

# The ABCs of Financial Education

## Experimental Evidence on Attitudes, Behavior, and Cognitive Biases

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September 2015

## Abstract

This paper uses a large scale field experiment in India to study attitudinal, behavioral, and cognitive constraints that stymie the link between financial education and financial outcomes. The study complements financial education with (i) participant classroom motivation with pay for performance on a knowledge test, (ii) intensity of treatment with personalized financial counseling, and

(iii) behavioral nudges with financial goal setting. The analysis finds no impact of pay for performance but significant effects of both counseling and goal setting on real financial outcomes. These results identify important complements to financial education that can bridge the gap between financial knowledge and financial behavior change.

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# **The ABCs of Financial Education: Experimental Evidence on Attitudes, Behavior, and Cognitive Biases**

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*JEL Codes: C93, D14, G21, O12*

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## **1. Introduction**

In the wake of the recent global financial crisis, many policy makers have argued that lack of financial education was a contributing factor to the market turmoil (Lusardi and Mitchell, 2013). As a result, financial education programs are currently at the forefront of the post-crisis reform agenda.<sup>2</sup> Other macroeconomic and technological trends are also prompting such demand. With the explosive growth of microfinance and the emergence of mobile money in many parts of the world, policymakers and NGOs are urging more widespread financial awareness and knowledge to enable the poor to better understand and utilize the new financial products at their disposal.<sup>3</sup>

Thus, a consensus has emerged around the need to expand financial education in the developed and developing world. Such policies may be critical not only to improving household welfare, but also to ensuring a stable financial system. Despite the theoretical benefits of greater financial education, however, the empirical evidence supporting such benefits is limited and offers mixed results.

While an abundance of survey data indicates a positive correlation between financial education and better financial decisions, causal analysis remains scarce. Moreover, what causal evidence exists does not provide a clear picture of the impact of financial education on ultimate financial outcomes. The results vary from positive, such as the improved business practices of micro-entrepreneurs in response to “rule of thumb” financial education (Drexler et al., 2013), to zero, shown by the lack of impact on savings from financial education in Indonesia (Cole et al., 2011), to outright failure, such as a video and radio based financial education course that was discontinued

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<sup>2</sup> The United States adopted a President’s Advisory Council on Financial Literacy in 2008 to help promote financial education at all levels of the economy; the UK government mandated compulsory financial education in schools from 2012 onwards; the Indonesian government declared 2008 as the year of financial education; the Reserve Bank of India launched a series of financial literacy and counseling centers across the country in 2007; Brazil and many other developing countries have incorporated national strategies for improving financial education; and private and multilateral agencies such as Citibank and the World Bank have multi-million dollar programs on financial education throughout the developed and developing world.

<sup>3</sup> See for example, “Financial Literacy: A Step for Clients towards Financial Inclusion,” Global Microcredit Summit Commissioned Workshop Paper, November 14-17, 2011.

due to logistical challenges and low take-up (Chong et al., 2010). One leading explanation for the disparate effects is the heterogeneous collection of financial education programs studied. Programs available in the literature consist of wide variation in topics covered, training emphasis, and medium of instruction, among other dimensions (see Fernandes et al. 2013; Xu and Zia, 2013; and Miller et al. 2014 for literature reviews). A limitation of the existing literature is that it generally does not identify nor isolate the specific components that contribute to particular program's effectiveness. Thus, policy-makers face the sub-optimal choice of supporting potentially ineffective programs or throwing the baby out with the bathwater.

In this paper, we strive to fill this gap in the literature by exploring which aspects of financial education interventions facilitate informed economic decision-making, and where the link between financial education and financial outcomes might break down in unsuccessful programs. Specifically, we consider three frictions that may prevent financial education from benefitting recipients if not specifically addressed in the program. First, we consider the role of participant motivation to determine whether limited desire for financial education can be a source of program failure. Second, we consider program intensity and personalization to ascertain whether unsuccessful programs simply do not provide enough information and reinforcement. Third, we assess whether behavioral factors play a role in translating financial knowledge into action, as individuals may fail to act on their knowledge due to cognitive or behavioral limitations.

To investigate these issues, we conduct a randomized evaluation with a large study sample of over 1,300 individuals in an urban city in India. Two-thirds of this sample was randomly selected to receive a five-week, high quality, video-based financial education program on budgeting, savings, credit, and insurance. The remaining one-third of the sample received health training, with similar video-based and logistical format, to control for Hawthorne effects.

Since the main thrust of our study is to examine factors that channel financial education interventions to improved financial outcomes, we combine financial education with three separate treatments, all randomly assigned at the individual level. First we test the importance of participant motivation on the efficacy of financial education. Drawing inspiration from the education literature that has found significant improvements in exam scores due to monetary incentives (Angrist and

Lavy, 2009), we experimentally vary motivation by offering half of the sample participants cash incentives for correct answers on a financial knowledge test (i.e., “pay for performance”). If individuals’ existing financial habits are deeply ingrained or “sticky,” they may not be interested in learning from financial training or may need external incentives to do so. Indeed, existing financial education studies have found low interest among adults in joining a financial education workshop, as well as relatively low attendance rates during the course of the program (Bruhn et al., 2013).

Second, we investigate the hypothesis that, although individuals may be motivated to learn, traditional financial education courses may be insufficient to foster the skills necessary to improve financial decisions because they do not address an individual’s unique needs. Specifically, we induce experimental variation in the intensity and personalization of financial education by delivering additional financial counseling services to half of the financial education treatment group. The effectiveness of such individual counseling has been well-proven in the medical and mental health fields, where interactions with counselors helps to adapt generic advice into actionable items that individuals can readily implement (e.g., Lerman et al., 1995; Marcus et al., 1998; Proper et al., 2003; Rimer and Kreuter, 2006). In our setting, this financial counseling treatment provides individuals with both intensive instruction and individualized advice, given that people in different situations need correspondingly different approaches. For example, participants can have a one-on-one tutorial with the counselor about the general steps in writing a budget. They may also ask for assistance in drafting a budget for their particular household, or seek advice on ways to minimize their own family’s expenses.

Finally, our third treatment explores behavior change barriers interrupting the link between financial knowledge and financial outcomes. That is, individuals may have the motivation to learn and may have adequate tools to make informed financial choices, but they may face behavioral constraints in converting their financial knowledge into concrete action (Mullainathan and Shafir, 2009 and 2013). We experimentally relax such behavioral impediments by encouraging half of the participants in the financial education treatment group to set short-term, visible, and achievable financial goals. By prompting respondents to designate target dates for completing financial planning goals (e.g., start putting money aside as saving each week), this intervention may provide

direction, invoke energy, and affect persistence among participants (Locke and Latham, 2002). This approach is similarly employed in a variety of fields, including household energy consumption conservation (Abrahamse et al., 2007) and organizational behavior (Gist, 1987), where concrete goal-setting techniques have been widely studied. Concrete goal setting has also been shown to affect financial decisions on savings, spending, and debt repayments (e.g. Agarwal et al. 2014; Bartels and Sussman 2015; Salisbury 2014; Soman and Zhao 2011; and Ülkümen and Cheema 2011).

Our findings corroborate results in the existing literature that financial education alone generally fails to achieve positive impact on financial outcomes. While the classroom-based financial education program we delivered to all treatment groups significantly improved participants' financial attitudes and awareness about the details and benefits of financial products, the training on its own did not bring about changes in financial behavior. Importantly, we also find that the pay for performance treatment had no substantial impact on the multiple dimensions of financial knowledge we measured on follow-up tests. This result implies that lack of motivation was likely not a key hindrance to learning financial concepts, and is consistent with the fact that attendance at our five-week financial education course was close to 100%. Furthermore, this finding indicates that individuals in our study face barriers other than motivation to learn, which impede the link between financial education training and financial outcomes.

Our results on the goal setting treatment indicate that behavioral factors are at work in preventing the knowledge gained in financial literacy training from influencing future actions. Specifically, we find that combining goal setting with financial education fostered relatively simple follow-up actions, such as attempting to write a budget, starting informal savings, and avoiding borrowing for unforeseen expenses. Thus combining simple strategies to overcome behavioral barriers such as procrastination and forgetfulness can result in increased impact. These strategies, however, appear limited in catalyzing more difficult behavioral changes. For example, we do not find that those who received the goal setting treatment were more likely to regularly write a budget or open a formal bank savings account.

Encouragingly, we find that the intensity and personalization of financial education support can enable individuals to undertake these more costly or difficult actions to better manage their finances. We find that individualized counseling led to significant and economically meaningful improvements in ongoing budgeting and holding a formal bank account. Furthermore, we find that the sample population receiving all three treatments in financial education, counseling and goal-setting (that is, a very high intensity treatment) exhibited larger positive changes on all outcomes we examined, relative to those who received financial education alone.

Taken together, our results confirm the hypothesis that individuals often face multiple constraints in improving financial behavior. While financial education alone may be relatively ineffective in improving outcomes, bundling such training with inexpensive but personalized add-ons, such as counseling and goal-setting, results in a potent combination, leading to meaningful impacts on both financial knowledge and behavior.

More generally, our findings suggest that traditional financial education programs, especially those implemented in a group setting with a one-size-fits-all approach, may be inadequate in equipping individuals with the appropriate tools to bridge the gap between financial knowledge and financial behavior. Nevertheless, we do not view this as evidence to warrant broad pessimism about financial education programs. Rather, this evidence builds on prior research and expands our understanding of the factors that enable financial knowledge to become financial actions – providing personally relevant support, adequate intensity of information, and overcoming behavioral limitations to change. This can enable policy makers and NGOs to design and implement more effective financial education support for development impact.

The rest of this paper proceeds as follows. Section 2 describes the sample and study design. Section 3 presents the empirical strategy, summary statistics, and randomization checks, and Section 4 discusses the results. Section 5 concludes with the implications of the study. Appendices 1 and 2 provide the content of our financial education and health videos and present the financial knowledge survey questions, respectively.

## 2. Sample and Study Design

Our study sample consists of over 1,300 urban poor households in Ahmedabad, a metropolitan city in the state of Gujarat, India. To manage the large sample size, we conducted the study in four waves. The sample size in each wave is reported in Table 1, Panel A. Respondents came from different *chalis* (neighborhoods) which were mutually exclusive across waves. Furthermore, all respondents were associated with Saath, our non-government partner organization. About half were clients of Saath's microfinance services, while the other half were participants of Saath's other urban development programs such as livelihood training.

The study design consists of two main components. First, two-thirds of the study sample was randomly selected to take part in a comprehensive classroom-based financial education program. The remaining one-thirds of the sample was invited to attend a similar classroom-based health education program. Second, the design includes three additional treatments: pay for performance, financial counseling, and goal setting, which are described in detail below.

The pay for performance treatment was randomly assigned within the classroom treatment arms, wherein half the financial education group and half the health education group were offered financial incentives for correct answers on a follow-up knowledge test. The goal setting and financial counseling treatments were randomly assigned among the financial education treatment group.

Table 1, Panels B and C indicate the percentage of our sample that received these treatments. We also note that treatments were stratified in each wave based on the respondent's gender, whether the respondent was currently a client of Saath microfinance, and their *chali* (neighborhood).

Data collection included a comprehensive baseline survey followed by program implementation, a post-intervention knowledge survey administered in the respondents' households three weeks after the final training session, and a final endline survey implemented ten months later.

### *2.1 Classroom-Based Financial Education*

First we discuss the overarching financial education intervention comprising the research study design. Prior to delivering experimental “add-on” treatments, a comprehensive classroom-based financial education program was delivered to the main treatment group. Two-thirds of all sample participants were invited on a randomized basis to attend a video-based financial education training program. The remaining one-third of sample participants formed the control group and was invited to video-based training on health.

Both financial education and health training programs consisted of five consecutive weekly sessions, each lasting two to three hours. To control for Hawthorne-type effects, the control group was provided with health training instead of no training at all to ensure that both treatment and control experienced similar levels of “disruption” in their everyday activities due to the weekly sessions.

All respondents were assigned to attend a particular treatment or control class of about 20 participants. For each wave of the study there were about 15 classes (10 treatment and 5 control), which met at the same time every week for the duration of the program. Classes were held at a nearby training center equipped with computers, where the respondents watched their respective training videos. All respondents received a Rs. 50 (US\$ 1) show-up fee for each session they attended, and were provided free transportation to and from their homes to the training center for each visit.

The financial education videos included the following five topics: budgeting, savings, loans, insurance, and a final summary video. The health training videos covered topics unrelated to financial knowledge, specifically: cleanliness and hygiene, midwifery, maternal and child health, condoms, AIDS and syphilis, and night-blindness. The financial education videos were produced by a professional company with significant feedback from us and used popular local actors. The starting scripts were provided by us and included standard materials previously used in the literature. Through continuous interactions between researchers and the production company, we aligned the scripts to the local context and piloted several rounds on local audiences before

finalizing the videos. The study team did not produce the health videos; rather, we utilized videos previously used in Gujarat by the United Nations for health education promotion.

Each financial and health session was followed by a group discussion led by a trained instructor who summarized the main points of each video and answered outstanding questions. Appendix I explains the content of both the financial education and health modules further.

## *2.2 Additional Treatments*

In the following sub-sections, we describe three different treatment interventions – pay for performance, individualized financial counseling, and goal setting – that were delivered on a randomized basis at the individual level to test cognitive and behavioral constraints to acquisition and application of financial education. For each treatment, we present the literature supporting these strategies, followed by a discussion of our operationalization of the treatments.

### *2.2.1 Pay for Performance*

The objective of the pay for performance treatment was to test whether financial learning is constrained by motivational factors in addition to the knowledge barriers examined with classroom-based financial education training. By offering payments for correct responses on a knowledge-based exam, the treatment assessed whether concrete monetary incentives can more effectively induce individuals to learn, retain, and apply financial knowledge.

Monetary incentives have been shown in the literature to advance general education outcomes. In a notable study conducted by Angrist and Lavy (2010) in Israel, a significant increase in high school certification rates was observed for low-performing female students who received experimental cash incentives. In North America, Angrist and Lang (2009) found similar effects produced by a combination of academic support services and financial payments, which led to higher grades for female college freshmen.

In our study, monetary incentives were provided to participants based on their scores in a survey measuring financial or health knowledge acquired in the trainings. Half the participants – selected individually at random and independent of their financial education treatment status – were paid

for correct answers to questions related to the videos they watched (i.e. health training participants received compensation for health test questions, and financial education training participants received compensation for financial test questions). The other half were paid for correct answers to questions that were not covered in their video training (i.e. financial education training participants got paid for health test questions, and vice versa). Participants were informed at the beginning of the training program whether the content of their video training program determined their compensation in the follow up survey. Moreover, respondents were reminded individually about their pay for performance treatment status before each of the five training sessions. Respondents received Rs. 10 for each question that they answered correctly.

The post-intervention knowledge tests, administered three weeks after classes ended, consisted of three sets of financial literacy questions that were aimed at measuring the impact of financial education on various dimension of financial knowledge (see Appendix 2 for the exact wording of these questions). The first set of questions tested financial numeracy. Respondents were asked questions that involved numerical calculations, such as comparing monthly versus weekly interest rates and adding household income/expenses. The second set of questions measured respondents' financial awareness. These focused not on computation but instead on general concepts related to financial products and financial planning. For example, respondents were asked about the purpose of a household budget, minimum bank account opening requirements, and whether bank savings accounts had deposit insurance. Finally, the third set of questions assessed financial attitudes and perceptions, measured by asking respondents what financial advice they would give to their friends. For instance, respondents were asked whether they would suggest buying insurance or increasing savings to a friend who had a risky job.

### *2.2.2 Individualized Counseling*

An important research question we address in this study is whether the intensity of financial education and the medium in which it is delivered affects knowledge acquisition and application. Our hypothesis is that traditional classroom-based financial education trainings may be insufficiently suited to individuals' specific learning needs. We test the role of the education medium by supplementing the financial education trainings with individualized counseling. This treatment consisted of one-on-one, in-person counseling at home, where the counselors aided in

tasks such as preparing a budget, opening a bank account, paying a loan, or buying insurance. Such counseling may be more effective in changing behavior as it provides guidance specific to the needs of the participant.

Medical and public health studies have found individualized or segmented counseling to be effective in promoting better health behaviors. For example, individualized risk counseling for women with a family history of breast cancer has been shown to improve understanding of their personal risk (Lerman et al. 1995). Similarly, Proper et al. (2003) find positive and significant effects of individual counseling on physical fitness. In the financial context, Dalal and Morduch (2010) find that having an insurance representative present after trainings significantly improves take-up rates. Similarly, Bertrand et al. (2006) find that allowing banking workshop participants the opportunity to complete account opening paperwork as part of the learning workshop and having a bank representative present on-site significantly improves take-up and adoption of complementary banking products such as ATM cards, direct deposit, and electronic fund transfers. Finally, psychologists have long advocated the benefits of human interaction in individualized counseling over inanimate information sources such as pamphlets, text messages, or computer messages (King, 2007).

The counseling treatment in our study was randomly assigned among financial education participants. Half were randomly selected to receive an offer of financial counseling, independent of their goal setting treatment status. Specifically, within one month of the classroom sessions, financial counselors visited the counseling treatment group in their homes to provide individualized financial counseling services. The financial counselors assisted participants on several issues – including, but not limited to, preparing a budget, opening a bank account, paying off or re-financing loans, and purchasing an insurance policy – depending on their individual needs. Financial counselors were trained rigorously by our partner research organization in India, the Center for Microfinance, prior to visiting respondents.<sup>4</sup>

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<sup>4</sup> See Appendix 2 for more details on the services provided by the financial counselor.

### *2.2.3 Concrete Goal Setting*

The final treatment in our study was designed to test the behavioral effect of procrastination on financial outcomes. We theorize that procrastination may be an impediment to the conversion of financial knowledge into positive financial outcomes. To examine this behavioral constraint, we implemented a treatment that encouraged sample participants to set concrete financial goals with designated completion dates.

Concrete goal-setting is a technique studied in a variety of fields, from conserving household energy consumption (Abrahamse et al. 2007) to organizational behavior (Gist 1987). The literature identifies three main mechanisms by which goals can affect performance outcomes. Specific goals can provide direction, invoke energy, and affect persistence (Locke and Latham, 2002). Goals provide direction by focusing the participant's attention and effort towards activities related to the goal. Rothkopf and Billington (1979) had high school students study a passage with goal-relevant and non-relevant text. Recording students' eye movements revealed that students fixated on goal-relevant sentences over twice as long as non-relevant sentences due to the direction provided by the goals. Goals also serve as an energizing function. Bandura and Cervone (1983) evaluated the effort of subjects performing a strenuous task and found that the subjects with goals and performance feedback exerted significantly more physical effort. Finally, goals affect persistence. LaPorte and Nath (1976) found that subjects presented with a difficult goal for answering questions correctly about a reading passage studied longer with greater persistence, and produced more correct answers when tested.

Goal setting has also been shown to be important in financial decision-making. Existing research has looked at the effect of goal setting among consumers on payment, spending, and saving behavior. Confronted with different credit card payment options, consumers' individual financial goals often determine the payment amount selected (Bartels and Sussman 2015; Salisbury 2014; and Agarwal et al. 2014). Thaler (1999) and Soman and Cheema (2011) further explore goal setting as a form of "mental accounting" and find that people are more disposed to honor spending targets that are earmarked for certain product categories. Moreover, financial goals have been widely shown to influence consumer savings (Shefrin and Thaler 1988; Soman and Cheema 2004), with potentially disparate outcomes depending on the type of savings goal. Soman and Zhao (2011)

find that a single savings goal is more likely to be attained, whereas setting multiple goals may dilute the importance of each goal. Ülkümen and Cheema (2011) observe that for more ambitious savings targets, having concrete goals as opposed to general goals can increase the perceived importance of and commitment to the target.

In our study, the goal setting treatment was administered to respondents who received the financial education treatment. Among this pool, half the sample was randomly selected to receive a goal setting treatment, while the remaining half formed the control group. The goal setting assignment was orthogonal to the financial counseling assignment. Treated individuals received a household visit and were first asked about whether they currently used, or planned to use, financial services and financial planning tools. Next, they were asked to set a target date for several concrete financial planning goals (i.e. opening a savings account, increasing savings, reducing expenditure, purchasing insurance). These target dates were then marked on a calendar provided to respondents at no cost.

Further, to isolate the effect of goal setting versus the effect of the household visit, the goal setting control group was visited by surveyors as well and was asked about their use of financial services. However, they were not asked to set a target date for financial goals or provided with free calendars. Both goal setting treatment and control household visits happened within four weeks of the follow up survey on financial knowledge.

### **3. Empirical Methodology and Summary Statistics**

#### *3.1. Empirical Methodology*

The main analysis of this paper estimates causal impacts on financial knowledge and behavior. First, we analyze impacts on three distinct components of financial knowledge, namely financial numeracy, awareness, and attitudes. We study pay for performance impacts using both data from the short-term survey and long-term persistence using endline data.

Since financial education and pay for performance were orthogonal treatments both randomized at the individual level, we estimate causal effects on financial knowledge with the following OLS model:

$$Y_i = \alpha + \beta_1 FinEd_i + \beta_2 Pay\ for\ Perf_i + \beta_3 FinEd\ and\ Pay\ for\ Perf_i + \sum_k Strata\ Dummy_{ik} + \epsilon_i \quad (1)$$

Where outcomes  $Y$  represent financial knowledge measures from the survey;  $FinEd$  is a dummy equal to 1 for an individual  $i$  who was assigned the financial education treatment;  $Pay\ for\ Perf$  is a dummy equal to 1 for the an individual  $i$  who was offered pay for performance on financial knowledge questions; and  $FinEd\ and\ Pay\ for\ Perf$  is the interaction term.

Next, we estimate treatment impacts on financial behavior using endline data. Since we have three treatments (financial education alone, financial education with counseling, and financial education with goal setting), we analyze results with a saturated model to simplify interpretation:

$$Y_i = \alpha + \beta_1 FinEd_i + \beta_2 FinEd\ and\ Goal_i + \beta_3 FinEd\ and\ Couns_i + \beta_4 FinEd\ and\ Couns\ and\ Goal_i + \sum_k Strata\ Dummy_{ik} + \epsilon_i \quad (2)$$

Here, the outcomes  $Y$  represent responses to financial behavior questions from the endline survey.  $FinEd$  is a dummy equal to 1 for an individual who received the financial education treatment, but not the financial counseling or the goal setting treatments.  $FinEd\ and\ Goal$  is a dummy equal to 1 for an individual who received both the financial education and goal setting treatments, but not the financial counseling treatment. Similarly,  $Fin\ Ed\ and\ Couns$  is a dummy equal to 1 for an individual who received both financial education and counseling treatments, but not goal setting. And finally,  $FinEd\ and\ Couns\ and\ Goal$  is a dummy equal to 1 for an individual who received all three treatments. The omitted category is group that did not receive any financial education, the control group.

For both equations (1) and (2), we include strata dummies for precision, since in each wave of the study we stratified the randomization. Strata are defined by gender, whether the respondent is currently a client of Saath microfinance, and neighborhood. We also note that since neighborhoods were mutually exclusive across waves, we do not add wave fixed effects. Furthermore, in each

study wave, participants were assigned to attend a particular class that met at the same time every week for the duration of the training program. Classes consisted solely of either financial education training participants or health training participants. In estimating equations (1) and (2), we cluster standard errors at the wave-class level.

### *3.2 Summary Statistics and Randomization Checks*

Baseline characteristics for our sample are presented in Table 2. Households in our sample comprised 6 members on average, with a mean monthly income of Rs. 7017 (US\$ 120). A little more than half (58 percent) of our respondents were female, and a vast majority was married. Respondents in our sample also had limited schooling, with 47 percent having completed elementary school, but only 4 percent having completed secondary school.

In addition to standard data on household demographics and respondent characteristics, our baseline survey measured financial knowledge, attitudes, and preferences. First, we note that almost everyone in our sample (94 percent) reported having difficulty saving. Next, we measured discount rates in the standard manner, by asking respondents to provide the minimum amount they would be willing to hypothetically accept in one month in lieu of a hypothetical payment of Rs. 350 today. Respondents in our sample reported relatively high monthly discount rates: the median was 0.14, while the average was 1.52. We also measured risk aversion by allowing respondents to choose between a payment of Rs. 10 with certainty, or playing a lottery that pays out Rs. 25 or Rs. 0 with equal probability. 18 percent of our sample chose the safe payment, and these respondents were coded as risk averse.

We also measured basic computational skills through a series of eight mathematics questions. The mean score for these mathematics questions was 4.73 out of 8. We find similar computational skill levels as in Cole, Sampson, and Zia (2011) in Indonesia. Specifically, almost all respondents could answer a simple addition question (“How much is  $4+3$ ?”), but only about 50 percent was able to answer a multiplication question correctly (“What is 3 multiplied by 6?”). Even fewer respondents were able to make percentage calculations correctly (“What is 8 percent of 100?”), with close to half responding “do not know” to this question.

Finally, we measure baseline levels of financial knowledge based on the following three questions, which are a standard set provided by Lusardi and Mitchell (2009): 1) “If you borrowed Rs. 5,500 and were charged 12 percent interest per month, how much interest would you pay in the first month?”; 2) “Suppose you had Rs. 100 in a savings account and the same amount saved at home, which of the two will yield returns at the end of the year?”; and 3) “Suppose your friend inherits Rs. 10,000 today and his brother inherits Rs. 10,000 three years from now. Who is richer because of the inheritance?” Measured financial literacy was low in our sample, with an average score of 1.6. Similar to the mathematics questions, few respondents (less than 10 percent) were able to calculate interest rates correctly in question 1, and over 60 percent responded “do not know” to this question. In contrast, almost all respondents were aware that a savings account yields positive returns (question 2), but only 58 percent of our sample was able to correctly identify the time value of money (question 3), lower than what Lusardi and Mitchell (2009) find among respondents in the US.

Table 2 provides a test of the randomization. The p-values in column 4 report the statistical significance of a joint test for the difference between the means across all treatments including the control group. As the table shows, the p-values are fairly large suggesting no significant difference across the treatments in baseline measures.

Finally, attrition in our sample was very low, at less than 6 percent of the entire sample over the four waves from baseline to final follow-up. Classroom attendance likewise was not an issue, with nearly full attendance across all sessions.

#### **4. Results**

In this section, we present and discuss results related to both short-term impacts on financial knowledge, as well as longer-term impacts of the interventions on both financial knowledge and

behavior.<sup>5</sup> The specific behaviors we report are the ones targeted by the financial education treatments: budgeting, savings, borrowing, and insurance adoption.

#### *4.1. Financial Knowledge and Pay for Performance*

Short-term effects of traditional financial education are varied, with no impact on participants' financial numeracy scores but strong positive effects on aggregate measures of financial awareness and attitudes. Table 3 presents results on aggregate measures of financial knowledge, while Appendix Tables 1-3 present regression results on individual questions for each category of numeracy, awareness, and attitudes. The longer term effects are likewise reported in Table 4 (aggregate measures) and Appendix Table 4 (individual questions).

We consider a variety of different outcome variables as proxies for financial numeracy, including questions on selecting financial products and budgeting capabilities. The short-term results presented in Table 3 and Appendix Table 1 indicate no impact on financial numeracy. Moreover, even the addition of pay per performance did not yield a positive effect in the short-run on financial numeracy skills. Table 4 and Appendix Table 4 validate these findings for the long-term as well. Financial education failed to help individuals choose the loan option that minimizes expenses, to select the most appropriate savings or insurance product, or to write a budget effectively. Incentivizing individuals with payments on correct answers led to no significant improvement in financial numeracy scores.

In contrast financial education does appear to create better overall financial awareness and improve attitudes towards financial products. The results presented in Table 3 show that individuals who received financial education alone improved financial awareness and financial attitudes by 7 percentage points and 8 percentage points, respectively compared to the control group. Analyzing the individual questions in Appendix Table 2, those who received financial education were 15 percentage points more likely to know minimum bank account opening requirements, 12

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<sup>5</sup> A companion paper discusses measurement issues related to financial knowledge and how our measures of financial knowledge allow for the disaggregation of impacts into the categories of numeracy, awareness, and attitudes. See Carpena, et al. (2014).

percentage points more likely to distinguish bank processing fees, and 20 percentage points more likely to understand unproductive loans relative to the control group. Appendix Table 3 shows similar positive impacts on short-term financial attitudes – when hypothetically asked to give financial advice, treated individuals were 10 percentage points more likely to suggest insurance cover for a dangerous work environment and 20 percentage points more likely to suggest making a budget to track household income and expenditure relative to the control group. Table 4 and Appendix Table 4 shows these results hold in the long run as well.

Notably though, the pay for performance treatment did not lead to any significant marginal improvements over the standard curriculum on either of the aggregate measures of awareness or attitudes. The results in Table 3 and 4 hence suggest that participant motivation was not a critical barrier in improving financial knowledge in our sample.

#### *4.2. Financial Behavior*

Our analysis on financial behavior comes from the endline survey. Data from this survey also helps distinguish impacts of additional treatments of individualized counseling and goal setting over traditional financial education.

##### Budgeting

We first consider changes in household budgeting, the theme of one of the five financial education video sessions, in Table 5. In columns (1), (3), and (5) we report impacts of being invited to any financial education treatment on beliefs that budgeting is helpful (column 1), attempts to make a budget in the last six months (column 3), and making a regular monthly budget (column 5). Without distinguishing between treatments, we see a strong positive treatment effect on all these dimensions, though the effects weaken as we move from beliefs to actions and outcomes. Specifically, while those individuals invited to any financial education treatment were 22 percentage points more likely than the control group to understand the benefits of making a budget and 28 percentage points more likely to have attempted to make a budget, they are only 3 percentage points more likely to actually make a regular budget every month.

Next, we delve into mechanisms by analyzing the treatments separately in columns (2), (4), and (6). Our results show that the medium of delivery makes a substantial difference in long-run budgeting behavior. Providing classroom-based financial education alone generally yields smaller results than when it is complemented with higher-intensity, personalized treatments. We find that those who received the single financial education treatment were 17 percentage points more likely than the control group to think that budgeting is helpful, while combining financial education with the other two treatments yielded a 26.5 percentage points improvement. Importantly the p-value on the F-test comparing all three treatments against financial education alone is 0.02, suggesting significant marginal improvements over financial education alone due to the add-on treatments. Similar results are reported when either goal setting or counseling alone are part of the financial education package.

The table also shows interesting distinctions across treatments when moving from beliefs about budgeting to action. Notably, the effect of financial education classes and goal setting is limited to raising awareness about budgeting, but stops short of regular behavior change. For instance, in column (4), those who were invited to financial education alone are 14 percentage points more likely than the control group to have attempted to make a budget in the last six months, but this effect disappears when it comes to making a regular monthly budget (column 6). Adding goal setting improves the attempt to make a budget slightly to 17 percentage points (not statistically distinguishable from financial education alone) but again the effect does not persist for regular monthly budgets.

The significant effect on sustained behavior change comes from adding counseling to the mix. Individuals invited to financial education with personal counseling are 38 percentage points more likely to have attempted a budget and 4 percentage points more likely than the control group to make a regular monthly budget. These effect sizes are even larger for the highest intensity treatment (financial education with goal setting and counseling) at 43 percentage points and 5 percentage points, respectively.

The fact that financial counseling is key to sustained budgeting behavior is important. While financial education classes and goal setting can highlight the importance of budgeting, individuals

may still lack the necessary skills to actually maintain a regular budget given their unique individual circumstances. Our results suggest that personalized counseling acts as a critical bridge that enables individuals to apply their acquired financial knowledge to improve behavior.

### Savings

We next turn to long-term impacts on household savings behavior in Table 6. In columns (1), (3), and (5) we report impacts of being invited to any financial education treatment on holdings of informal savings (column 1), holdings of formal savings (column 2), and investments in fixed or recurring deposits (column 5). Without distinguishing between treatments, we find that participants who received any form of financial education intervention were 2.8 percentage points more likely to hold informal savings and 7.5 percentage points more likely to hold formal savings in a bank account.

As with budgeting, the medium of instruction appears to matter for motivating sustained behavior change. Interestingly, financial education alone produced no effect on any of the savings outcomes we measured -- participants who received only the financial education treatment were no more likely to hold savings, formally or informally. These findings suggest that it may be more difficult to influence households' savings compared to altering budgeting behavior by using a traditional program of financial education. Classroom-based models may not be adequate to address cognitive barriers or resource constraints that are likely to inhibit households from changing their current savings practices.

The results on add-on treatments indicate that the type and intensity of the intervention has a significant influence on savings. Incorporating goal setting and/or counseling did produce changes in savings behavior and our results offer insights into the mechanism of impact. Specifically, participants who received goal setting in addition to financial education were 4.7 percentage points more likely than the control group to save informally (in a neighborhood fund or at home) and 6.3 percentage points more likely to save formally at a bank. Both these results are significant at the 10 percent level. Interestingly the results for counseling are different -- we find no significant effect of adding counseling on informal savings but a 13.8 percentage points improvement in the likelihood of opening a formal bank account over the control group, a result that is statistically

significant at the 1 percent level. The p-value on the F-test comparing the combined financial education and counseling treatments against financial education alone is 0.007, suggesting significant marginal improvements over financial education alone due to the add-on counseling treatment.

These results suggest that while financial education classes and goal setting can inform and encourage people to save, respectively, they still may lack the skills needed to open and maintain a bank account. While goal setting did appear to lead to increase in the likelihood of savings, the effects of counseling are honed in on formal savings, with an effect size more than double that of goal setting. Counseling thus appears to enable participation in the formal financial sector and, as with budgeting, serves as a bridge that enables individuals to convert their acquired financial knowledge into financial actions.

Sustained behavior change in household savings – considered as investments in fixed or recurring deposits (column 6) – appears more difficult to achieve. Combining financial education with both goal setting and counseling led to a modest 3.9 percentage points increase in the likelihood of repeated deposits; however, this result is only significant at the 10 percent level. Neither financial education alone nor financial education combined with personalized counseling yields an effect on fixed or recurring deposits.

### Borrowing

The results for borrowing are presented in Table 7. In columns (1), (3), (5), (7), (9), and (11), we report impacts of being invited to any financial education treatment on outstanding loans (column 1); planned borrowing in the next year (column 3); positive borrowing, e.g. for business, education, or durable goods (column 5); negative borrowing for unforeseen circumstances (column 7); borrowing to repay other debt (column 9); and general knowledge of loan terms (column 11). Findings suggest that financial education yields only modest effects on household borrowing. We observe no significant difference in outstanding loans, planned borrowing, and use of loans for productive purposes among any of the treatment groups compared to the control group.

As with budgeting and savings, the medium of instruction does appear important for influencing certain household borrowing behaviors. Financial education alone had no impact on participants' understanding of loan terms nor on their propensity to increase borrowing for productive purposes and decrease borrowing for unproductive purposes. However, we observe a more positive impact on borrowing practices when goal setting and financial counseling treatments are combined with the classroom approach. When participants set performance goals, we observe a 2.5 percentage points decrease in the likelihood of borrowing for unforeseen expenses, compared to no effect on this type of borrowing when participants received just financial education (Table 6, column 8). Participants exposed to a combination of all three treatments were also 15.1 percentage points more likely to know the interest rate details of their loan, suggesting general awareness of borrowing best practices is best enhanced through a combination of high-intensity interventions.

### Insurance

The results for insurance as the outcome of interest are presented in Table 8. In columns (1), (3), and (5) we report impacts of being invited to any financial education treatment on purchases of life insurance (column 1), debt insurance (column 3), and health insurance (column 5) within the last six months. Financial education generally had the poorest impact on insurance outcomes, with very little adoption of insurance products in the six-to-ten months following the program.

While traditional financial education provided alone caused no significant changes in the take-up of insurance products compared to the control group, there is some modest evidence that a combination of high-intensity interventions can yield effects on adoption of certain types of insurance. In particular, those who received all three treatments were 5.4 percentage points more likely to purchase life insurance. However, these effects do not hold for other types of insurance, such as debt or health insurance. No combination of financial education, goal setting, or counseling enticed participants to purchase these products.

These results indicate that participants face additional cognitive and behavioral constraints to the take-up of insurance. One reason is that participants may view insurance products as a luxury that will not add value in the short run. Financial education will thus have a limited impact on insurance adoption relative to budgeting and savings, which are cognitively and financially easier for

participants to implement. Insurance products are also relatively new in India, and the absence of peer effects and knowledge of long-term returns may partly explain participants' reluctance to purchase insurance. Due to these constraints, decisions regarding insurance may be more difficult to influence through financial education compared to decisions regarding savings and budgeting.

## **5. Conclusion**

This paper studies a large-scale field experiment among urban households in India to highlight the limitations of financial education and identify important complements that can enable financial education to successfully lead to financial behavior change. Specifically, we find that financial education alone improves financial awareness and attitudes but falls short of improving longer term behavioral outcomes on savings and borrowing. In comparison, the addition of individually tailored interventions in the form of financial goal setting and particularly financial counseling are more successful in helping individuals circumvent behavioral and cognitive constraints.

Taken together, our findings suggest that financial education can yield significant improvements in financial knowledge and behavior when sufficient attention is paid to the delivery model. Moreover, our results suggest that traditional classroom-based financial education alone has limited ability to affect long-term financial behavior, whereas adding more personalized and motivational complements can lead to sustainable behavior change in saving and borrowing outcomes.

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**Table 1: Sample Size and Experimental Design**

(1)	(2)	(3)	(4)	(5)
<b>Panel A. Sample Size per Wave</b>				
Wave	Sample Size			
1	279			
2	422			
3	243			
4	384			
Total	1328			
<b>Panel B. Experimental Design: Financial Education and Pay for Performance</b>				
Financial Education Videos	Pay for Performance	N	% of Sample	
No	No	218	16	
No	Yes	224	17	
Yes	No	445	34	
Yes	Yes	441	33	
<b>Panel C. Experimental Design: Financial Education and Additional Treatments</b>				
Financial Education Videos	Counseling	Goal Setting	N	% of Sample
No	No	No	442	33
Yes	No	No	232	17
Yes	No	Yes	209	16
Yes	Yes	No	215	16
Yes	Yes	Yes	230	17

This table describes the sample size and experimental design. The study was conducted in four waves and Panel A describes the number of respondents in each wave of the study. Panel B and Panel C describe the experiment design and randomization across the various treatments.

**Table 2: Baseline Summary Statistics**

	(1)	(2)	(3)	(4)
	Median	Mean	Standard Deviation	Test of Joint Equality of Means Across All Treatments (F-test p-value)
<i>Household characteristics</i>				
Household size	6.00	5.85	2.47	0.711
Household monthly income (Rs.)	5900.00	7017.48	5635.51	0.164
Household monthly income per capita (Rs.)	1050.00	1272.96	922.26	0.121
Household has phone		0.84		0.361
Household has non-farm enterprise		0.26		0.517
Household has water connection		0.77		0.813
<i>Respondent characteristics</i>				
Female		0.58		
Age	38.00	38.56	9.07	0.368
Married		0.98		0.503
Hindu		0.82		0.866
Completed elementary school		0.47		0.339
Completed secondary school		0.04		0.830
Saath MFI client		0.48		
Cognitive ability score (out of 3)	2.00	1.61	0.62	0.215
Has hard time saving (self-report)		0.94		0.551
Interested in financial matters (self-report)		0.87		0.460
Monthly discount rate	0.14	1.52	4.72	0.087 *
Inconsistent time preferences		0.48		0.809
Risk averse		0.18		0.934

This table provides baseline summary statistics for our sample which consists of urban poor households in Ahmedabad, India. Column (4) reports the p-value of the F-test of joint significance across all treatment coefficients in regressions of the baseline characteristics on treatment dummies. The four treatments are i) financial education video only, ii) financial education video and goal setting, iii) financial education video and counseling, and iv) financial education video, goal setting and counseling. Column (4) regressions control for strata dummies where a strata is defined by gender, location and whether the household was an MFI client. Standard errors are clustered at the wave-class level. \* indicates statistical significance at the 10% level.

**Table 3: Short Term Impact on Financial Knowledge**

	(1)	(2)	(3)
	Aggregate Measure of Financial Numeracy	Aggregate Measure of Financial Awareness	Aggregate Measure of Financial Attitudes
Financial Education	-0.010 (0.017)	0.069*** (0.016)	0.083** (0.033)
Pay for Performance	0.001 (0.018)	0.001 (0.022)	-0.016 (0.050)
Interaction of Financial Education and Pay for Performance	0.005 (0.024)	0.014 (0.025)	0.002 (0.051)
R-squared	0.186	0.177	0.209
Number of Observations	1273	1004	599
Mean of Dependent Variable in Control Group	0.647	0.695	0.798
F-test p-value: Financial Education + Interaction = 0	0.792	0.000	0.009

This table presents regression results on short-term impacts from a survey conducted three weeks after the conclusion of the financial education program. The dependent variables are aggregate measures of financial knowledge in three dimensions -- numeracy, awareness, and attitudes. Regression results for individual questions are presented in Appendix Tables 1-3. "Financial Education" is a dummy equal to 1 for an individual who was invited to the financial education treatment. "Pay for Performance" is an orthogonal treatment and is a dummy equal to 1 for an individual who was offered a monetary incentive for correct answers to financial knowledge questions. Results are reported with robust standard errors clustered at the wave-class level. All regressions include strata dummies, where strata are defined by gender, chali (neighborhood), and microfinance borrower status. \*\*\* indicates statistical significance at the 1% level, \*\* at the 5% level, \* at the 10% level.

**Table 4: Longer Term Impact on Financial Knowledge**

	(1)	(2)	(3)
	Aggregate Measure of Financial Numeracy	Aggregate Measure of Financial Awareness	Aggregate Measure of Financial Attitudes
Financial Education	-0.006 (0.030)	0.107*** (0.018)	0.080*** (0.020)
Pay for Performance	-0.019 (0.044)	-0.023 (0.014)	-0.017 (0.018)
Interaction of Financial Education and Pay for Performance	0.020 (0.051)	0.048 (0.040)	0.017 (0.024)
R-squared	0.151	0.217	0.283
Number of Observations	983	983	1224
Mean of Dependent Variable in Control Group	0.708	0.681	0.776
F-test p-value: Financial Education + Interaction = 0	0.695	0.000	0.000

This table presents regression results on longer-term impacts from an endline survey conducted ten months after the conclusion of the financial education program. The dependent variables are aggregate measures of financial knowledge in three dimensions -- numeracy, awareness, and attitudes. Regression results for individual questions are presented in Appendix Tables 1-3. "Financial Education" is a dummy equal to 1 for an individual who was invited to the financial education treatment. "Pay for Performance" is an orthogonal treatment and is a dummy equal to 1 for an individual who was offered a monetary incentive for correct answers to financial knowledge questions. Results are reported with robust standard errors clustered at the wave-class level. All regressions include strata dummies, where strata are defined by gender, chali (neighborhood), and microfinance borrower status. \*\*\* indicates statistical significance at the 1% level, \*\* at the 5% level, \* at the 10% level.

**Table 5: Household Budgeting**

	(1)	(2)	(3)	(4)	(5)	(6)
	Believes Budgeting is Helpful		Has Tried Making a Budget in Last 6 Months		Makes a Regular Monthly Budget	
Any Treatment	0.223*** (0.029)		0.279*** (0.027)		0.030** (0.013)	
Financial Education Only		0.170*** (0.040)		0.137*** (0.038)		0.028 (0.020)
Financial Education and Goal Setting		0.243*** (0.037)		0.166*** (0.041)		0.006 (0.023)
Financial Education and Financial Counseling		0.218*** (0.037)		0.384*** (0.040)		0.038* (0.020)
All Three Treatments		0.265*** (0.038)		0.434*** (0.040)		0.048* (0.026)
R-squared	0.250	0.254	0.242	0.288	0.254	0.256
Number of Observations	1253	1253	1253	1253	1253	1253
Mean of Dependent Variable in Control Group	0.600	0.600	0.193	0.193	0.064	0.064
F-test p-value: Financial Education & Goal Setting = Financial Education		0.097		0.536		0.382
F-test p-value: Financial Education & Financial Counseling = Financial Education		0.219		0.000		0.708
F-test p-value: All Three Treatments = Financial Education		0.021		0.000		0.484

This table presents regression results on household budgeting from an endline survey conducted ten months after the conclusion of the financial education program. The sample consists of respondents from all four waves of the study. "Any Treatment" is a dummy equal to 1 for an individual who received any financial education treatment. "Financial Education Only" is a dummy equal to 1 for an individual who was invited to the financial education classes, but did not receive either financial counseling or goal setting. "Financial Education and Goal Setting" is a dummy equal to 1 for an individual who received the financial education and goal setting treatments, but not the financial counseling treatment. "Financial Education and Financial Counseling" is a dummy equal to 1 for an individual who received the financial education and counseling treatments, but not the goal setting treatments. "All Three Treatments" is a dummy equal to 1 for an individual who received all three financial education, financial counseling, and goal setting treatments. Results are reported with robust standard errors clustered at the wave-class level. All regressions include strata dummies, where strata are defined by gender, chali (neighborhood), and microfinance borrower status. \*\*\* indicates statistical significance at the 1% level, \*\* at the 5% level, \* at the 10% level.

**Table 6: Household Savings**

	(1)	(2)	(3)	(4)	(5)	(6)
	Informal Savings		Formal Bank Savings Account		Investments in Fixed or Recurring Deposits	
Any Treatment	0.028** (0.012)		0.075*** (0.020)		0.021 (0.014)	
Financial Education Only		-0.003 (0.017)		0.013 (0.028)		0.002 (0.021)
Financial Education & Goal Setting		0.047* (0.023)		0.063* (0.032)		0.018 (0.021)
Financial Education & Financial Counseling		0.005 (0.022)		0.138*** (0.039)		0.026 (0.022)
All Three Treatments		0.064*** (0.020)		0.090** (0.039)		0.039* (0.023)
R-squared	0.294	0.299	0.329	0.334	0.131	0.133
Number of Observations	1253	1253	1253	1253	1253	1253
Mean of Dependent Variable in Control Group	0.080	0.080	0.296	0.296	0.045	0.045
F-test p-value: Financial Education & Goal Setting = Financial Education		0.087		0.200		0.540
F-test p-value: Financial Education & Financial Counseling = Financial Education		0.753		0.007		0.429
F-test p-value: All Three Treatments = Financial Education		0.006		0.100		0.207

This table presents regression results on household savings from an endline survey conducted ten months after the conclusion of the financial education program. The sample consists of respondents from all four waves of the study. "Any Treatment" is a dummy equal to 1 for an individual who received any financial education treatment. "Financial Education Only" is a dummy equal to 1 for an individual who was invited to the financial education classes, but did not receive either financial counseling or goal setting. "Financial Education and Goal Setting" is a dummy equal to 1 for an individual who received the financial education and goal setting treatments, but not the financial counseling treatment. "Financial Education and Financial Counseling" is a dummy equal to 1 for an individual who received the financial education and counseling treatments, but not the goal setting treatments. "All Three Treatments" is a dummy equal to 1 for an individual who received all three financial education, financial counseling, and goal setting treatments. Results are reported with robust standard errors clustered at the wave-class level. All regressions include strata dummies, where strata are defined by gender, chali (neighborhood), and microfinance borrower status. \*\*\* indicates statistical significance at the 1% level, \*\* at the 5% level, \* at the 10% level.

Table 7: Household Borrowing

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Has Outstanding Loan		Plans on taking a loan in next year		Loan Purpose: Business, Education, or Purchase of Durable Goods		Loan Purpose: Unforeseen Expenses		Loan Purpose: Repay Other Debt		Knows Details of Loan Terms	
Any Treatment	0.024 (0.030)		-0.038 (0.028)		0.042 (0.047)		-0.015 (0.010)		-0.019 (0.029)		0.095** (0.044)	
Financial Education Only		0.034 (0.037)		-0.030 (0.038)		0.086 (0.071)		0.000 (0.019)		-0.069 (0.048)		0.085 (0.063)
Financial Education & Goal Setting		-0.002 (0.042)		-0.063* (0.033)		-0.031 (0.071)		-0.025* (0.013)		-0.008 (0.042)		0.049 (0.068)
Financial Education & Financial Counseling		0.035 (0.044)		-0.029 (0.037)		0.098 (0.063)		-0.020* (0.012)		-0.027 (0.041)		0.094 (0.060)
All Three Treatments		0.026 (0.043)		-0.031 (0.044)		0.007 (0.063)		-0.017 (0.010)		0.032 (0.040)		0.151** (0.061)
R-squared	0.280	0.280	0.132	0.132	0.285	0.292	0.273	0.277	0.295	0.303	0.269	0.281
Number of Observations	1253	1253	1253	1253	540	540	540	540	540	540	540	540
Mean of Dependent Variable in Control Group	0.621	0.621	0.294	0.294	0.328	0.328	0.023	0.023	0.109	0.109	0.688	0.688
F-test p-value: Financial Education & Goal Setting = Financial Education		0.393		0.442		0.194		0.199		0.244		0.913
F-test p-value: Financial Education & Financial Counseling = Financial Education		0.992		0.978		0.887		0.293		0.374		0.108
F-test p-value: All Three Treatments = Financial Education		0.851		0.981		0.325		0.345		0.113		0.875

This table presents regression results on household borrowing from an endline survey conducted ten months after the conclusion of the financial education program. The sample consists of respondents from all four waves of the study. "Any Treatment" is a dummy equal to 1 for an individual who received any financial education treatment. "Financial Education Only" is a dummy equal to 1 for an individual who was invited to the financial education classes, but did not receive either financial counseling or goal setting. "Financial Education and Goal Setting" is a dummy equal to 1 for an individual who received the financial education and goal setting treatments, but not the financial counseling treatment. "Financial Education and Financial Counseling" is a dummy equal to 1 for an individual who received the financial education and counseling treatments, but not the goal setting treatments. "All Three Treatments" is a dummy equal to 1 for an individual who received all three financial education, financial counseling, and goal setting treatments. Results are reported with robust standard errors clustered at the wave-class level. All regressions include strata dummies, where strata are defined by gender, chali (neighborhood), and microfinance borrower status. \*\*\* indicates statistical significance at the 1% level, \*\* at the 5% level, \* at the 10% level.

**Table 8: Household Insurance**

	(1)	(2)	(3)	(4)	(5)	(6)
	Bought Life Insurance in Last 6 Months		Bought Debt Insurance in Last 6 Months		Bought Health Insurance in Last 6 Months	
Any Treatment	0.018 (0.011)		0.002 (0.003)		0.001 (0.009)	
Financial Education Only		-0.004 (0.014)		0.009 (0.007)		-0.003 (0.011)
Financial Education & Goal Setting		-0.011 (0.015)		0.002 (0.006)		0.002 (0.011)
Financial Education & Financial Counseling		0.033 (0.021)		-0.003 (0.003)		0.008 (0.011)
All Three Treatments		0.054** (0.021)		-0.002 (0.003)		-0.002 (0.014)
R-squared	0.141	0.151	0.064	0.068	0.126	0.127
Number of Observations	1253	1253	1253	1253	1253	1253
Mean of Dependent Variable in Control Group	0.033	0.033	0.002	0.002	0.014	0.014
F-test p-value: Financial Education & Goal Setting = Financial Education		0.648		0.498		0.686
F-test p-value: Financial Education & Financial Counseling = Financial Education		0.106		0.116		0.409
F-test p-value: All Three Treatments = Financial Education		0.011		0.144		0.955

This table presents regression results on household insurance from an endline survey conducted ten months after the conclusion of the financial education program. The sample consists of respondents from all four waves of the study. "Any Treatment" is a dummy equal to 1 for an individual who received any financial education treatment. "Financial Education Only" is a dummy equal to 1 for an individual who was invited to the financial education classes, but did not receive either financial counseling or goal setting. "Financial Education and Goal Setting" is a dummy equal to 1 for an individual who received the financial education and goal setting treatments, but not the financial counseling treatment. "Financial Education and Financial Counseling" is a dummy equal to 1 for an individual who received the financial education and counseling treatments, but not the goal setting treatments. "All Three Treatments" is a dummy equal to 1 for an individual who received all three financial education, financial counseling, and goal setting treatments. Results are reported with robust standard errors clustered at the wave-class level. All regressions include strata dummies, where strata are defined by gender, chali (neighborhood), and microfinance borrower status. \*\*\* indicates statistical significance at the 1% level, \*\* at the 5% level, \* at the 10% level.

**Appendix Table 1: Short Term Impact on Financial Numeracy -- Individual Questions**

	(1)	(2)	(3)	(4)	(5)
	Rs 3000 cover - Rs 950 premium vs. Rs 2000 cover - Rs 900 premium	Rs 70 10 mos. from now vs. Rs 50 at 5% per month for 10 mos.	14% per month vs. 2% per week	Rs. 3000 cover - Rs 950 premium vs. Rs. 2800 cover - Rs 800 premium	Wrote budget correctly
Financial Education	-0.042 (0.035)	-0.017 (0.036)	0.044 (0.038)	-0.047 (0.036)	0.013 (0.031)
Pay for Performance	-0.023 (0.039)	0.084* (0.043)	-0.031 (0.031)	-0.010 (0.046)	-0.014 (0.031)
Interaction of Financial Education and Pay for Performance	0.069 (0.053)	-0.043 (0.054)	-0.026 (0.051)	0.009 (0.057)	0.015 (0.039)
R-squared	0.129	0.147	0.132	0.134	0.236
Number of Observations	1273	1273	1273	1273	1273
Mean of Dependent Variable in Control Group	0.425	0.691	0.700	0.686	0.734
F-test p-value: Financial Education + Interaction = 0	0.501	0.122	0.684	0.443	0.367

This table presents regression results on individual questions on financial numeracy from a survey conducted three weeks after the conclusion of the financial education program. "Financial Education" is a dummy equal to 1 for an individual who was invited to the financial education treatment. "Pay for Performance" is an orthogonal treatment and is a dummy equal to 1 for an individual who was offered a monetary incentive for correct answers to financial knowledge questions. Results are reported with robust standard errors clustered at the wave-class level. All regressions include strata dummies, where strata are defined by gender, chali (neighborhood), and microfinance borrower status. \*\*\* indicates statistical significance at the 1% level, \*\* at the 5% level, \* at the 10% level.

**Appendix Table 2: Short Term Impact on Financial Awareness -- Individual Questions**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Knows to include both income and expenses in HH budget	Knows can open an account with as low as Rs. 50	Knows about bank processing fees	Agrees that budgeting can help decrease unnecessary expenditure	Knows will get money back if bank closes	Knows insurance cover	Knows older person pays higher life insurance premium	Knows borrowing money for Diwali is unproductive loan
Financial Education	0.030 (0.030)	0.150*** (0.039)	0.124*** (0.038)	0.008 (0.018)	0.010 (0.047)	-0.020 (0.037)	0.054 (0.047)	0.198*** (0.036)
Pay for Performance	-0.012 (0.045)	-0.028 (0.038)	0.079 (0.063)	-0.031 (0.025)	0.004 (0.044)	0.018 (0.053)	-0.034 (0.064)	0.011 (0.048)
Interaction of Financial Education and Pay for Performance	0.039 (0.050)	0.031 (0.046)	-0.084 (0.066)	0.053* (0.029)	0.007 (0.054)	0.077 (0.068)	-0.003 (0.073)	-0.009 (0.061)
R-squared	0.137	0.136	0.156	0.092	0.119	0.113	0.123	0.199
Number of Observations	1004	1004	1004	1004	1004	1004	1004	1004
Mean of Dependent Variable in Control Group	0.846	0.675	0.621	0.959	0.704	0.556	0.574	0.621
F-test p-value: Financial Education + Interaction = 0	0.044	0.000	0.378	0.003	0.646	0.280	0.417	0.001

This table presents regression results on individual questions on financial awareness from a survey conducted three weeks after the conclusion of the financial education program. "Financial Education" is a dummy equal to 1 for an individual who was invited to the financial education treatment. "Pay for Performance" is an orthogonal treatment and is a dummy equal to 1 for an individual who was offered a monetary incentive for correct answers to financial knowledge questions. Results are reported with robust standard errors clustered at the wave-class level. All regressions include strata dummies, where strata are defined by gender, chali (neighborhood), and microfinance borrower status. \*\*\* indicates statistical significance at the 1% level, \*\* at the 5% level, \* at the 10% level.

**Appendix Table 3: Short Term Impact on Financial Attitudes -- Individual Questions**

	(1)	(2)	(3)	(4)	(5)
	Would suggest purchasing insurance to construction worker friend	Would suggest opening bank account to friend w/ bright child	Would suggest making HH budget	Would suggest taking out a loan to friend who rents an auto	Would suggest taking out 1 loan and buy smaller TV
Financial Education	0.101** (0.044)	0.040 (0.038)	0.201*** (0.069)	0.057 (0.044)	0.016 (0.029)
Pay for Performance	-0.028 (0.062)	0.042 (0.070)	-0.074 (0.073)	-0.016 (0.058)	-0.005 (0.042)
Interaction of Financial Education and Pay for Performance	-0.009 (0.069)	-0.018 (0.075)	0.045 (0.086)	-0.007 (0.058)	-0.001 (0.045)
R-squared	0.190	0.126	0.201	0.134	0.122
Number of Observations	599	599	599	599	599
Mean of Dependent Variable in Control Group	0.767	0.845	0.505	0.922	0.951
F-test p-value: Financial Education + Interaction = 0	0.073	0.698	0.001	0.137	0.620

This table presents regression results on individual questions on financial attitudes from a survey conducted three weeks after the conclusion of the financial education program. "Financial Education" is a dummy equal to 1 for an individual who was invited to the financial education treatment. "Pay for Performance" is an orthogonal treatment and is a dummy equal to 1 for an individual who was offered a monetary incentive for correct answers to financial knowledge questions. Results are reported with robust standard errors clustered at the wave-class level. All regressions include strata dummies, where strata are defined by gender, chali (neighborhood), and microfinance borrower status. \*\*\* indicates statistical significance at the 1% level, \*\* at the 5% level, \* at the 10% level.

**Appendix Table 4: Longer Term Impact on Financial Knowledge -- Individual Questions**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	<u>Financial Numeracy</u>		<u>Financial Awareness</u>			<u>Financial Attitudes</u>			
	Financial Return Comparison	Interest Rate Calculation	Knows to include both income and expenses in HH budget	Knows can open an account with as low as Rs.50	Knows will get money back if bank closes	Knows borrowing money for Diwali is unproductive	Would suggest purchasing insurance to construction worker friend	Would suggest opening bank account to friend w/ bright child	Would suggest making HH budget
Financial Education	-0.013 (0.041)	0.002 (0.035)	0.078*** (0.022)	0.157*** (0.036)	0.053 (0.036)	0.142*** (0.046)	0.063** (0.024)	-0.015 (0.036)	0.201*** (0.042)
Pay for Performance	-0.076 (0.056)	0.038 (0.042)	-0.027 (0.031)	-0.006 (0.044)	-0.013 (0.036)	-0.046 (0.061)	0.066* (0.035)	-0.088** (0.035)	-0.034 (0.037)
Interaction of Financial Education and Pay for Performance	0.086 (0.068)	-0.047 (0.051)	0.043 (0.036)	0.02 (0.054)	0.041 (0.049)	0.088 (0.075)	-0.083** (0.041)	0.105** (0.045)	0.033 (0.048)
R-squared	0.142	0.130	0.157	0.211	0.150	0.161	0.117	0.174	0.282
Number of Observations	983	983	983	983	983	983	983	983	1224
Mean of Dependent Variable in Control Group	0.643	0.772	0.848	0.632	0.696	0.550	0.813	0.825	0.632
F-test p-value: Financial Education + Interaction = 0	0.137	0.233	0.000	0.000	0.030	0.000	0.547	0.011	0.000

This table presents regression results on individual questions on financial numeracy, awareness, and attitudes from an endline survey conducted ten months after the conclusion of the financial education program. "Financial Education" is a dummy equal to 1 for an individual who was invited to the financial education treatment. "Pay for Performance" is an orthogonal treatment and is a dummy equal to 1 for an individual who was offered a monetary incentive for correct answers to financial knowledge questions. Results are reported with robust standard errors clustered at the wave-class level. All regressions include strata dummies, where strata are defined by gender, chali (neighborhood), and microfinance borrower status. \*\*\* indicates statistical significance at the 1% level, \*\* at the 5% level, \* at the 10% level.