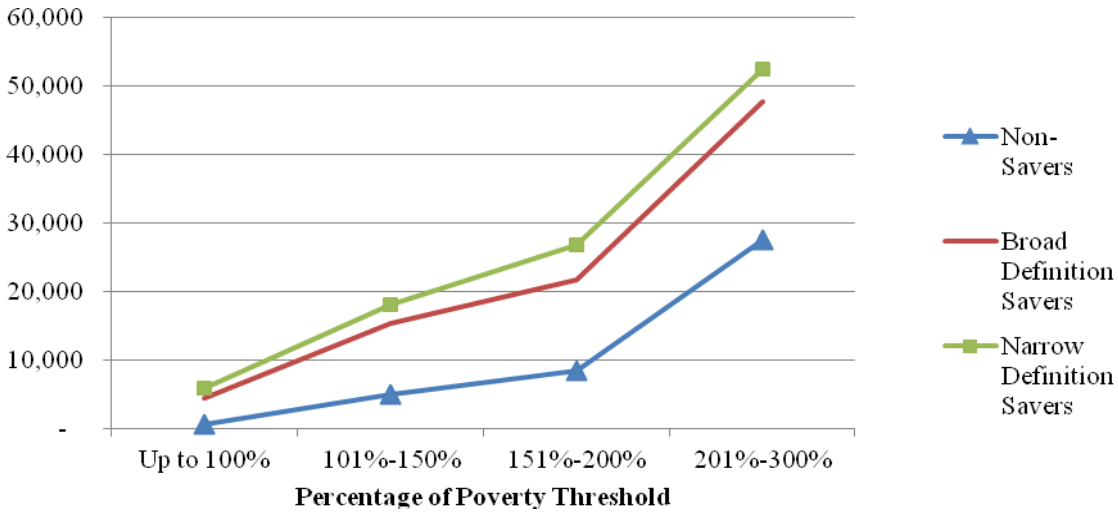
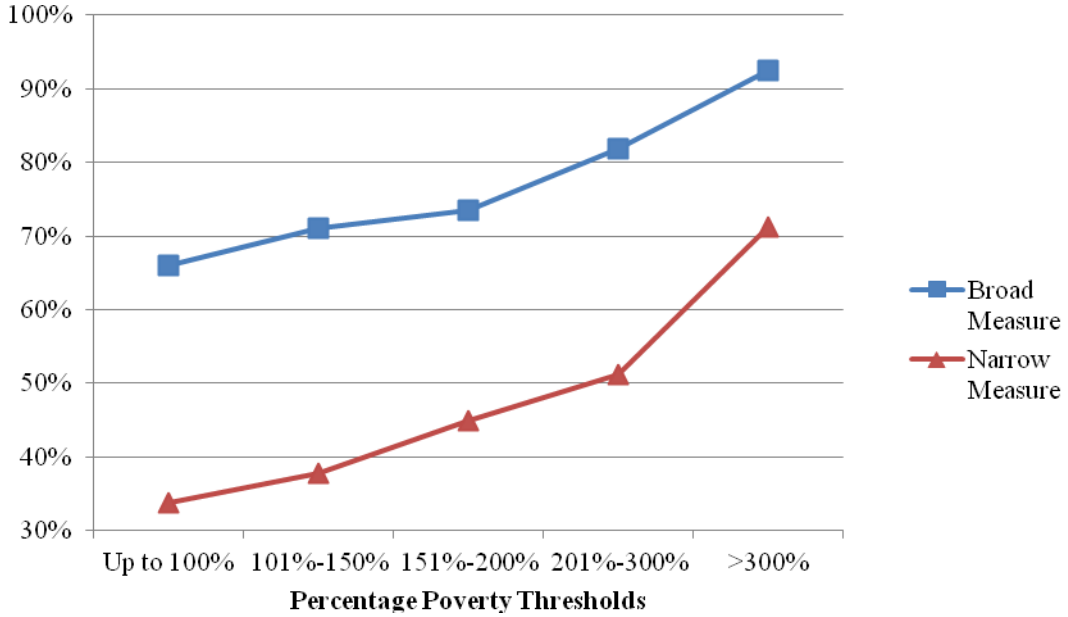


Figure 2. Median Net Worth



Source: Survey of Consumer Finances 1995-2007. Weighted data, excluding retired households and households with income above 300% of the poverty thresholds.

Figure 5. Proportion of Savers by Poverty Thresholds



Source: Survey of Consumer Finances 1995-2007, weighted data excluding retired households.

Figure 6. Age Effect