Patterns of Financial Behaviors:
Implications for Community Educators and Policymakers
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Using data from the Surveys of Consumers, we explore patterns of financial behaviors (cash flow management, saving, and investing) and the characteristics and learning preferences of households exhibiting these patterns. We find a wide range in diversity of financial behaviors among U.S. households. The only variables that consistently influenced having high scores for cash flow, saving, and investing behaviors were financial knowledge and financial learning experiences — those who knew more and those who learned from family, friends, and personal experiences had higher scores. The implication is that increases in knowledge and experience can lead to improvements in financial behaviors. We argue that one way to increase knowledge is to gain additional education, although we acknowledge that education is only one mechanism for influencing behavior. We conclude that a one-size-fits-all or a one- delivery-technique-fits-all approach to financial education will be less effective than more targeted, tailored approaches.

1. Introduction

Over the last several years, the issue of financial education seems to have risen on the agendas of educators, community groups, businesses, government agencies, organizations, and policymakers (see, for example, the discussion in Braunstein and Welch, 2002). Well-informed, financially educated consumers should make better decisions for their families, increasing their economic security and well-being. Secure families are better able to contribute to vital, thriving communities, further fostering community economic development. Thus, financial education is not only important to the individual household and family, but to their communities as well.

The purpose of this paper is to explore patterns of financial behaviors using a new, unique data set, in order to help community educators, community development professionals, and policymakers better target financial education programs. In the process, we identify:

- Patterns of financial behaviors
- Characteristics of households exhibiting these patterns (*e.g.,* socioeconomic and demographic characteristics, level of financial knowledge, sources of financial information)
- Learning preferences of households exhibiting these patterns
- Suggestions for community educators to target financial education efforts.

Justification
An effective and efficient marketplace requires knowledgeable consumers, able to make informed choices. In classical Adam Smith economics, informed consumers provide the checks and balances that keep unscrupulous sellers out of the market. For example, if all consumers had complete information about mortgages, predatory lenders would not be able to gain a foothold in the marketplace.

But why has financial education suddenly risen to the top of so many agendas?[a] First, the financial marketplace of the twenty-first century has become more complex. Take the "simple" decision of opening a checking account. Thirty years ago, consumers could walk into their home town banks; the tellers and the bank manager knew their names; the product choice was simple (consumers may have been able to choose the color of their checks, but that was about all they had to choose); and the bank was

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on the corner. Today, the bank may still be on the corner, but it's just as likely to be on the Internet; the product choice is much more diverse (most banks have several basic and interest checking accounts along with electronic transaction accounts); and with mergers and acquisitions, the staff may not know the customer at all. The same holds true for many other products and services — mortgages (which are no longer just 30-year fixed-rate mortgages, but include all permutations of terms and interest rates), home equity loans and lines of credit (products that didn't exist 20 years ago), and a broad range of investment choices — the list could go on.

Information and the ability to decipher and use that information in decision making becomes more necessary as financial products and services continue to expand and as new delivery channels for financial services develop. And, as Alan Greenspan has said, "As market forces continue to expand the range of providers of financial services, consumers will have much more choice and flexibility in how they manage their financial matters. They will also need to accumulate the appropriate knowledge on how to use new technologies and on how to make financial decisions in an informed manner" (Greenspan, 2001).

Second, over the past 15 to 20 years, responsibility for long-term well-being has been shifting away from institutions (employers, the government) to individuals. For example, in the pension field, defined contribution plans, which transfer more of the responsibility for the growth of retirement funds to the employee (Mitchell and Dykes, 2001), have grown from 30 percent of pension plans in 1980 to 92 percent of plans in 1997 (Conte, 1998). Discussions on privatizing portions of Social Security are further evidence of the shift in responsibility for financial security away from the institutions, to the individual (Report of the President's Commission, 2001).

Third, demographic shifts are taking place. Aging baby boomers who will be more responsible for their own retirement income security, youths who are coming to financial independence with limited role models and experiences, and immigrants who need to learn to manage in the U.S. marketplace — all are trends that need to be addressed via financial education efforts.

The number and types of financial education programs have grown tremendously since the mid-1990s. Several researchers and organizations have developed catalogues of programs (Vitt, Anderson, Kent, Lyter, Siegenthaler, and Ward, 2000; Jacob, Hudson, and Bush, 2000; Jump$tart, 2002; NEFE, 2001; NRC, 2000; OCC, 2001). And there is increased interest in knowing just how effective these

programs are (Boyce and Danes, 1998; Hirad and Zorn, 2001; Bernheim, Garrett, and Maki, 2001; O'Neill, 1997; Braucher, 2001; Schreiner, Clancy, and Sherraden, 2002)

Even though financial literacy is important — and the target of many resources — the topic has not been studied holistically (Hogarth, 2002). Some researchers have focused on levels of consumers' financial knowledge (CFA, 1990, 1991, 1993, 1998; Mandell, 2001; ACEC, 2001; ASEC, 1999). Others have looked at the types of products and services consumers use (O'Neill, Xiao, Bristow, Brennan, and Kerbel, 2000) or at specific financial management behaviors (Joo, Grable, and Bagwell, 1999). Few researchers have looked at how consumers have learned about financial management (Perry and Ards, 2001; Toussaint-Comeau and Rhine, 2000) or how consumers *prefer* to learn (Rhine and Toussaint-Comeau, 2002; Hogarth and Swanson, 1995, 1993). Even fewer researchers have studied the links between knowledge, experience, behaviors, and learning (Hogarth, Hilgert, and Schuchardt, 2002).

This paper is organized as follows: First we review some recent studies related to financial behaviors and financial education. Next, we introduce the data for this study and the measures of financial behaviors we will use. Third, we present results on three specific financial behaviors — cash flow management, saving, and investing — construct indexes of these behaviors, and explore socioeconomic, demographic, and other correlates. Fourth, we examine patterns of relationships among the three behavioral indexes. Finally, we discuss the implications of these patterns for designing and targeting financial education efforts.

2. Previous Studies

Financial Behaviors
Research suggests that relatively few U.S. households follow recommended financial management practices. Here, we briefly present evidence on budgeting and cash flow management, account ownership, use of credit, saving behavior, and asset accumulation.
Budgeting and Cash-Flow Management
Perhaps the most basic financial practice is to pay bills on time. Data from the Survey of Consumer Finances (SCF) suggests that a sizeable minority of families have trouble doing so. In 2001, an estimated 7 percent of all families in the U.S. reported having at least one payment in the past year that was at least 60 days late. The proportion of families with payments 60 days late was related to income; 13 percent of those in the bottom fifth of the income distribution reported at least one late payment, while only 1

percent of those in the top fifth did so (Aizcorbe, Kennickell, and Moore, 2003).

In addition to paying bills on time, financial educators typically encourage individuals to make written budgets and to regularly compare actual expenditures to planned expenditures (O'Neill, 2002). More research on budgeting and cash flow management is needed because existing research uses small samples. However, there is evidence that many families use informal mental budgets rather than written budgets; use short-term budgets (that is, budgets covering one month or less); and prefer techniques that require little mental energy (for example, automatic bill-paying or envelope accounting) (Davis and Carr, 1992; Muske and Winter, 1999, 2001). There is also evidence that families — of all income levels — have trouble resisting spending temptations (Beverly, Tescher, and Romich, 2002; Kennickell, Starr-McCluer, and Sunden, 1997; Moore, Beverly, Schreiner, Sherraden, Lombe, Cho, Johnson, and Vonderlack, 2001).

Account Ownership
Owning a low-cost checking or savings account is recommended for several reasons. It reduces the cost of routine financial transactions (Doyle, Lopez, and Saidenberg, 1998), helps individuals develop positive credit histories (Caskey, 1997), and may facilitate asset accumulation by providing a secure place that is somewhat out of reach to store money (Beverly, Moore, and Schreiner, in press). According to data from the SCF, about 9 percent of all U.S. families were "unbanked" in 2001. The percentage of unbanked families was much higher for low-income, younger, non-White, or Hispanic families (Aizcorbe *et al*, 2003). This percentage has remained fairly stable over the past few years, with a marked increase in account ownership between 1992 and 1995 (Hogarth, Anguelov, and Lee, 2001).

Use of Credit
Two common indicators that families are overburdened by debt are a ratio of debt payment to income greater than 40 percent, and being substantially late with credit card payments. In 2001, according to the SCF, 11 percent of all families in the United States had debt-to-income ratios greater than 40 percent. These percentages were higher for lower-income families (Aizcorbe *et al*, 2003). Another study found that 3 percent of college students' credit card accounts showed at least one payment at least 90 days late, compared with 2 percent of other non-student young adults and 1 percent of non-student older adults (Staten and Barron, 2002). In addition, non-business bankruptcies have risen from 1.2 million in 2000 to 1.4 million in 2001; filings in 2002

were on a pace to reach 1.5 million (ABI World, 2003).

Regular Saving
One of the most common financial management principles is to save regularly, generally by setting aside some amount of savings before paying for expenses (O'Neill, 2002). The SCF asks two questions about saving habits: whether households spend less than their income and whether they save regularly, and if so, how. In 1998, 42 percent of SCF respondents indicated that they spent less than their incomes (Hogarth and Anguelov, 2002). While 39 percent of respondents said they saved regularly, 23 percent said they didn't save, and 33 percent said they saved whatever was left at the end of the month (Montalto, 2002).

Asset Accumulation
Many households have very low levels of wealth. According to the 1998 SCF, 25 percent of households in the U.S. had less than $10,000 in net worth. This includes 8 percent of households with negative net worth (Montalto, 2002). Numerous studies show that more than half of U.S. households do not have adequate emergency funds (Chang, Hanna, and Fan, 1997; Wolff, 2000; Haverman and Wolff, 2000).[b] Still other studies suggest that Americans are saving too little for retirement (see Bernheim, 1998 for a review). In one survey, 35 percent of respondents could not even guess at how much they needed for retirement. Those who did try to provide a savings estimate, on average, guessed an amount that was 44 percent below their expected needs as calculated (Dolliver, 2001; EBRI, 2001). This last finding is particularly disturbing because it suggests that people may not be motivated to change their financial practices. There is also a substantial body of research and policy initiatives targeted at helping low-income families accumulate assets through Individual Development Accounts (IDAs) (Schreiner *et al*, 2002; Oliver and Shapiro, 1995) and home ownership programs (NRC, 2000).

The Role of Financial Knowledge and Education
The research cited above clearly raises concerns about the short-term and long-term economic well-being of families in the United States. The existence of a large financial education industry (for example, Americans for Consumer Education and Competition, American Savings Education Council, Cooperative Extension System, Consumer Literacy Consortium, Employee Benefit Research Institute, Jump$tart Coalition for Personal Financial Literacy, and the National Endowment for Financial Education) implies that the provision of information and education is perceived as one way to improve the financial practices of U.S. families.[c] Here, we

summarize evidence on financial knowledge, the relationship between knowledge and behavior, and the effects of financial education on behavior. Although we focus on financial education, we recognize that it is not the only way — or necessarily the best way — to improve financial outcomes. Public policies that promote livable incomes, a tax structure that provides incentives for good financial management, positive childhood experiences, changes in social norms and consumers' attitudes toward spending now versus later — all have the potential to help improve financial outcomes for families.

Financial Knowledge

Lack of knowledge about principles of financial management and financial matters could explain why some families do not follow recommended financial practices. In fact, research shows that youth and adults in the United States have disturbingly low levels of economic, financial, and consumer literacy (see, for example, Americans for Consumer Education and Competition, 2001; Consumer Federation of America, 1990, 1991, 1993, 1998; From Bad to Worse, 2002; Kotlikoff and Bernheim, 2001; McDowell, 2000). Results from the Jump$tart Coalition's biennial financial literacy tests of high school seniors found that students answered correctly 57.9 percent, 51.9 percent, and 50.2 percent in 1997, 2000, and 2002, respectively (From Bad to Worse, 2002). Adults taking the same test scored somewhat better, but missed some basic insurance and credit questions (McDowell, 2000). Other studies have found that low-income individuals, those with less education, and Black and Hispanic individuals tend to have below-average financial literacy scores (Kotlikoff and Bernheim, 2001).

Research also reveals a correlation between financial knowledge and behavior, although the direction of the causality is unclear. Those who score higher on literacy tests are more likely to follow recommended financial practices (Kotlikoff and Bernheim, 2001; Hogarth and Hilgert, 2002). Hogarth and Hilgert found that in comparison to those who had less financial knowledge, those with more financial knowledge were also more likely to engage in suggested financial behaviors including paying all bills on time, reconciling the checkbook every month, and having an emergency fund.[d] Of course, this correlation does not mean that an increase in knowledge tends to improve behavior. Instead, people may gain knowledge as they save and accumulate wealth, or there may be a third variable (for example, economic socialization) that affects both knowledge and behavior. Most existing studies do not analyze causality, but at least one study (Kotlikoff and Bernheim, 2001) suggests that

increases in knowledge do indeed increase retirement saving.

Financial Education

If increases in financial knowledge improve financial behavior, then financial education has the potential to improve financial behavior through increasing knowledge. Moreover, financial education programs typically do more than provide financial information. By helping people identify realistic financial goals, showing that small savings accumulate over time, and providing peer and staff support, financial education programs often aim to increase motivation to engage in prudent cash flow practices, save, and invest.

The number of studies evaluating the effectiveness of financial education is growing, and there is some evidence that financial education changes behavior. Teens participating in the NEFE's High School Financial Planning Program, which has reached 2.7 million high school students, report improved skills for tracking spending and increasing saving, as well as greater confidence about managing money (Boyce and Danes, 1998).

Bernheim, Garrett, and Maki (2001) studied the relationship between high school financial curriculum mandates and adult savings patterns and net worth. The study concluded that mandates increase exposure to financial education, and that financial education was associated with higher savings rates and higher net worth. They conclude, "education may be a powerful tool for stimulating personal saving" (Bernheim *et al*, 2001, p. 426).

O'Neill *et al* (2000) found significant changes for 15 financial behaviors and attitudes before and after joining a Money 2000 education program. Staten, Elliehausen, and Lundquist (2002) were able to trace credit counseling clients (who did not participate in a debt management plan) for three years and showed that compared with those who did not receive counseling, households who received counseling improved in a variety of financial management behaviors, including reduced debt, better credit card management, and lower delinquency rates; (Staten *et al*, 2002). Similarly, Hirad and Zorn (2001) examined the effectiveness of pre-purchase homeownership counseling and found that borrowers receiving counseling had a 19 percent lower rate of 90-day delinquency than those without counseling.

Other studies have focused on the effects of financial education seminars in the workplace. Kim, Kratzer, and Leech (2001) and Kim, (2001) found that employees who attended financial education workshops increased their participation in 401k plans

and changed at least one financial behavior. Similarly, Garman, Kim, Kratzer, Brunson, and Joo (1999, p. 82) found that 75 percent of the individuals who chose to participate in financial education programs not only "made better financial decisions since attending the workshops" but also were overall more "confident in making investment decisions."

In the evaluation of the American Dream Demonstration project (a program with over 2,000 IDA participants between July 1997 to June 30, 2000), financial education was found to be positively associated with the amount of average monthly net deposits (Schreiner *et al*, 2002). Specifically, results show "that financial education has positive effects on savings and that the courses need not be long [under 8 to 10 hours] to take advantage of the potential benefits" (Schreiner *et al*, 2002, p. 51).

It is important to restate that financial education programs may not be the only way to improve financial outcomes. In their Save More Tomorrow program (in which employees commit to save out of future pay raises rather than out of current income), Thaler and Benartzi (2001) show that institutional structures contribute to behavior change.

It is also important to note that existing studies typically evaluate programs offered to people who have *sought out* financial education. As Caskey (2001) notes, these volunteers might have improved their financial behavior even without financial education. Thus, more research on the effects of financial education, particularly randomized experiments, is needed.

Sources of Financial Information and Delivery Mechanisms
A few researchers have looked at how consumers have learned about financial management and what sources of information they use. Sources of financial information typically are classified as formal (for example, classes or seminars, or information from employers) or informal (for example, family, media stories, or word of mouth). A study of low-income consumers revealed a preference for learning from friends and peers who are successful money managers (Hogarth and Swanson, 1995). Perry and Ards (2001) add another category, difficult personal experiences, which they refer to as the "school of hard knocks."

Bernheim and Garrett (1996) showed an information source displacement. Households who obtained financial information from employers were less likely to obtain information from "unreliable" sources (family and friends) but were also less likely to obtain information from "reliable" sources (financial

planners), although the offset for unreliable sources was larger.

Youth initiatives generally work through teachers in the school systems, although scouting, 4-H, and other youth programs often include financial education. One strategy to reach youth focuses on teaching parents how to provide financial experiences for their children. This two-for-one approach educates both the parents and the youth in the process (ASEC, 2001; Bowen, 1996).

Adult audiences often connect with financial literacy programs through the workplace (Garman, 1998; Bernheim and Garrett, 1996). However, adults are just as likely to find financial literacy programs via community groups, social service agencies, faith-based organizations, or special interest or affinity groups such as the PTA or AARP. Compilations of financial education programs have been developed by Vitt, Anderson, Kent, Lyter, Siegenthaler, and Ward (2000); Jacob, Hudson, and Bush (2000); Jump$tart (2002); NEFE (2001); and NRC (2000).

O'Neill *et al* (2000) found significant associations between preferred information delivery strategies and gender, geographic area, marital status, age, and length of participation in a financial education program. In this study, the information source was the same (*i.e.*, a Cooperative Extension program); only the delivery technique was allowed to vary.

Toussaint-Commeau and Rhine (2000) discuss the pros and cons of a variety of delivery strategies, including information seminars, pamphlets and brochures, mass media (newspaper, radio, television), individualized learning (video or DVD), and Web-based delivery. They note that delivery strategy, audience, and topic need to be considered holistically when designing financial education initiatives. However, they also show that different subgroups within the population prefer different delivery methods (Rhine and Toussaint-Commeau, 2002). For example, they found that low-income and less educated consumers are more likely to prefer media sources (TV, radio) and courses but less likely to prefer the Internet and brochures, compared with consumers who were neither low-income nor less educated.

Summary
For the most part, previous surveys on financial knowledge have limited themselves to simple descriptive studies; our study provides analysis in a multivariate framework. A few studies have linked education and behaviors, but the implicit assumption behind most of these studies is that education increases knowledge, which in turn affects behaviors;

our study tests the knowledge–behavior linkage more directly. Finally, information sources are often studied as indicators of tastes and preferences; our study incorporates information sources as a determinant of financial management behaviors.

3. Methods

Data

In order to address the issues of interest, the Federal Reserve Board commissioned additional questions regarding a household's financial knowledge, experience, behaviors, learning experiences, and learning preferences in the monthly Surveys of Consumers. These surveys, which were initiated in the late 1940s by the Survey Research Center at the University of Michigan, measure changes in consumer attitudes and expectations with regard to consumer finance decisions. Each monthly telephone survey of 500 households includes a set of core questions covering consumer attitudes and expectations along with socioeconomic and demographic characteristics (see Curtin, 2001 for more information). The survey was conducted in November and December 2001; the data contain information from 1,004 respondents.

Federal Reserve staff worked with colleagues in the U.S. Department of Agriculture's Cooperative State Research, Education, and Extension Service to craft the supplemental questionnaire. Questions were based, in part, on experiences from other surveys (for example, the Jump$tart Coalition's biannual survey of high school seniors, Money 2000 surveys, previous CFA/American Express surveys, ASEC youth survey, and ACEC youth survey). The questions were divided into five parts: a 28-question knowledge quiz; an assessment of experiences with 13 financial products and services; an assessment of 18 financial behaviors; information on how respondents learned about financial management; and information on how respondents would prefer to learn about financial management. Because the Survey of Consumers is conducted by phone, the knowledge quiz used a true-false-uncertain format rather than the multiple-choice format used in many of the other surveys. Once questions were drafted, they were shared with a set of researchers who work in the area of financial education. These researchers helped review the questions and provided additional guidance. Further revisions were made in consultation with the staff at the Survey Research Center.

Measures

Financial Management and Product Ownership Measures

We asked consumers about 18 different financial management practices, ranging from very basic money management skills (track expenses, pay bills on time) to more sophisticated ones (investment diversification). We also asked consumers whether they had experience with any of 13 different financial products. These ranged from saving and checking accounts to credit cards, mortgages, refinancing, and investments. Since the decision to own a financial product can itself be considered a financial behavior, we combined these two measures to look at four different types of financial behaviors: cash flow management, saving, investment, credit and other (see table 1 for the list of variables which were included under each type of behavior).

As might be expected, a fairly large percentage of individuals reported what we consider good cash-flow behaviors (89 percent of households had a checking account, 88 percent paid all their bills on time, and 75 percent reconciled their checkbook every month). However, less than half of the sample reported using a spending plan or budget. Within saving behavior, we found that while 80 percent had a savings account and 63 percent had an emergency fund, only 39 percent were saving for long-term goals (such as for education, a car, a home, or a vacation). Within the investment behaviors, we found that large proportions of respondents did not report good behaviors: 43 percent had an IRA and 45 percent had a 401k. Less than half reported having retirement accounts (pensions, 401k, or IRA plans) or mutual funds, about one-fourth reported holding individual stocks, and less than one-fourth said they put money in other retirement accounts.[e]

Table 1.
Financial experiences and variables used to analyze cash flow, saving and investment behavior

	% of obs (n=1004)	Variable used to analyze…		
		Cash Flow behaviors	Saving behaviors	Investment behaviors
Cash Flow				
Have checking account	89	X		
Pay all bills on time	88	X		
Have financial record-keeping system or track expenses[1]	79	X		
Reconcile checkbook every month	75	X		
Use a spending plan or budget	46	X		
Saving				
Have savings account	80		X	
Have emergency fund	63		X	
Save or invest money out of each paycheck[2]	49		X	
Save for long-term goals such as education, car, home, or vacation	39		X	
Have certificates of deposit	30		X	
Investment/Retirement				
Have $ spread over diff't types of investments	74			X
Have any investment accounts	52			X
Have mutual fund	46			X
Have 401k plan or company pension plan[2]	45			
Have IRA/Keogh	43			X
Calculated net worth in past 2 yrs	40			X
Participate in employer's 401k retirement plan[2]	37			
Have public stock	24			X
Put money into other retirement plans such as an IRA or some other type of retirement account	22			X
Have bonds	6			X
Credit				
Have credit card	79			
Pay credit cards in full each month	61			
Review credit reports	58			
Compare offers before applying for a credit card	35			
Refinance mortgage or loan for home improv'ts	35			
Other financial experience				
Home owner	75			
Bought a house	72			
Do own taxes each year	40			
Often or always plan and set goals for fin future	36			
Read about money management	20			

[1] Have financial record-keeping system or track expenses were counted as one behavior
[2] Not able to control for employment status because this variable is not available in the data set

Within the credit behaviors, nearly four-fifths of respondents had a credit card, three-fifths paid off their credit cards in full each month, and one-third compared offers before applying for a credit card. The relatively low numbers for some of these behaviors may depend on individual characteristics. For example, when comparing offers for credit cards, convenience users may not need to compare the annual percentage rate because they pay off their balances in full each month, although they could compare other fees, terms, and features. Turning to other types of financial behaviors, we found that three-fourths of respondents were homeowners and one-third had refinanced or obtained a home improvement loan. The least-frequently reported behavior was reading about money management (20 percent).

Constructing Financial Behaviors Indexes
To explore patterns of financial behaviors, we focused on three of the five types of financial behaviors listed in table 1: cash flow management, saving, and investment. As stated previously, we simultaneously looked at ownership of various financial products as well as reported behaviors to create an index for each of the three types of behaviors. Table 1 shows the individual financial product and financial behavior variables that were used to construct the three different indexes. For both the cash flow management and saving behavior indexes, all of the individual financial product and financial behavior variables listed under that particular index were included. For the investment behavior index, we omitted questions about whether an individual has a 401k or company pension plan and whether an individual participates in their employer's 401k retirement plan, since the data did not provide additional information regarding whether individuals were offered these plans or their employment status.

To examine cash flow behavior, we looked at whether respondents use a spending plan or budget, pay all bills on time, have a checking account, reconcile the checkbook every month (controlling for checking account ownership), track expenses, and have a financial record keeping system. For saving behaviors, we included having a savings account, an emergency fund, certificates of deposit, saving or investing money out of each paycheck, and saving for long-term goals (education, car, home, or vacation). To measure investment behavior, we looked at whether the respondents had any investment accounts, including mutual funds, IRA/Keogh plan, public stock, or bonds; whether they diversify; whether they put money into other retirement plans such as an IRA or some other type of retirement

account; and whether they had calculated their net worth in the previous two years.[f]

We classified levels of cash flow management, saving, and investing behaviors as high, medium, or low. For each type of financial behavior, we first considered whether there was an essential element for that behavior. For example, in cash flow management, we determined that paying bills on time was an essential element (see Garman and Forgue, 2002 or other personal finance text). Respondents who did not pay their bills on time were automatically categorized in the low group.

Next, we controlled for conditional variables, specifically: 1) for cash flow management, households without checking accounts were not expected to report that they balanced their checkbooks; 2) for investment, respondents without IRAs were not expected to contribute to an IRA; and 3) for investment, retirees (proxied by being age 65 or more) were not expected to contribute to IRAs or other retirement plans.

We then summed the items for each behavior category and calculated percentages. If households had or did fewer than 25 percent of the items, they were classified as low; keep in mind that households who did not pay their bills on time were classified as low, regardless of the other items they had for cash flow management. If households had between 25 percent and 70 percent of the items, they were classified as medium. If households had or did over 70 percent of the items, they were classified as high. We rounded to integers to account for the discrete nature of the items (for example, 25 percent of five items is 1.25 items; we rounded this to 1).

According to this methodology, 12 percent of the sample scored low on the cash flow index, 22 percent scored medium, and 66 percent scored high. For saving behavior, the figures were 26 percent, 40 percent, and 33 percent, respectively. More than one-third (37 percent) of the sample scored low on investment, while 44 percent scored medium, and 19 percent scored high.

Analysis
We begin by exploring descriptive statistics for those scoring low, medium, or high on the three financial behavior indexes. Next, each of the three indexes is modeled using a multivariate framework. To control for socioeconomic and demographic characteristics within the multivariate analysis, we include age, marital status, gender, ethnicity, education, and income (measured as the log of household income). As a proxy for experience and to control for any

curvilinear effects of age, age-squared is also included.

Given the number of studies (O'Neill *et al*, 2000; Staten *et al,* 2002; Bernheim *et al*, 2001) that highlight the importance of financial education (and implicitly financial knowledge), financial knowledge as measured by the score received on the financial knowledge quiz is also included in the regression. The financial knowledge quiz consisted of a set of 28 true/false questions to measure an individual's knowledge of saving, credit, mortgages, and general financial management topics. How individuals learn about financial management may also affect financial behavior because certain learning experiences may be more effective in stimulating behavioral change (Perry and Ards, 2001). Therefore, five binary variables indicating the methods through which respondents learned "a lot" or a "fair amount" about financial topics were included.

Other researchers have argued that some financial behaviors, including saving, are subject to an individual's expected variation in income (Sherraden, Johnson, Clancy, Beverly, Schreiner, Zhan, and Curley, 2000). To control for financial stability, two binary variables capture the respondent's finances relative to a year ago and their outlook for their financial status for next year. An individual's expected financial stability can also influence his financial management practices. Thus, attitudes and future-mindedness as measured by respondents' perceived chances that their family income will increase by more than the rate of inflation within the next five years and their expectations that they or their spouse will lose their job within the next five years were also included. These two variables are measured continuously on a scale of zero to 100, where zero signifies "no chance" and 100 is "absolutely certain."

Personal motivations may shape financial behaviors. As a proxy for motivation to learn, we included a binary variable for whether the respondent reads about personal money management. Other studies have highlighted the importance of setting goals (Chen and DeVaney, 2001). To incorporate this incentive factor, a binary variable measuring whether the respondent "often or always plans and (or) sets goals for financial future" was included in the regressions.

Using the indexes as our dependent variables, we developed three ordered logit models to gain insights into the correlates of financial management behaviors in a multivariate framework:

Cash flow behavior = f(socioeconomic and demographic characteristics, financial knowledge, financial learning experiences, stability, and motivation)

Saving behavior = f(socioeconomic and demographic characteristics, financial knowledge, financial learning experiences, stability, and motivation)

Investment behavior = f(socioeconomic and demographic characteristics, financial knowledge, financial learning experiences, stability, and motivation)

In each of the three regressions, the "high" index category was used as the reference. The statistical analysis program Stata was used to estimate the ordered logit regression and provide marginal effects and predicted probabilities, which are more easily interpreted than the ordered logit parameter coefficients. In general, we expect that the more financially knowledgeable households, the more financially stable households, and the more highly motivated households will be more likely to score high.

After comparing and contrasting the correlates of each of the three financial behavior indexes, we combine the information from these three indexes to analyze the patterns of financial behaviors. By exploring the patterns of financial behaviors, we can identify areas in which consumers can improve their behaviors, and, consequently, provide guidance to community educators on how best to target financial education programs. We present bivariate results relating financial education needs to various socioeconomic and demographic characteristics, measures of financial stability and motivation, measures of financial knowledge and learning experiences, and preferences for methods of education delivery.

4. Correlates of Financial Behaviors

Index Levels and Descriptive Characteristics
Socioeconomic and Demographic Characteristics
A comparison within each financial behavior index shows that those with a high score are the most likely to be married, to be White, to have the highest average years of education, and to have the highest mean and median household income (table 2). A comparison among the three behavior indexes shows that the largest differences are found in the investment index. For example, only 15 percent of those with a low

Table 2.
Demographic characteristics by score on financial behavior index (in percentages except where noted)[1]

	All Obs.	Cash Flow			Saving			Investment		
		Low	Medium	High	Low	Medium	High	Low	Medium	High
Number of households	1,004	119	224	661	264	404	336	370	445	189
Percentage of households	100	12	22	66	26	40	33	37	44	19
Married	60	42	51	62	40	62	64	44	60	76
Single male	16	17	21	15	19	15	16	19	15	14
Single female	24	41	28	24	41	23	21	37	25	10
White	79	61	78	83	70	80	84	68	83	92
Black	9	20	10	7	15	8	7	16	8	1
Hispanic	6	11	7	5	8	7	3	11	4	1
Other	3	3	4	3	3	3	4	3	4	5
Not known	2	4	1	2	4	1	2	3	1	2
Mean num. of children	0.7	0.9	0.7	0.6	0.7	0.8	0.6	0.8	0.7	0.6
Mean num. of adults	1.9	1.9	1.8	1.9	1.7	1.9	1.9	1.8	1.9	1.9
Mean household size	2.5	2.7	2.6	2.5	2.4	2.7	2.5	2.6	2.5	2.5
Mean age	47.5	43.5	47.4	48.2	47.6	47.9	46.9	45.6	47.4	51.3
Mean years of education	13.7	12.9	13.4	13.9	12.4	13.8	14.6	12.2	14.3	15.1
<=High school	39	44	41	35	56	39	22	63	27	14
Some college	25	28	22	24	20	23	28	20	29	21
>= College	35	26	35	40	22	38	50	15	45	65
Not known	1	3	1	0	2	1	1	2	0	0
West	21	26	21	19	23	20	20	18	22	23
Midwest	25	21	25	26	23	27	25	27	24	27
Northeast	19	15	21	21	18	19	24	18	22	22
South	35	38	33	33	36	34	32	38	33	29
Mean household income	$56,079	$43,876	$60,142	$60,869	$36,150	$55,520	$79,439	$33,596	$62,475	$97,068
Median household income	$45,000	$30,000	$48,750	$50,000	$30,000	$45,000	$67,500	$27,000	$50,000	$87,500
Mean income per capita	$56,079	$43,876	$60,142	$60,869	$36,150	$55,520	$79,439	$33,596	$62,475	$97,068
Median income per capita	$45,000	$30,000	$48,750	$50,000	$30,000	$45,000	$67,500	$27,000	$50,000	$87,500
Homeowner	75	53	73	79	60	75	86	59	82	89
Have a credit card	79	48	74	86	58	82	92	58	88	98

[1] Except for income and household size, all characteristics refer to the head of the household

investment score had a college degree, compared with 65 percent of those with a high investment score. The largest age difference was found in the investment index; as might be expected, respondents with a low investment score were on average younger than those with a high investment score.[g] Homeownership rates consistently rose with scores, as did credit card ownership.

Knowledge, Learning, Stability, and Motivation Measures

Within each index, those with a high score also had higher scores on the knowledge quiz (table 3). The score differential was the greatest in the investment index (an 18-point spread between low and high). Respondents with a low score for cash flow were more likely not to report any particular source of financial information as most important. Respondents with a high investment score were twice as likely as those with a low score to say that the media (TV, radio, newspapers, magazines) were an important source of learning. Across all three behaviors, those with high scores were more likely to prefer learning via the media and the Internet.

Table 3.
Knowledge, learning experiences, and preferences by score on financial behavior index

	All Obs.	Cash Flow			Savings			Investment		
		Low	Medium	High	Low	Medium	High	Low	Medium	High
Mean financial knowledge score	67	55	66	69	56	63	72	59	70	77
Learned "a lot" or "a fair amount" about financial topics from:										
Personal experiences	68	46	63	73	38	63	77	52	73	86
Friends and family	42	33	40	44	29	37	48	36	46	44
TV, radio, mag., newspaper	36	26	36	38	27	30	41	29	39	42
Employer	21	14	21	22	15	19	23	17	24	19
High school or college course	19	22	13	20	15	18	20	15	19	25
Course outside school	17	13	14	18	9	15	20	11	18	25
Internet	11	8	10	13	4	8	15	6	13	19
Most important way learned about personal finances:										
Personal experiences	48	38	42	53	42	51	48	49	47	51
Friends and family	21	18	25	20	18	23	21	22	22	17
TV, radio, mag., newspaper	11	8	13	11	11	9	12	8	11	16
High school or college course	5	8	6	5	10	4	5	6	4	6
Employer	5	3	6	5	4	3	6	4	6	3
Course outside school	4	3	5	5	0	5	5	2	6	5
Internet	2	1	1	2	0	2	2	1	2	2
Missing	3	20	2	1	15	4	1	6	2	0
Effective ways to learn to manage your money										
TV, radio, mag., news.	71	65	69	73	61	70	74	65	74	78
Informational seminars	66	46	47	55	51	52	53	47	54	59
Informational brochures	66	62	63	68	57	67	68	65	67	69
Video presentation	64	64	66	63	57	67	64	62	65	66
Internet	56	48	53	58	49	50	61	47	58	64
Formal courses at a school	53	56	51	54	54	54	52	54	53	52

Among the measures of financial stability, respondents with lower scores reported higher chances of job loss within the next five years. For investments, those with a higher investment score appeared more optimistic, with higher proportions stating their finances were the same or better than a year ago and that there was a better than 50 percent chance their incomes would rise more than inflation over the next five years. With respect to our measures of motivation, respondents with higher scores for all three financial behaviors reported higher levels of planning, setting goals, and reading about personal money management (table 4).

Multivariate Results

With the exception of age, all variables were significantly associated with financial behavior in at least one of the three regressions. Interpreting the coefficients and odds ratios in ordered logit regressions can become a bit daunting, as all coefficients are relative to the reference category. To simplify the discussion, the regression is consigned to

an appendix and we focus instead on the predicted probabilities of being in each of the three categories (high, medium or low, table 5) and the marginal effects of the significant independent variables (table 6). Moreover, since our goal is to provide community educators and policymakers with a framework in which to design, target, and implement programs that lead to behavior changes, we limit our discussion to the items that *increase* the probability of having either a medium or a high index.

Table 4. Financial stability and motivation measures by score on financial behavior index (in percentages except where noted)

	All Obs	Cash Flow			Savings			Investment		
		Low	Medium	High	Low	Medium	High	Low	Medium	High
Financial stability										
Finances are the same or better than a year ago	69	63	71	69	54	75	74	63	71	75
Expect finances to be the same or better next yr	89	87	89	89	87	89	89	86	90	91
Chances that income will increase by more than inflation, next 5 yr.[1]	42	47	42	41	36	41	47	34	43	53
Chances of you or your spouse losing job, next 5 yr.[1]	20	27	21	18	21	20	18	22	20	15
Chances that income from Social Security and job pensions will be adequate to maintain living standards [1]	37	41	36	37	34	38	39	33	39	40
In comparison to 5 years ago, chances that you will have a comfortable retirement have gone up or stayed the same	72	74	71	72	66	76	73	68	73	78
Motivation										
Plan and set goals for your financial future	36	26	24	42	23	30	54	30	34	52
Read about personal money management	20	12	16	23	9	17	32	8	19	44

[1] On a scale from zero to 100, where zero equals "absolutely no chance" and 100 is "absolutely certain"

The model was most precise in predicting the actual distribution of the cash flow behavior index (table 5). In comparison, the models for the saving and investment indexes overpredicted the actual proportion of respondents with medium scores and underpredicted the proportion with low and high scores.

Only the scores for financial knowledge and financial learning experiences were consistently significant across all three models. Evaluated at the means of all the other variables, a higher knowledge score increased the predicted probability of having a high index score. In fact, this variable had one of the greatest marginal effects for scoring high. While the models predicted that an average individual (scoring 67 percent on the quiz) had a 69 percent, 29 percent, and 8 percent chance of having a high score within cash flow, saving, and investment, respectively, obtaining a financial knowledge score of 90 percent

increased the probabilities to 78 percent, 37 percent, and 16 percent, respectively (table 5). These results are consistent with other studies showing a correlation between financial knowledge and financial behavior.

Table 5. Predicted probabilities of scoring low, medium, or high on financial behavior indexes[1]

	Cash Flow			Savings			Investment		
	Low	Medium	High	Low	Medium	High	Low	Medium	High
Actual distribution[2]	0.12	0.22	0.66	0.26	0.40	0.33	0.37	0.44	0.19
Predicted distribution	0.09	0.23	0.69	0.19	0.52	0.29	0.27	0.65	0.08
Demographic characteristics									
Marital status and gender									
Married	0.06	0.18	0.76	0.17	0.51	0.31	--	--	--
Single male	0.14	0.30	0.56	0.24	0.53	0.23	--	--	--
Single female	0.12	0.28	0.60	--	--	--	--	--	--
Race/ethnicity									
White	0.08	0.22	0.70	--	--	--	0.25	0.66	0.09
Black	0.12	0.28	0.59	--	--	--	0.42	0.54	0.04
Hispanic	--	--	--	--	--	--	--	--	--
Other	--	--	--	--	--	--	0.14	0.69	0.16
Household size									
= 1	0.06	0.18	0.76	0.16	0.51	0.34	--	--	--
= 4	0.12	0.27	0.61	0.22	0.53	0.25	--	--	--
Education									
HS degree or less	--	--	--	0.22	0.53	0.25	0.39	0.56	0.05
Some college	--	--	--	0.19	0.52	0.29	0.26	0.66	0.09
College or more	--	--	--	--	--	--	0.21	0.68	0.11
Financial knowledge score									
= 70	0.08	0.22	0.70	0.18	0.52	0.30	0.25	0.66	0.09
= 80	0.07	0.19	0.74	0.16	0.51	0.33	0.19	0.69	0.12
= 90	0.05	0.16	0.78	0.14	0.49	0.37	0.14	0.69	0.16
Household income									
= $30,000	--	--	--	0.25	0.53	0.22	0.36	0.59	0.06
= $55,000	--	--	--	0.16	0.51	0.33	0.22	0.68	0.10
= $80,000	--	--	--	0.12	0.47	0.41	0.16	0.69	0.15
Non–home owner	--	--	--	0.24	0.53	0.23	--	--	--
Home owner	--	--	--	0.17	0.52	0.31	--	--	--

Table 5. Predicted probabilities of scoring low, medium, or high on financial behavior indexes, continued[1]

	Cash Flow			Savings			Investment		
	Low	Medium	High	Low	Medium	High	Low	Medium	High
Financial learning experiences									
Neither personal exp. nor friends and family	0.11	0.26	0.63	0.25	0.53	0.22	0.34	0.60	0.06
Personal exp. and/or friends and family	0.08	0.21	0.71	0.17	0.51	0.31	0.24	0.66	0.09
Stability									
Finances are worse than a year ago	--	--	--	0.26	0.53	0.21	--	--	--
Finances are the same or better than a year ago	--	--	--	0.16	0.51	0.33	--	--	--
Chance that income will increase by more than inflation, next 5 yr.									
30% chance	0.08	0.21	0.71	--	--	--	--	--	--
50% chance	0.09	0.23	0.68	--	--	--	--	--	--
70% chance	0.10	0.25	0.65	--	--	--	--	--	--
Chance that you or your spouse will lose job, next 5 yr.									
30% chance	0.09	0.23	0.69	--	--	--	--	--	--
50% chance	0.11	0.26	0.63	--	--	--	--	--	--
70% chance	0.13	0.29	0.59	--	--	--	--	--	--
Motivation									
Do not often or always read about $ management	--	--	--	--	--	--	0.29	0.63	0.07
Often or always read about $ management	--	--	--	--	--	--	0.18	0.69	0.13
Do not often or always plan and set goals for fin future	0.11	0.27	0.62	0.25	0.53	0.22	--	--	--
Often or always plan and set goals for fin future	0.05	0.16	0.78	0.11	0.46	0.43	--	--	--

[1] Only significant variables are reported   [2] Within each index, probabilities sum to 1.0
-- Not significant

To control for ways in which consumers learned about financial topics, five binary variables were included in the regression. Only one — learning "a lot" or " a fair amount" through personal experience or family and friends — was significant in each of the three models. Respondents who said they had learned through these methods increased their chances of having high scores for cash flow, saving, and investment indexes by 2, 3, and 1 basis points, respectively. Other learning experiences — learning through high school, college, informational seminars, media or the Internet — were not significant in any of the models.

Other variables were not consistently significant, but where significant, they generally operated as expected. For cash flow and saving, being married increased the predicted probability of having a high score by 7 and 2 basis points, respectively. For cash flow and investment, being White increased the predicted probabilities of scoring high by 1 basis point, and being in the "other race" category was associated with an 8 basis point increase in having a high score. It was somewhat disturbing to note that being Black *decreased* the chances of having a high score for both cash flow and investment. Living in a

smaller household increased the probability of scoring high on cash flow and saving.

Education was a significant correlate of saving and investment behavior, although the marginal effects were not as large as one might expect. Having at most a high school degree decreased the predicted probability of being a high saver and high investor by 3 basis points; having some college had only a small effect. It was interesting to note that the highest level of education, college or more, was only a significant determinant for the investment index.

Households with an income of $30,000 had a 22 percent chance of being high savers, whereas those with a $80,000 income had a 41 percent chance.

Although the marginal effects of income were not as large for investment, income was associated with an increase in both the probability of being medium and high investors. Homeownership was also a significant correlate of saving: Homeowners had a 31 percent chance of being high savers compared with a 23 percent chance for non–homeowners.

Proxies of financial stability were also significantly associated with the cash flow and saving indexes. Respondents who said their finances were the same as — or better than — a year ago were *more* likely to be high savers than those who said their finances were worse than a year ago. In fact, the marginal effect of being in worse financial standing was one of the greatest reductions, 8 basis points.

Table 6. Marginal effects of scoring low, medium, or high on financial behavior indexes[1]

	Cash Flow			Savings			Investment		
	Low	Medium	High	Low	Medium	High	Low	Medium	High
Demographic characteristics									
Marital status and gender									
Married	-0.02	-0.05	0.07	-0.02	-0.01	0.02	--	--	--
Single male	0.05	0.07	-0.13	0.06	0.01	-0.06	--	--	--
Single female	0.04	0.05	-0.09	--	--	--	--	--	--
Race/ethnicity									
White	0.00	-0.01	0.01	--	--	--	-0.02	0.01	0.01
Black	0.04	0.06	-0.09	--	--	--	0.15	-0.11	-0.04
Hispanic	--	--	--	--	--	--	--	--	--
Other	--	--	--	--	--	--	-0.12	0.04	0.08
Household size									
= 1	-0.02	-0.05	0.07	-0.03	-0.02	0.05	--	--	--
= 4	0.03	0.05	-0.08	0.03	0.01	-0.04	--	--	--
Education									
HS degree or less	--	--	--	0.03	0.01	-0.03	0.13	-0.09	-0.03
Some college	--	--	--	0.00	0.00	0.00	-0.01	0.01	0.00
College or more	--	--	--	--	--	--	-0.06	0.03	0.03
Financial knowledge score									
= 70	0.00	-0.01	0.01	-0.01	0.00	0.01	-0.02	0.01	0.01
= 80	-0.02	-0.04	0.06	-0.03	-0.01	0.04	-0.08	0.04	0.04
= 90	-0.03	-0.06	0.09	-0.05	-0.03	0.08	-0.12	0.04	0.08
Household income									
= $30,000	--	--	--	0.06	0.01	-0.07	0.09	-0.07	-0.03
= $55,000	--	--	--	-0.03	-0.01	0.04	-0.05	0.03	0.02
= $80,000	--	--	--	-0.07	-0.05	0.12	-0.11	0.04	0.07
Non–home owner	--	--	--	0.05	0.01	-0.06	--	--	--
Home owner	--	--	--	-0.01	-0.01	0.02	--	--	--

Table 6. Marginal effects of scoring low, medium, or high on financial behavior indexes, continued[1]

	Cash Flow			Savings			Investment		
	Low	Medium	High	Low	Medium	High	Low	Medium	High
Financial learning experiences									
Neither personal exp. nor friends and family	0.02	0.04	-0.06	0.06	0.01	-0.07	0.08	-0.05	-0.02
Personal exp. and/or friends and family	-0.01	-0.01	0.02	-0.02	-0.01	0.03	-0.02	0.01	0.01
Stability									
Finances are worse than a year ago	--	--	--	0.07	0.01	-0.08	--	--	--
Finances are the same or better than a year ago	--	--	--	-0.03	-0.01	0.04	--	--	--
Chance that income will increase by more than inflation, next 5 yr.									
30% chance	-0.01	-0.02	0.03	--	--	--	--	--	--
50% chance	0.00	0.01	-0.01	--	--	--	--	--	--
70% chance	0.01	0.02	-0.04	--	--	--	--	--	--
Chance that you or your spouse will lose job, next 5 yr.									
30% chance	0.00	0.00	0.00	--	--	--	--	--	--
50% chance	0.02	0.04	-0.06	--	--	--	--	--	--
70% chance	0.04	0.06	-0.10	--	--	--	--	--	--
Motivation									
Do not often or always read about $ management	--	--	--	--	--	--	0.03	-0.02	-0.01
Often or always read about $ management	--	--	--	--	--	--	-0.09	0.04	0.05
Do not often or always plan and set goals for fin future	0.02	0.04	-0.06	0.06	0.01	-0.07	--	--	--
Often or always plan and set goals for fin future	-0.03	-0.06	0.10	-0.08	-0.06	0.14	--	--	--

[1] Only significant variables are reported
-- Not significant

Contrary to expectations regarding stability, we found that the greater the perceived chance that income will increase by more than the rate of inflation within the next five years, the lower the probability of having a high cash flow score. However, we found that the greater the perceived chance that the respondent or spouse might lose a job, the lower the probability of scoring high on cash flow. The model predicted that those who said they had a three-in-10 chance of losing their job within the next five years had a 69 percent probability of scoring high on cash flow, while those saying they had a seven-in-10 chance of losing a job had a 59 percent probability of scoring high. This is somewhat troubling, because those at risk of losing a job probably need to apply all the management tools at their disposal to make it through a spell of unemployment.

Finally, we turn our attention to proxies for motivation. All else constant, individuals who often or always read about money management had a 13 percent chance of being a high investor while those who did not had only a 7 percent chance. Reading about money management was also associated with an increased probability of being a medium investor. The marginal effects of often or always planning and setting goals for ones financial future were associated with increases of 10 basis points in the probability of having a high cash flow score and 14 basis points in the probability of having a high saving score.

5. Results — Patterns of Financial Behaviors

After looking at the determinants of three financial behavior indexes, we turned our attention to the relationships among these financial behaviors — what additional insights can we gain by looking at the three indexes simultaneously? Since there are three types of behaviors and three levels within each behavior, there are 27 possible patterns. In order to distill these data and make this information as useful as possible for community educators and policymakers, we categorized the 27 patterns into seven groups based on the type of financial education (FE) that appears to be needed. This analysis and discussion assumes that financial education has the potential to improve financial knowledge and, in turn, financial behavior. By financial education, we mean more than providing information; education means a combination of information, skill-building, and motivation leading to behavioral changes. We also assume that an individual who scored low or medium on a particular index needs at least some financial education in that area. By identifying the characteristics of people who exhibit certain patterns of financial behavior, we can make some recommendations about creating and targeting financial education programs.

Given the assumption stated above, we began by creating an array of the patterns (table 7). One out of 10 respondents — our Superstars — had a high score for each of the three financial behaviors. These households may continue to need informational updates on new policies, products, and services that affect their financial well-being, but they appear to be "self-basting" and may not need substantial financial education.

At the other end of the spectrum were households that needed education in all three topics. These households fell into two groups. The Need All the Basics group, 11 percent of the sample, had a low cash flow score, and either low or medium saving and investment scores. The Need it All group, about 17 percent of the sample, were those who typically had a medium cash flow score, a medium or low saving score and the full range of scores on investment.

In between the Superstars and the Need All the Basics group were a variety of target audiences for particular financial education programs. A small group of individuals — our Back-to-the-Basics group (7 percent of the sample) — had a high investment score, but needed either cash flow *or* saving education. As might be expected, we found a sizeable group of individuals (17 percent of the sample, dubbed the Kick it up a Notch group) who

needed financial education in the area of investments. Although these individuals engaged extensively in

Table 7.
Patterns of financial behaviors by type of financial education (FE) needed

	Financial Behavior Score Levels			
Type of FE needed	Cash Flow	Saving	Investment	Num. Obs.
Superstars — None				
	High	High	High	104
Back to Basics — Cash Flow or Saving				
	Low	High	High	2
	Medium	High	High	22
	High	Low	High	4
	High	Medium	High	43
Kick it up a Notch — Investment				
	High	High	Low	29
	High	High	Medium	140
Cash and Capital — Cash Flow and Investment				
	Low	High	Low	2
	Low	High	Medium	4
	Medium	High	Low	3
	Medium	High	Medium	30
Take the Next Step — Saving and Investment				
	High	Low	Low	75
	High	Low	Medium	30
	High	Medium	Low	95
	High	Medium	Medium	141
Need it All — General (all 3 topics)				
	Low	Medium	High	1
	Medium	Low	Low	54
	Medium	Low	Medium	24
	Medium	Low	High	3
	Medium	Medium	Low	33
	Medium	Medium	Medium	45
	Medium	Medium	High	10
Need All the Basics — Basic (all 3 topics)				
	Low	Low	Low	63
	Low	Low	Medium	11
	Low	Medium	Low	16
	Low	Medium	Medium	20

cash flow and saving behaviors, they did not score high on investments. The Cash and Capital group (4 percent of the sample) required both cash flow and investment education; these individuals had a high saving score yet had low or medium cash flow and investment scores.

Not surprisingly, the largest proportion of individuals (34 percent of the sample, our Take the Next Step

group) are doing fairly well with cash flow but need both saving and investment education since they had low to medium saving and investment scores.

Socioeconomic and Demographic Characteristics
Segmenting these households into clusters by financial education needs was only the first step in helping educators target their programs. The next step was to identify the characteristics of each group. Moving from left to right (from Superstars to Need All the Basics) in table 8 shows that the greater the need for FE, the less likely the head of the household was married and the more likely that the head was a single female. In fact, those who Need All the Basics were almost four times more likely to be single females than those who needed little or no financial education. Similar results were also observed in terms of race/ethnicity; while only 2 percent of the Superstars were Black or Hispanic, 32 percent of those who Need All the Basics were from these ethnicities.

Individuals who needed more FE also tended to live in larger households, to be younger, to have less education, to live in the West or the South, and to have lower household income. Some of these differences were in fact quite large — for example, only 10 percent of the Superstars had only a high school education, compared with 45 percent of those who Need All the Basics. Similarly, whereas the average household income for those who Need All the Basics was $43,274, those at the opposite end of the spectrum earned $104,289. It is worthwhile to note that those with the lowest mean household income as well as per capita income were those who needed both saving and investment education.

Financial Stability and Motivation
One factor that may affect financial behaviors, and arguably the type of financial education needed, is an individual's level of financial stability (table 9). In comparison to the Superstars, those who needed more FE were less likely to state that their finances were the same or better than a year ago. Those needing more FE were also less optimistic that their incomes would increase by more than inflation in the next five years, and were more likely to believe that either they or their spouse would lose a job in next five years. Except for job stability, those who were the *most* pessimistic overall were not those who Need All the Basics or Need it All, but those who needed to Take the Next Step (saving and investing education). This group scored high on cash flow but had the lowest average income. Thus, we suspect that this group may include the working poor, who lack the economic resources to save and invest.

As part of the financial stability measures, we also included information regarding perceptions of economic stability in retirement (table 9). The variations among the groups were subtle. For example, the Back to Basics (needing cash flow or saving education) group was the most optimistic, while the Need it All group was the most pessimistic. It may be that most households have not done enough research to know how much money they will need for retirement or have not paid much attention to retirement because of other more pressing needs.

We also measured perceived financial stability in retirement by whether respondents believed their chances of having a comfortable retirement had gone up or stayed the same in comparison to five years ago. Interestingly, those who Need it All were as optimistic as the Superstars. Lower income households receive higher income replacement rates from Social Security. If these Need All the Basics households were aware of this, then they may have been accurately assessing their future living standards from Social Security and job pensions. Those who were the most pessimistic were in the Need it All group, whereas those who were the most optimistic were the Cash and Capital group (needing either cash flow or investment education).

We found a clear inverse relationship between motivation and amount of financial education needed. Only 16 to 24 percent of those who Need it All and Need All the Basics planned and set goals for their financial future, compared with 62 percent of the Superstars. The Superstars were also 4 times more likely than those who Need It All to read about money management. It is interesting to note that while the Back to the Basics group (need cash flow or saving) reported greater financial stability than the Superstars, they were less motivated. Thus, motivation may partly explain the behavior differences between these groups.

Table 8. Socioeconomic and demographic characteristics by type of financial education needed (in percentages except where noted)[1]

Characteristic	Superstars *None*	Back to Basics *Cash Flow or Saving*	Kick it up a Notch *Investment*	Cash and Capital *Cash Flow and*	Take the Next Step *Saving and Investment*	Need it All *General (all 3 topics)*	Need All the Basics *Basic (all 3 topics)*
Number of households	104	71	169	39	341	170	110
Proportion of households	10	7	17	4	34	17	11
Married	74	79	59	51	56	47	43
Single male	15	13	14	21	15	22	16
Single female	11	8	27	28	29	31	41
White	89	97	82	74	79	76	60
Black	1	-	9	13	9	12	20
Hispanic	1	1	4	3	7	8	12
Other	7	-	2	8	4	3	4
Not known	2	1	2	3	2	1	5
Mean num. of children	0.6	0.5	0.6	0.6	0.7	0.8	0.9
Mean num. of adults	1.9	1.9	1.9	2.1	1.8	1.8	1.8
Mean household size	2.5	2.4	2.5	2.7	2.5	2.6	2.7
Mean age	48	56	47	39	48	48	44
Mean years of education	15	15	14	14	13	13	13
<=High school	10	17	31	21	47	49	45
Some college	24	15	30	33	22	21	27
College or more	66	68	38	44	30	29	25
Not known	-	-	1	3	1	1	3
West	21	21	20	15	18	23	26
Midwest	26	27	24	33	27	25	20
Northeast	27	18	22	23	19	20	15
South	26	34	34	28	36	32	38
Mean household income	$104,289	$87,864	$65,464	$72,987	$42,228	$52,517	$43,274
Median household income	$93,500	$72,500	$60,000	$57,500	$35,000	$40,500	$30,000
Mean income per capita	$49,093	$41,362	$31,829	$32,846	$19,660	$24,050	$18,245
Median income per capita	$40,000	$30,000	$25,000	$27,333	$16,000	$17,679	$11,917
Homeowner	90	89	83	82	73	66	54
Have a credit card	99	99	89	79	79	68	47

[1] Except for income and household size, all characteristics refer to the head of the household

Table 9. Financial stability and motivation by type of financial education needed (in percentages except where noted)

	Superstars	Back to Basics	Kick it up a Notch	Cash and Capital	Take the Next Step	Need it All	Need All the Basics
	None	*Cash Flow or Saving*	*Investment*	*Cash Flow and Investment*	*Saving and Investment*	*General (all 3 topics)*	*Basic (all 3 topics)*
Financial stability							
Finances are the same or better than a year ago	73	76	70	90	67	66	61
Expect finances to be the same or better next year	89	93	88	90	88	89	87
Chances that income will increase by more than inflation, next 5 yr.[1]	53	53	41	51	36	38	45
Chances of you or your spouse losing job, next 5 yr.[1]	16	12	20	18	19	23	27
Chances that income from Social Security and job pensions will be adequate to maintain living standards[1]	37	47	37	42	37	32	39
In comparison to 5 years ago, chances that you will have a comfortable retirement have gone up or stayed the same:	76	77	69	79	72	68	74
Motivation							
Plan and set goals for your financial future	62	45	51	44	32	16	24
Read about personal money management	46	44	24	31	11	11	11

[1] On a scale from zero to 100 where zero equals "absolutely no chance" and 100 is "absolutely certain"

Financial Knowledge and Learning Experiences

As one would expect, those who had a greater need for FE scored lower on the financial knowledge quiz than those who had little, if any, FE needs (table 10). On average, those who Need All the Basics answered slightly more than half of the quiz questions correctly (55 percent), whereas the Superstars scored 77 percent. There were also differences in financial learning experiences. Those with the most pressing FE needs, both basic and general, were less likely than those in other categories to say that they had learned "a lot" or a "fair amount" about financial topics from each of the individual sources; the only exception was the media (TV, radio, magazines, or newspapers). Conversely, the Superstars were more likely than the other categories to state that they had learned "a lot" or a "fair amount" about financial topics from each of the individual sources, the only exception being taking a course outside of school. The Superstars were three times more likely than those who Need It All to see the Internet as an important source of financial information.

The most frequently cited source of information for all groups was personal financial experiences; next came friends and family. Moreover, 22 percent of those who Need All the Basics did not name any source. The Superstars were more likely than other groups to say they learned a lot from employers. Given the high income level of these households, we could assume that they had more access to employer-based financial education, while those in lower-wage jobs do not.

Table 10. Financial knowledge score, learning experiences, and learning preferences by type of financial education needed (in percentages)

Characteristic	Superstars / *None*	Back to Basics / *Cash Flow or Saving*	Kick it up a Notch / *Investment*	Cash and Capital / *Cash Flow and Investment*	Take the Next Step / *Saving and Investment*	Need it All / *General (all 3 topics)*	Need All the Basics / *Basic (all 3 topics)*
Mean financial Knowledge score	77	77	71	69	65	64	55
Learned "a lot" or a "fair amount" about financial topics from:							
Personal experiences	88	82	79	69	65	59	45
Friends and	47	41	47	46	42	42	30
High school or College course	46	39	40	41	33	36	25
TV, radio, mag., newspaper	30	21	22	10	16	13	23
Employer	30	23	19	26	14	12	12
Internet	24	13	15	15	8	8	8
Course outside school	17	23	24	28	22	19	13
Most important way learned about personal finances:							
Personal experiences	48	55	49	33	55	42	38
TV, radio, mag., newspaper	18	14	10	10	9	12	9
Friends and family	15	18	21	28	21	26	16
Course outside school	8	1	4	13	4	4	2
High school or college course	6	6	4	5	5	6	8
Employer	3	4	7	10	4	5	4
Internet	2	1	3	-	2	2	1
Missing	-	-	2	-	0	3	22
Effective ways to learn about managing money:							
TV, radio, mag., newspaper	79	77	72	77	71	67	64
Informational brochures	70	66	69	62	68	61	63
Informational seminars	66	49	54	38	54	49	44
Internet	64	65	61	62	53	49	48
Video presentation	61	75	63	64	63	64	67
Formal courses at a school	49	61	53	53	54	52	52

Learning Preferences

The survey asked respondents what they perceived to be effective ways to learn about managing money. Overall, respondents preferred to learn through media sources (TV, radio, magazines, and newspapers), informational videos, and brochures (table 10). Formal methods, such as learning through courses at a school or informational seminars, were less popular, particularly among those needing basic FE.

Moreover, those who Need it All and Need All the Basics were also less interested in using the Internet; 64 percent of the Superstars considered the Internet an effective way to learn about money management, but less than half of those who Need it All and Need All the Basics shared this view.

6. So What? Discussion and Conclusions

As in other studies, our data show a wide range of financial behaviors among U.S. households. And, as with other studies, we found that many households scored low on our quiz of financial knowledge. Quiz scores were correlated with cash flow management, saving, and investing behaviors — those with especially low scores also tended to have low scores on our three behavior measures and to fall into the "Need All the Basics" group in terms of financial education.

Our results also confirm other studies in that we found that many households did not follow recommended financial practices. Whereas two-thirds had high scores on our measure of cash flow management, only one-third scored high for saving, and less than one-fifth scored high for investment. In multivariate analyses, the only variables that were consistently associated with cash flow, saving, and investing behaviors were financial knowledge and financial learning experiences — those who knew more had higher scores, as did those who learned from family, friends, and personal experiences. The implication is that increases in knowledge and experience can lead to improvements in financial behaviors, although we are aware that the causality could flow in the other direction. We argue that one way to increase knowledge is to gain additional education. And one way to gain experience is to learn from the experiences of others, as can happen in classes and seminars.

We want to stress the difference between simply providing information and providing education: Education implies changes in behavior; it may require a combination of information, skill-building, and motivation to make the necessary changes. The distinction between information and education is an especially important point for policymakers and program leaders making decisions about allocation of resources. Financial education awareness campaigns and learning tools (for example, Web sites or brochures), all important in their own right, need to be coupled with audience-targeted educational strategies.

And, as in other studies, we conclude that a one-size-fits-all approach to financial education will be less effective than more targeted, tailored approaches.

The information gleaned from this study can help financial educators target their financial education programs and materials. Not only are there various topics for financial education, but there are also various levels of educational needs within each topic. To be effective, financial educators need to choose appropriate topics and appropriate depth of coverage for a given audience. For example, some consumers Need all the Basics, from budgeting and cash flow management to saving and investing for their futures. Others need encouragement to Take the Next Step; they have mastered the basics of money management, but need to get started saving and investing. Still others need the motivation to Kick it up a Notch; they are managing money and saving, but need to begin making longer-term investments.

A corollary to the statement that no one size fits all is that no one curriculum fits all. The more focused the target audience becomes, the more targeted the financial education curriculum must become. Certainly those who Need it All — at either the basic or the more general level — can benefit from a comprehensive financial education curriculum. But those whose needs are more specific are likely to benefit from more specialized curriculum resources. Educators need to pay attention to matching the learner with the resources.

In the same vein, using one delivery technique for all in providing financial education will be less effective than tailoring delivery techniques for specific audiences, topics, and levels. For example, the Superstars indicated higher preferences for learning via the media and brochures, or what could be considered independent study techniques. Preference for these techniques implies that households want access to education at times and places that are convenient for their lifestyles. Print and media materials on new products and services may be all these households need.

On the other hand, those who Need All the Basics expressed higher preferences for videos. This makes some sense because showing people how to apply the tools (how to balance a checkbook, how to set up different record keeping systems, or where to look for information on credit card offers) can be useful for visual learners. This may also be a practical mechanism for time-constrained individuals who can view the videos in their home. Others may benefit from group learning situations, although courses were not rated highly by respondents.

Media sources — TV, radio, magazines and newspapers — were deemed effective ways to learn about managing money. Public service announcements could serve to stimulate thinking and

provide motivation, in addition to helping people connect with financial education resources. Community educators may be able to work with local newspapers to prepare financial education columns to supplement those available at the national level.

Limitations

We recognize the limitations that some of our assumptions place on the results of our study. Some of our measures are only proxies (for example, reading about money management and planning and goal setting are our proxies for motivation). Other measures (such as employment information) are missing entirely. In setting our low, medium, and high score cut-offs, we made a judgement that less than 25 percent is low and more than 70 percent is high; others might choose different levels. In creating our seven patterns of financial behaviors, we also made judgements about which groups clustered together. We could have used formal cluster analysis, often employed by market researchers, to form these groups instead. The combined effects of these and other assumptions made during the course of the analysis may have caused us to find differences that were significant when in fact there are no differences and to find no differences when in fact the differences are significant. Nonetheless, our results are consistent with other findings.

Future Directions

In our learning preferences measures, we did not ask about employer-provided or workplace financial education, and this may be an important delivery technique for time-constrained families. We also did not ask about one-on-one financial education approaches such as peer counseling or other financial counseling. Although previous studies (Hirad and Zorn, 2001; Staten, Elliehausen and Lundquist, 2002) report the success of counseling, this delivery techniques is very resource intensive. One approach to reducing these costs is to create environments for peer-to-peer outreach, specifically calling on those within the target audience who are successful financial managers. It also would be helpful to know when one-on-one education is necessary and when other, less expensive, educational techniques would prove just as effective.

One of the biggest challenges for educators may be motivating households to improve financial behaviors. Our measures of motivation, admittedly imperfect, show a large difference between the Superstars and all other groups (recall that while six out of 10 Superstars planned for the future, only two out of 10 among the Need it All and Need All the Basics did so). Our study did not focus on motivation, and this may be one of the key elements in improving financial behaviors. Thus, one

suggestion to others in the field is to further develop our ability to measure and influence households' motivations for improving their financial behaviors.

Our study suggests several other research needs that could be addressed. We need program evaluation research to demonstrate that financial education changes behaviors. Do the benefits equal or exceed the costs? What is the payback for financial education programs in terms of dollars saved and debt reduced by individual consumers? Further, do these positive changes in behavior stay with the individual over time? We join Caskey (2001) in calling for opportunities for randomized experimental design studies to demonstrate these linkages and for longitudinal studies to demonstrate the persistence of behavior changes.

We also need to understand other elements that influence financial management behaviors. What more can we learn about the relationship between knowing about money and making good decisions? For those who are equally knowledgeable or in otherwise similar circumstances, what motivates some to save and invest, while others choose not to, or even fall into debt? What roles do public policies that provide for livable incomes, tax structure incentives for good financial management, positive childhood experiences, social norms, and consumers' attitudes toward spending now versus later play in households' financial management behaviors?

Finally, it is worth reiterating that financial security for families is an appropriate vision for policymakers, community educators, practitioners, and researchers. Besides contributing to an effective and efficient marketplace, financially secure families contribute to the security and stability of our communities, our states, and our country.

Appendix. Coefficients from Multinomial Ordered Logistic Regression*

	Cash Flow		Savings		Investment	
	Beta	P-value	Beta	P-value	Beta	P-value
Demographic characteristics						
Marital status and gender (relative to those who are married)						
Single male	**-0.90**	**0.00**	**-0.44**	**0.05**	-0.36	0.13
Single female	**-0.75**	**0.00**	-0.15	0.43	-0.34	0.11
Race/ethnicity (relative to those who are White)						
Black	**-0.46**	**0.09**	-0.19	0.49	**-0.75**	**0.01**
Hispanic	-0.24	0.49	-0.03	0.93	-0.55	0.15
Other	0.10	0.81	0.66	0.10	**0.69**	**0.10**
Age	0.01	0.69	-0.03	0.29	0.02	0.56
Age squared	0.00	0.85	0.00	0.18	0.00	0.61
Household size	**-0.23**	**0.00**	**-0.14**	**0.03**	-0.11	0.11
Education (relative to those with a HS degree or less)						
Some college	-0.17	0.41	**0.39**	**0.03**	**0.79**	**0.00**
College or more	-0.21	0.34	0.19	0.34	**1.08**	**0.00**
Log of household income	0.03	0.83	**0.92**	**0.00**	**1.13**	**0.00**
Home owner	0.27	0.18	**0.40**	**0.03**	0.26	0.22
Financial knowledge score	**0.02**	**0.00**	**0.02**	**0.01**	**0.03**	**0.00**
Financial learning experiences						
HS or college courses	0.23	0.30	0.23	0.24	0.20	0.34
Informational seminars	0.14	0.54	0.08	0.68	0.30	0.15
Employer	0.12	0.55	-0.02	0.92	-0.10	0.60
Personal exp. and/or friends and family	**0.36**	**0.07**	**0.47**	**0.01**	**0.48**	**0.02**
Media and/or the I9nternet	0.04	0.83	0.06	0.70	0.03	0.87
Stability						
Finances are the same or better than a year ago	0.19	0.28	**0.59**	**0.00**	0.26	0.14
Chances that Y will increase by more than inf., next 5 yr	**-0.01**	**0.05**	0.00	0.65	0.00	0.20
Chances of you or your spouse losing job, next 5 yr	**-0.01**	**0.00**	0.00	0.38	0.00	0.77
Chances that Y from SS and job pensions will be will be adequate to maintain living standards	0.00	0.47	0.00	0.84	0.00	0.95
Chances that you will have a comf. retir't have increased	-0.06	0.74	-0.04	0.82	0.20	0.26
Motivation						
Often or always read about $ management	-0.17	0.47	0.24	0.25	**0.65**	**0.00**
Often or always plan and set goals for fin future	**0.78**	**0.00**	**0.95**	**0.00**	0.10	0.54
μ1 (low)		-0.94		10.1		15.7
μ2 (medium)		0.64		12.5		19.1
Pseudo R2		0.08		0.16		0.28
Log likelihood		-618		-731		-606

* Numbers in bold are statistically significant at 10% or

Endnotes

a. Some, however, would argue that financial education has been part of the landscape for a long time. See, for example, a discussion in Hogarth, 2002.

b. Adequate emergency fund holdings are typically defined as liquid assets sufficient to cover two to six months of living expenses (Chang, Hanna, and Fan, 1997).

c. Also, many businesses and trade associations have established foundation arms of their organizations to develop financial education materials.

d. The authors defined individuals as having less financial knowledge if they scored 17 or less on a financial knowledge quiz containing 28 questions. The cut off point at 17 was based on grading on the curve — taking the mean score and using standard deviations to create the grades. C's or better were passing grades.

e. For this computation we included only individuals less than 65 years old because we assumes that individuals 65 or over will no longer be contributing to a retirement account. Although we would also like to make this calculation conditional on employment status, this variable was not available in the data set.

f. We were not able to include information regarding participation in employer's 401k and company pension plan because we lacked data on whether these plans were offered and on employment status.

g. We expect people nearing retirement to be more engaged in long-term planning and investment saving, but these behaviors may still be fairly rare in this age group.

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