Research Proposal about Financial Education, Financial Literacy and Savings among the Rural Poor in Mexico

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Introduction

Savings rates contribute to reducing poverty at the household level in many poor countries across the globe. The poor utilize savings to smooth out times of financial crises. For these reasons, savings are thought to be a means to escaping a poverty trap. Over the past several decades the concept of asset-building, encouraging savings that will lead to the purchase of financial assets, has emerged out of discussions regarding alternative methods of social and economic development for disadvantaged people. Policymakers are interested in how asset building strategies can reduce poverty vis-à-vis other traditional means-tested social safety net programs such as welfare (Sherraden, Curley, and Grinstein-Weiss, 2003). The rationale for building assets stems in part from what Amartya Sen identifies broadly as strengthening human and economic capabilities (Sen, 1985).

In personal finance, which includes knowing the importance of saving and how to save, financial literacy is thought to be good. Despite the supposed importance of financial literacy, people generally score low on financial literacy tests. Reports cite the fact that high school youth in America consistently perform poorly on financial literacy tests (National Council on Economic Education, 2005; Mandell, 2007; Americans for Consumer Education and Competition, 2001: Jumpstart Coalition, 2000; Lucy, 2002). They also fail to understand basic financial instruments (John Hancock Financial Services, 2002). For this reason, many asset building programs commonly incorporate a training aspect to their client services.

In response to the crisis that was created by mortgage payment defaults, the Treasury Department of the United States formed the Commission on Financial Literacy and Education in 2006. The role of the new agency is to create a national strategy for delivering financial education to all Americans. Furthermore the No Child Left Behind Act recommends the teaching of financial literacy in public school although the law does not provide funding for such a priority. In Mexico earlier this year, the Secretary of Mortgage and Public Credit Augustin Carstens followed the United States’ lead and began working towards a national strategy for financial education. This strategy attempts to devise both
short and long term actions that will enable the population to develop the requisite knowledge, skills and behavior that will permit them to better use financial services.¹ Castens underscores the need for financial education by pointing to the underutilization of financial services: Even though 80% of all Mexicans report knowing about the basic financial products, only about 30% use them.²

Despite the stress for financial education in our schools and workplaces, there is mixed evidence as to whether or not financial education works. On the one hand, there is evidence that financial education does indeed lead to positive consumer behavior. Research from the Federal Deposit Insurance Corporation reveals that financial literacy has a positive effect on consumer behaviors, albeit with delayed effects at six months and twelve months (FDIC, 2007). A study by Valentine and Khayum (2005) showed that the major determinants of high financial literacy are income and aspiration for asset accumulation and having some measure of earned income. There was an inverse relationship between financial literacy scores and the amount students saved per week. Bernham, Garett and Maki (1997) find that students who took a high school course in financial education tended to save more than those who did not. Similarly, Walstad and Rebeck (2005) find that financial education classes did at least have a positive impact on financial attitudes.

On the other hand, several researchers have found that financial literacy by itself does not impact consumer behaviors. Peng, Bartholomae, Fox and Cravener (2007) find that the experience of using financial instruments and taking college level financial education courses are related to savings rates. In a study of high school and college students they find that several years after completing financial literacy in high school, those participants who had taken a college level personal finance course

¹ La falta de educación financiera desató las quiebras y la crisis en EU: Carstens. La Jornada. Retrieved on October 30, 2009 from La Jornada
² La falta de educación financiera desató las quiebras y la crisis en EU: Carstens. La Jornada. Retrieved on October 30, 2009 from La Jornada
had higher levels of investment knowledge than their counterparts. Experience with financial instruments appeared to explain more of the variance in both investment knowledge and savings rates. They found no significant relationship between taking a high school course and investment knowledge. Hathaway and Khatiwada (2008) provide the most comprehensive analysis of the literature on financial education programs’ effect on consumer financial behavior. In an examination of studies of previously administered financial education programs in the United States, they conclude that training works best when they occur just before a corresponding financial event (e.g. purchase of a home or use of a credit card, etc.). The authors suggest that financial literacy efforts that are not targeted at preparing the participant for a corresponding financial event produces weak results and that causality may run both ways. Courchane and Zorn (2005) provide a causal link between financial education and consumer behavior. However, their study tested for outcomes related to credit repair, which while a key determinant of savings, is not the construct of the variable this study is concerned with. By analyzing consumer credit surveys, they linked financial knowledge to financial behavior, and then linked financial behavior (more financial self-control) to credit outcomes (less impaired credit). Overall, the authors find that data are consistent with the assumptions made by most financial education program administrators and researchers— that there exists a significantly positive causal link that runs from knowledge to behavior to outcomes.

Evidence against the importance of financial literacy also comes from studies on non-financial literacy variables. In the absence of financial literacy other factors facilitate or create barriers to saving. Interviews with low-income wage earning families living at 200% federal poverty reveal four major constructs related to the ability to save: financial vulnerability, personal attributes, social support, and resource management strategies (Hogan, Solheim, Wolfgram, Nkosi & Rodrigues, 2004). The findings support much of the prevailing policies on asset building that assumes that low-income families can save money toward a goal in the face of hardships and become asset builders.
The purpose of this study is to examine the effects of knowledge gains in financial literacy on savings rates among the working poor living in Mexico.

_Hypothesis 1_: There is a positive relationship between taking a financial education course and financial literacy gains.

_Hypothesis 2_: There is no relation between gains in pre and post test scores on gains in savings over time.

**Methods**

I. Research Design

In this study, 2000 working individuals from ten villages in Mexico are randomly selected from the PROGRESA program.\(^3\) As participants in the PROGRESA program, all individuals are of similar socioeconomic status and qualified as extremely poor by the fact that they live below a poverty line designated at $2 per day. The PROGRESA program already has baseline demographic information about the participants from household surveys\(^4\) administered by the state of Mexico so there is no need to create a survey instrument.

I. Design for Hypothesis 1: Effect of Financial Education on Financial Literacy Gains

A sample of 2000 randomly assigned subjects was divided into ten village units with 200 students each. Of the 200 students in each group, half of the subjects (100) are randomly assigned to a control group that receive no treatment (RG2). The second group takes a basic personal finance course for one and a half hours per week for six weeks for a total of eight hours of training (RG1).\(^5\) The financial education

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\(^3\) The Mexican government started, in 1998, a large conditional cash transfer program, called PROGRESA, targeted at rural Mexico. PROGRESA is targeted to specific households, who become eligible for the full range of program benefits. Targeting involves two stages. In the first stage, “marginal” rural communities are identified, using an index based on data from the national census. Among communities identified as marginal, eligibility is restricted to those communities with access to schools and public health facilities. In the second stage, the GOM performs a detailed survey of all households living in eligible marginal communities, and uses the resulting information to identify poor households, who then become eligible to participate in the program. Eligibility is to be re-assessed every three years. A consistent standard of household eligibility is applied across communities (Adato et. al, 2000).


modules are targeted at low-income consumers in Mexico and cover basic financial planning services including savings, budget, loans, remittances and insurance. Acción Internacional provides the instructors with the same curriculum and delivery style training. The student to teacher ratio is 10:1. A 31-item pretest\(^6\) is administered to half of the treatment group (RG1) and half of the control group (RG2). This was done to control for the effect of pretest.\(^7\) A posttest, which includes the exact same items as the pretest, is administered after the six-week (eight hours) training to all four groups (RG1, RG2, RG3, RG4). The pre and post tests, also provided by Acción Internacional, test for knowledge gains for the corresponding financial education modules.

Follows is a representation of the research design for testing the effect of financial education on financial literacy gains:

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\begin{array}{ccccccc}
\text{RG1} & O1 & X & O2 & \\
\text{RG2} & O3 & - & O4 & \\
\text{RG3} & - & X & O5 & \\
\text{RG4} & - & - & O6 & \\
\end{array}
\]

I. Design for Hypothesis 2: Effect of Financial Literacy Gains on Saving Rate

Observations are made of the savings patterns of the study’s participants to test for delayed effects of the financial literacy gains on savings at different points in time: 6 months, 12 months, 24 months, 36 months and 48 months. Follows is a representation of the research design that tests for the effect of financial literacy gains on savings rates (m. = months after completion of financial education training).

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\begin{array}{ccccccccccc}
\text{Experiment (RG1)} & O1 & X & O2 & O3 & O5 & O6 & O7 & O8 & \\
\text{Control (RG2)} & O9 & - & O10 & O11 & O12 & O13 & O14 & O15 & \\
\end{array}
\]

\(^6\) For a brief description of the pre and posttest visit Acción Internacional: http://www.accion.org/Page.aspx?pid=1637
II. Measuring Financial Knowledge and Savings

In order to test for the effect of financial literacy gains on savings, first I look to see if financial education causes gains in financial literacy. Then, I look at the link between increased post test scores and savings rates.

Thus, for the first statistical test the independent variable (IV1) is completion of financial education training. All treatment group participants attend all financial education courses. The dependent variable (DV1) is mean standardized z-scores.

For the second test, the independent variable (IV2) is the mean gains in standardized z-scores of the pre-post test groups. The dependent variable (DV2) is mean monthly savings measured in peso units per household per month at 2006 USD prices. Permission is given by participants to share information about their savings at their financial institution. Only deposits made to formal financial institutions such as banks and credit unions are measured. Therefore unreported or existing informal savings methods are not captured.

III. Limitations of Research

The most obvious confounding variables in this study are gender, education level, and health and nutrition status. Education can affect ability to show gains in both the pre and post-tests. Health and nutrition can affect a household’s ability to earn and save; some reasons include the presence of only one working adult or the need to pay costly medical bills. Women tend to have lower levels of assets than men.

There are also inherent problems with testing for financial literacy. Some confounding variables include those that are inherent to the broader context of the type of education system. A critique of the modern educational process in settings that are modeled after the North American education structure reveals a structure that embodies capitalist societal structures. In North America, some weaknesses in
the education system are that it fails to provide equal opportunities for youth of different cultural contexts. Evidence for these economically originated education problems include standardized testing biases, teacher expectation biases, administrator and teacher conflicts, political administrator assessments, and inequitable resource allocations (Lucey, 2002).

This study endeavors to minimize the effects of confounding variables such as those described above through a carefully devised research design: First, to decrease the effects of confounding variables of gender, health, nutrition, education, random selection is used to select 2000 subjects for participation in this study. Second, classroom materials and the assigned teacher are the same for all classes and do not affect the independent variable teaching quality is presumed to confound. Third, only subjects who are of the same socioeconomic level (extremely poor and qualify for PROGRESA cash transfer program) are included so there is no confounding effects on the dependent variable of savings. Fourth, statistical control (z-tests) is used to adjust for the pretest and posttest scores. Fifth, a Simon four-group design is employed in the first test (effect of financial training on financial literacy) to check on the possible effects of pretesting is used. Sixth, the pre and post test is thoroughly piloted before implementation in this study. Seventh, the study uses a financial education curriculum designed to meet the learning and practical needs of the Mexican working poor. Last, the instructor is trained to avoid teacher expectation bias.

Nevertheless, there are still other factors that cannot be controlled by this study, such as periodic economic fluctuations that lead to decreased incomes and the varying distance of financial institutions to the rural areas where participants live. Moreover, there is most likely heterogeneity within the sample group that is related to varying ability to save, which includes but is not limited to access to credit, employment status, income level, asset ownership, numeracy and literacy levels and prior experience with financial instruments.

Data Analysis/Results
The ‘results’ section of the paper is divided into three sections: 1) Descriptive Statistics, 2) Financial Education and Financial Knowledge Gains, 3) Financial Knowledge Gains and Savings. For all parametric tests, statistical significance (critical p value) is .05.

First, I present descriptive statistics about the sample group overall. This section will describe the control participants and treatment participants in terms of baseline demographic information, post test scores and savings rate. Measurements of central tendency (range, mean, mode) and dispersion (variance, standard deviation, interquartile range) will be presented. All randomized groups are expected to exhibit similar descriptive statistics in terms of education level, health, nutrition, gender.

Second, I present the association between completing financial education training and increases in post test scores (financial literacy gains) using an ANOVA for all four groups. The null hypothesis is $H_0=\mu_{RG1}=\mu_{RG3}=\mu_{RG4}=\mu_{RG4}$.

Third, I present the association between increase in scores and increase in household savings over time. This is investigated using a T-test. The null hypothesis is $H_0=\mu_{RG1}=\mu_{RG2}$.

**Anticipated Outcomes**

I anticipate that there is causation of financial training on financial literacy. I also anticipate even while there are gains in financial literacy, this alone does not cause increases in savings rates. If such anticipated outcomes were confirmed, then I would recommend that Progresa does not include financial literacy in its poverty reduction programs because it has no effect on increasing savings.

**Significance of the Proposed Research**

Due to the contradictory evidence on whether or not and under which optimal circumstances financial education works to facilitate savings rates, findings from this study will be instrumental in informing the debate on the usefulness of financial education. Given the rural and poor characteristics of the population represented in this study, results from this study can be generalized to other low-income countries’ rural poor populations, where applicable. In terms of education, this study should
inform policymakers and practitioners of poverty reduction programs in low-income countries of whether or not to provide financial education training to program beneficiaries.

References


