Policy-effective Financial Knowledge and Attitude Factors in Latin America

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Abstract

In this research we implement a technique that produces measures of financial knowledge and attitudes by combining variables with weights that capture their impact on financial behavior variables, thus providing guidance to policy design. We use data gathered by CAF-Development Bank of Latin America in Bolivia, Colombia, Ecuador, and Peru. It is the first time that this technique has been used in a cross-country setting. We show that the composition and the weight vary from one country to another. However, the importance of attitude variables stands out in all countries, especially regarding the setting of long-term goals by individuals.

Keywords: financial inclusion, financial literacy, financial knowledge, factors, scores.

JEL classification: D83, G29, A20, D12, D14, I28.

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1. INTRODUCTION

The promotion of welfare enhancement through access to and adequate use of financial products by citizens is a worldwide goal. In fact, 6 of the 17 United Nations Sustainable Development Goals to be achieved by 2030[1] explicitly include financial services in the list of targets they rely on. There are several supply issues concerning the markets that provide such services, but on the

[1] See <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>. The goals–and targets by 2030–that rely partially on financial services are the following. *Goal 1:* No poverty–ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, and ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology, and financial services (including microfinance). *Goal 2:* No hunger–double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets, and opportunities for value addition and non-farm employment. *Goal 3:* Good health and well-being–achieve universal health coverage, including financial risk protection, access to quality essential healthcare services and access to safe, effective, quality, affordable, and essential medicines and vaccines for all. *Goal 5:* Sex equality–undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance, and natural resources, in accordance with national laws. *Goal 8*: Decent work and economic growth–promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity, and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services. Strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance, and financial services for all. And, *Goal 9:* Industry, innovation and infrastructure–increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets. Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological, and technical support to African countries, least-developed countries, landlocked developing countries and small island developing states.

demand side financial literacy[2] is the key element that enables the pursuit of these objectives.

The assessment of the financial literacy of a population generally relies on the use of surveys, with sets of questions not only about financial knowledge but also about attitudes. The emerging literature seems to have reached some degree of consensus about which are the main facets of financial literacy to assess. Researchers, governments, and other stakeholders have ubiquitously employed the set of questions stemming from Lusardi and Mitchell (2008).

Once in agreement about the dimensions to assess, it is natural to look for benchmarks that make adequate diagnosis possible, with the aim of producing policy recommendations. A natural strategy for finding these benchmarks is the comparison of different populations. In 2009, a group of specialists from the OECD International Network of Financial Education (OECD/INFE) developed the first version of a survey aimed at measuring the degree of financial education in populations of different countries. The core of the survey inquiries about financial knowledge, attitudes, and behavior regarding several aspects of financial education, and includes questions about the household budget, money management, short- and long-term financial planning, as well as the financial products choice process. The initial number of 14 countries collecting this data increased to 30 in 2015, and countries and researchers that pursue independent data gathering consistently employ the toolkit as a starting point.

Figure 1 reproduces a comparison of financial knowledge among the countries, from the first OECD data collection. The scale used there for comparison is the percentage of surveyed individuals in each country who answered at least six of eight questions correctly.[3] This score conveys a comparison between countries in a simple manner, and readers may grasp where they are likely to find the gravest problems in terms of financial knowledge. Scales such as this one are widespread in the literature and have the priceless characteristics of being simple and transparent.

However, in this paper, we argue for the need for a different type of measurement when reorienting our goal from making a general

[2] See Lusardi and Mitchell (2014) for a definition.

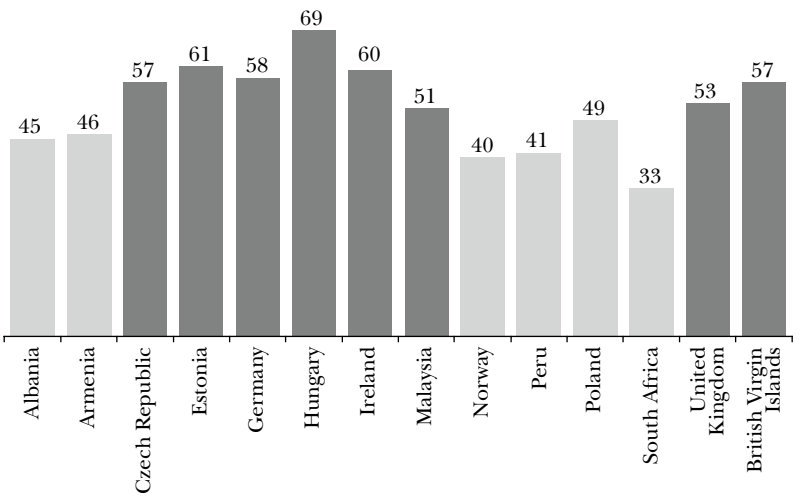
[3] Actually, a correct answer to the compound interest rate question was only taken into account if the individual had a correct answer in the (easier) simple interest rate question. We also adopt this strategy below.

diagnosis to crafting policy that applies to a specific population. When we face the problem of spending limited resources in order to enhance a population's financial knowledge, or to improve its financial attitudes, we expect this to have an impact on adequate use of financial services,[4] because in the end this should improve welfare (such as the adequate use of financial products by small farmers and entrepreneurs). Thus, we have developed a technique that uses the predicted impact of financial knowledge and financial attitude variables on behavior to assign the weights that they should have in measures used for policy purposes. This is carried out using a system of equations to predict several behavioral outcomes that are regarded as important goals.

Figure 1

FINANCIAL KNOWLEDGE: PERCENTAGE SCORING SIX OR MORE OUT OF EIGHT QUESTIONS

Percentages



Source: Atkinson and Messy (2012). Lighter shaded columns indicate countries where fewer than 50% achieved a score of six or more.

[4] These elements also affect the economic cost of access to financial services.

There is nothing intrinsic in the questions that causes the different pieces of knowledge behind the comparison in Figure 1 to have the same effect on behaviors that policymakers wish to promote. We provide evidence that this is not the case, and that these effects change from country to country. Consequently, addressing policy design in the context of internationally comparable scales seems to be a suboptimal usage of information and policy funding resources. The main questions may be the same, but their effects on behavior–and thus welfare–vary from one country to another.

Yet the literature that investigates the impact of financial literacy on the behavior of particular populations seems to be reluctant to forsake some simplicity in order to obtain measures that are better predictors of behavior, and that could shed light on the selection of specific contents of educational interventions that could yield the most beneficial behavioral change.

In previous work, we implemented a new technique to address this issue, using Brazilian data gathered using the OECD-INFE toolkit together with some additional questions. Results implied that the design of financial literacy programs should consider the effectiveness of variables reflecting financial knowledge in predicting policy objectives, especially given that they are quite heterogeneous and that several variables do not seem to have an effect on financial inclusion at all.

In this study, we use this technique to explore data gathered by the CAF-Development Bank of Latin America[5] from four other Latin American countries and explore the differences and similarities among them. We find that the knowledge and attitude variables combine differently when correlated with behavioral factors. However, there are recurrent attitude variables that stand out in more than one country.

The paper continues as follows. In Section 2, we provide a brief literature review, concentrating on measures and methodological techniques. In Section 3, we explain the econometric modeling we use to bring policy objectives into the computation of financial knowledge and attitudes factors. Section 4 presents the results, and we conclude our study in Section 5.

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[5] Data gathered in 2013-2014, *Encuesta de Medición de Capacidades Financieras en los Países Andinos*, see <http://scioteca.caf.com/handle/123456789/743>.

2. LITERATURE

Lusardi and Mitchell (2014) provide a comprehensive survey of the literature concerning several aspects of financial literacy. Our work relates to the literature that investigates whether high financial knowledge and positive financial attitude measures predict desirable behavioral outcomes. In short, several studies show that the level of financial knowledge (measured in different ways) relates to holding precautionary savings, planning for retirement, using less costly financing, and avoiding fees.

In this Section, we focus on another aspect: How the literature translated responses to survey questions into measures of knowledge and attitude. In the case of financial knowledge, there are two direct ways of doing this. First, authors have used a dummy variable that takes on the value of one if the individual gets all the questions right and zero otherwise. For example, Lusardi and Mitchell (2011)[6] take this approach. Since this is generally applied to a short list of questions–the first three in Lusardi and Mitchell (2008) have become classics–that address the pillars of financial knowledge, it makes sense to give zero to anyone who is unable to get all the questions right. The main caveat is that while everyone assigned the score of one gives the exact same answers, there is a heterogeneity in the group receiving zero that is lost when using this method of measurement.

This calls for the other widely applied method of turning answer profiles into scores: giving one point for every question properly answered. Atkinson and Messy (2012) and Finke, Howe and Huston (2011) compute measures based on this scoring method.[7] This approach preserves heterogeneity and is more appealing to surveys with longer lists of questions. Thus, an individual who scored a zero could be separated from an individual who scored a nine, just short of perfect, on a ten-question survey. The problem with this way of computing scores is that all questions are weighted equally. As such, everyone that gets four correct answers is attributed the same score, no matter which subset of financial knowledge the individual has.

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[6] See Lusardi and Mitchell (2014), Table 2, for a list of papers that employed this approach around the world.

[7] Hung, Parker and Yoong (2009) provide a table including several papers and the scales they used.

The same body of literature provides examples of this, as we show in Table 1. These papers analyze the relation between retirement planning and financial literacy. All of them use three questions that assess knowledge of interest rates, inflation, and risk diversification, then compute both of these common scales and use them as explanatory variables in regressions.[8] Additionally, they perform the same regressions adding separate dummies for the right answer in each of the questions. Assume for a moment that you are a policymaker in one of these countries, concerned with promoting retirement planning in the population and that there is a tight budget constraint. You might be inclined to invest resources in improving knowledge related to only one of these themes. It might be that this particular population knows little about inflation and that it only takes a relatively cheap tool, such as a media campaign, to address the deficiency effectively. A look at the individual question estimates could prevent what would probably be a policy mistake, since people that know relatively more about inflation do not perform better in retirement planning than those that do not, holding everything else constant.[9] Unfortunately, many papers do not present disaggregate-question coefficients.

Still, a line of reasoning could be that these questions only capture a noisy signal from an inherent unobservable stock of financial literacy, and thus the analysis of individual questions does not result in anything meaningful. However, the common measures we presented before are not fit for these analyses. Although less frequent, some studies have used factor analysis as way to group questions that are correlated, for example in Lusardi and Mitchell (2007b) and Van Rooij et al. (2011).[10] This is useful since it avoids arbitrarily summarizing points and, at the same time, can indicate whether the answers result from similar or different pieces of underlying knowledge. However, this approach emphasizes commonality among

[8] They also perform regressions that deal with the endogeneity issue, but then we do not have the coefficients of the separate questions to make this point.

[9] In the case of all right criterions, one could argue that the different pieces of knowledge matter in the presence of one another. To pursue the testing of this hypothesis, one should compare the all right dummy results with those single question dummies plus their interactions.

[10] Huston, Finke and Smith (2012) use this approach to compute a financial sophistication proxy.

Table 1

ORDINARY LEAST SQUARES REGRESSIONS OF RETIREMENT PLANNING ON FINANCIAL LITERACY VARIABLES

Reference	*Alessie, van Rooij, Lusardi (2011)*	*Lusardi and Mitchell (2011)*	*Bucher-Koenen, and Lusardi (2011)*	*Agnew, Bateman and Thorp (2013)*
Country	*Netherlands*	*United States*	*Germany*	*Australia*
Coefficients				
(1) All correct criterion	0.126[a]	0.091[a]	0.06	0.123[a]
(2) Count of right answers criterion	0.101[a]	0.043[b]	0.04[b]	0.059[a]
(3) Separate dummies for right answers (included simultaneously)				
Interest question	0.173[a]	0.009	0.01	0.054
Inflation question	−0.00621	0.042	0.04	−0.022
Risk diversification question	0.142[a]	0.078[b]	0.06	0.135[a]

Note: Ordinary least square estimates with controls. [a]$p<0.01$, [b]$p<0.05$.

variables, which could be a drawback if we are interested in behavioral outcomes. This is because if all variables are highly correlated (which is good as far as factor analysis is concerned), then other uncorrelated dimensions might add discriminatory and explanatory power.[11] Behrman et al. (2012) made interesting progress on this issue, proposing a measure of financial knowledge based on a two-step procedure: The first step generates weights that more severely punish the individuals who get something wrong that most others get right, while the second uses principal components analysis to consider correlations between questions.

[11] One alternative for addressing this issue, in line with what we propose in this paper, would be to use canonical correlations to produce knowledge and attitude factors by maximizing correlation with behavior outcomes.

We propose that it is more useful to have a measurement of financial knowledge that can combine different and potentially uncorrelated indicators of knowledge, and weight them according to their importance in predicting behavior.

3. METHODOLOGY

3.1 Model and Econometric Implementation

In order to illustrate our approach, consider again the second column of Table 1. We argued that the sum of points of all three questions is not an adequate measure if we are to design an intervention on financial knowledge. However, the estimation with separate dummies suggests a natural indicator: Give weights according to the estimated coefficients to the variables that are significant and exclude the variable that is not. Thus, we would obtain a measure (I_K) given by:

$$I_k = 0.173\mathrm{D}_{\text{interest}} + 0.142\mathrm{D}_{\text{diversification}},$$

where $\mathrm{D}_{\text{interest}}$ assumes a value of one if the interest question is answered correctly, and $\mathrm{D}_{\text{diversification}}$ is the analogous variable for risk diversification.

What we do is to transfer this interpretation to a context with several policy objectives instead of only one.[12] The start point is an unrestricted system with equations similar to those used in the papers referred in Table 1. In system 1, there are m equations, one for each of the financial behavior goals, y_i. The regressors are a vector of ones, a matrix of demographic controls *(D)*, and a matrix of attitude variables *(A)*. In order to simplify the explanation of the technique, we show the knowledge variables, k_j, directly, instead of gathering them in a matrix *K*. The disturbances are represented by ε_i.

[12] In Garber and Koyama (2016), we show that the technique used in the present study can be viewed as a way to simplify the policymakers' decision-making process by rendering the subjective weight attributed to different financial inclusion policy goals irrelevant. As a result, all efforts can be directed to a simple cost-benefit analysis of the different contents that could be a focus of financial literacy programs and interventions.

1

$$y_1 = C_{0,1} + D\beta_{D,1} + \left[\beta_{k,1,1}k_1 + \beta_{k,1,2}k_2 + \beta_{k,1,3}k_3 + \ldots + \beta_{k,1,J}k_J\right] + A\beta_{a,1} + \varepsilon_1$$
$$y_2 = C_{0,2} + D\beta_{D,2} + \left[\beta_{k,2,1}k_1 + \beta_{k,2,2}k_2 + \beta_{k,2,3}k_3 + \ldots + \beta_{k,2,J}k_J\right] + A\beta_{a,2} + \varepsilon_2$$
$$\vdots$$
$$y_m = C_{0,m} + D\beta_{D,m} + \left[\beta_{k,m,1}k_1 + \beta_{k,m,2}k_2 + \beta_{k,m,3}k_3 + \ldots + \beta_{k,m,J}k_J\right] + A\beta_{a,m} + \varepsilon_m$$

This would result in a different I_k index for each outcome. In order to obtain only one weight for each of the variables considered, we need to impose restrictions on the estimation. The ideal result would be a system like 2, in which we have–in the brackets–the same linear combination of the knowledge variables in all equations, with an unrestricted coefficient multiplying in each of them[13]. We call this linear combination a policy-effective knowledge factor.

2

$$y_1 = C_{0,1} + D\beta_{D,1} + g_1\left[f_1 k_1 + f_2 k_2 + f_3 k_3 + \ldots + f_J k_J\right] + A\beta_{a,1} + \varepsilon_1$$
$$y_2 = C_{0,2} + D\beta_{D,2} + g_2\left[f_1 k_1 + f_2 k_2 + f_3 k_3 + \ldots + f_J k_J\right] + A\beta_{a,2} + \varepsilon_2$$
$$\vdots$$
$$y_m = C_{0,m} + D\beta_{D,m} + g_m\left[f_1 k_1 + f_2 k_2 + f_3 k_3 + \ldots + f_J k_J\right] + A\beta_{a,m} + \varepsilon_m$$

The drawback of substituting 2 for 1 is that some of the many restrictions implied by 2 might be rejected by the data. In order to test them explicitly, we use an iterative procedure to specify the model that is as close as possible to 2, without the imposition of restrictions that are rejected. We start with an estimation using a system that includes only controls and search for the knowledge variables that would be significant in the largest possible set of equations. Then we test if the coefficients of these variables are proportional along equations,[14] which allow us to define a factor. Subsequently, the inclusion of other knowledge variables in this factor is tested, until there are no variables left which could be included in the factor and

[13] Identification requires fixing one of these coefficients.

[14] That is,

$$H_0 : \beta_{k,1,1} / \beta_{k,2,1} = \beta_{k,1,2} / \beta_{k,2,2} \;\; ,\ldots, \; \beta_{k,1,1} / \beta_{k,m,1} = \beta_{k,1,2} / \beta_{k,m,2}.$$

would have a significant coefficient in it. We allow the formation of more than one factor, and–after considering all the knowledge variables–we then start the process with attitude variables.

We estimate the system using nonlinear seemingly unrelated regression (SUR), with robust standard errors. The testing and imposition of restrictions in the estimation make the simultaneous estimation of the system necessary, thus there is no reason not to explore efficiency gains. Although we nest our approach in a linear probability model, a nonlinear estimator is necessary to obtain the factors, since there is coefficient multiplication. This allows us to directly implement Wald restriction tests to verify if the coefficients of a knowledge (or attitude) variable are proportional to the coefficients of another variable along the equations of the system.

There is no theoretical reason for choosing a linear probability structure instead of a logit one. Both structures are widely used in financial literacy applications. However, the linear probability model requires fewer computational resources and allows the instrumentation by three stages least squares, instead of requiring a bootstrap to deal with the generated regressor problem, as implemented in Garber and Koyama (2016).

Therefore, the results we present in Section 4 can be divided into two groups, one containing the list of variables that can be grouped into a policy-effective factor along with their coefficients (corresponding to the f_j in system 2), and the other being the list of target variables that they affect, along with the coefficients that measure these impacts (the g_i).

3.2 Variables

In this subsection, we present the variables from the dataset used as dependent (policy targets), controls, knowledge and attitude variables.

Table 2 shows the dependent variables for each equation. In order to choose the behaviors that we could employ as dependent variables when considering all four countries together, we required that at least a certain number of individuals exhibited that behavior. We lowered this threshold to 4% in order to have 12 equations. The least frequent behavior we included is borrowing from loan sharks.

Table 3 shows the controls included in *D*. Since there are several controls, we exclude them from those equations where they are not

Table 2

DEPENDENT VARIABLES

Variable	*Description*	*Percentage of observations*
Savings, last 12 months	The individual has saved in the preceding 12 months.	59
Savings, last 12 months, in financial sector	The individual has saved in the preceding 12 months in the financial sector. Includes: • Purchase of financial investment products other than pension funds. • Leaving some money in a savings or checking account. • Making deposits in a checking account or a term deposit. • Frequently depositing money in a savings account.	28
Prepared	If the individual lost his or her main income, his or her living expenses could be covered for at least three months.	17
Budget	The individual has a budget.	56
Exact budget	The individual has an exact budget.	18
Binding to budget	The individual has a budget and always follows it.	30
Comparison	In the latest choice of a financial product, the individual compared various options (either from different financial institutions or within one).	43
Checking account	The individual has a checking account.	9
Savings account	The individual has a savings account.	34
Loan shark	The individual owes money to a loan shark.	4
Credit card	The individual has a credit card.	34
Consumption credit	The individual has a consumption loan, including vehicles (some heterogeneity between countries).	23

Table 3

CONTROLS

Variable	*Description*
Insufficient income	Dummy indicating individuals whose income has been insufficient to cover expenditure at least once in the previous 12 months
Social program	Dummy indicating individuals who participate in some social program
Stable income	Dummy indicating individuals who consider their income stable
Male	Dummy indicating males
Age, Age^2	Age and squared age
Education	A set of 12 dummies for educational level
Number of children	Number of children in the household
Presence of children	Dummy indicating the presence of at least one child in the household
Number of adults	Number of other adults in the household
Presence of adults	Dummy indicating the presence of other adults in the household
Marital status	A set of seven marital status dummies
Socioeconomic level	A set of socioeconomic level dummies for each country
Income level	A set of income level dummies for each country
Employment status	A set of 12 employment status dummies
Community description	A set of four dummies: rural, small urban, medium urban, and large urban

statistically significant. The reason for this is twofold. First, it makes the nonlinear SUR (NLSUR) computationally lighter by reducing the equation. Second, it produces some variables that may be used as instruments. Given that endogeneity in our equations is a major concern, after defining the knowledge and attitude factors, we re-estimate the system using three stages least squares and the full set of controls as instruments. Although these are not variables specifically designed to work as instruments, the excluded ones allow identification of the coefficients. In addition, most researchers accept these variables as exogenous, given that they frequently use them as controls. In these estimations, all factors–along with other knowledge and attitude variables that enter the equations–are regarded as endogenous. In an additional estimation, we allow the instrumented factors to enter all the equations since we wish to check if the documented[15] downward bias in the estimations without instrumentation rendered the coefficients not significant in some equations. Thus, when we present the results corresponding to the g_i in system 2, we show three estimates: the first one endogenous, the second instrumenting the endogenous specification, and the third allowing instrumented factors to enter all equations.

Table 4 presents the financial knowledge questions in the survey, and the names we assign them for ease of reference. We convert the answers into variables by assigning 1 if the answer is correct and 0 otherwise, including the cases with no answer. Although we acknowledge that the answer "I do not know" is different from a wrong one, it is complex to interpret what this difference means in term of policy. That is, we should know more about the effect of improving confidence on taking the wrong decisions instead of avoiding choice.

The attitude variables are based on eight statements. The surveyed individuals are asked to say how much they agree with them, on a scale that goes from 1 (completely disagree) to 5 (completely agree). The variables are computed as increasing from 1 (most undesirable answer) to 5 (most desirable answer). In order to make all the variables increase with the desirability of the answer, some of the original scales were inverted. Table 5 shows the statements and indicates which the inverted ones are.

[15] See Garber and Koyama (2016) for a brief review of this topic.

Table 4

KNOWLEDGE VARIABLES

Variable	*Question*
Division	Imagine that five brothers are given a gift of $1,000. If the brothers have to share the money equally, how much does each one get?
Inflation in practice	Now imagine that the brothers have to wait for one year to get their share of the $1,000 and inflation stays at X percent. In one year's time will they be able to buy: (four alternatives)
Interest definition	You lend $20 to a friend one evening and he gives you $20 back the next day. Has he paid any interest on this loan? (Yes/No)
Simple interest	Suppose you put $100 into a savings account with a guaranteed interest rate of 2% per year. You do not make any further payments into this account and you do not withdraw any money. How much would be in the account at the end of the first year, once the interest payment is made?
Compound interest–double correct	And how much would be in the account at the end of five years? (four alternatives, only considered correct if the previous question was correct)
Risk and return	An investment with a high return is likely to be high risk (True/False).
Inflation definition	High inflation means that the cost of living is increasing rapidly (True/False).
Diversification	It is less likely that you will lose all your money if you invest it in more than one place (True/False).

Table 5

ATTITUDE VARIABLES

Variable	*Statement*
Conscientious consumer	Before I buy something I carefully consider whether I can afford it.
Carpe diem	I tend to live for today and let tomorrow take care of itself (inverted scale).
Impatient	I find it more satisfying to spend money than to save it for the long term (inverted scale).
Responsible	I pay my bills on time.
Bold	I am prepared to risk some of my own money when saving or making an investment.
Conscientious in finance	I keep a close personal watch on my financial affairs.
Planner	I set long-term financial goals and strive to achieve them.
Spender	Money is there to be spent (inverted scale).

4. RESULTS

In this Section, we present the results of the country-level factor specification and estimation. The weights of the variables included in each factor should be understood as relative weights, since their levels depend on the equation that is chosen to fix the factor coefficient as a unit, for normalization and identification. After the estimation, all factors were standardized and represented on a scale of 0 to 100. For this standardization, the theoretical (not necessarily equal to the observed) minimum and maximum values of the factors are used to center and rescale values.

As we show below, in two countries (Peru and Bolivia) the methodology combines variables into factors that seem to capture most of the impact of financial knowledge and especially of financial

attitudes on financial behaviors. In Ecuador and Colombia, only a factor of attitudes combining two variables is found, and it is significant in a smaller number of equations. This does not invalidate the analysis, since it reflects the characteristics of the different populations. It indicates, however, that policymakers in these countries will not have the availability of a single factor that affects several behavior variables simultaneously, as far as our technique is concerned. Thus, these policymakers face the problem of defining which financial behavior variables are the most important ones when they design interventions.

For all of the countries, we analyze how the discovered factors vary along observable characteristics. However, we should point out that for Ecuador and Colombia this analysis is less important, since we cannot incorporate most of the information about attitudes. At the conclusion of this Section, we comment on findings of regular patterns among the countries.

4.1 Peru

In the Peruvian dataset, the technique results in the specification of only one attitude factor. Table 6 displays the included variables and their weights.

Table 6

PERU: ATTITUDE FACTOR

Variable	*Weight*
Bold	0.006[b]
Conscientious at finance	0.041[a]
Planner	0.008[b]

[a] p-value <1%, and [b] p-value <5%.

The computed Peruvian financial attitude factor is significant in the equations that explain several financial behavior outcomes, as can be seen in the second and third columns of Table 7.

Table 7

PERU: ATTITUDE FACTOR

Equation	*NLSUR coefficient*	*NLSUR* p-*value*	*3SLS coefficient*	*3SLS* p-*value*	*3SLS-all coefficient*	*3SLS-all* p-*value*
Savings, last 12 months	1 (fixed)		3.382	<0.001	3.626	0.000
Savings, last 12 months, in financial sector	0.455	0.013	2.009	0.008	2.364	0.002
Prepared	–		–		1.672	0.033
Budget	0.735	0.012	2.139	0.009	2.397	0.004
Exact budget	–		–		0.376	0.003
Binding to budget	0.736	0.001	2.088	0.000	2.133	0.000
Comparison	0.793	0.001	0.692	0.162	0.812	0.103
Checking account	–		–		0.902	0.045
Savings account	–		–		0.499	0.474
Loan shark	−0.291	0.049	0.028	0.562	0.025	0.611
Credit card	0.573	0.002	0.524	0.028	0.551	0.021
Consumption credit	–	–			0.154	0.811

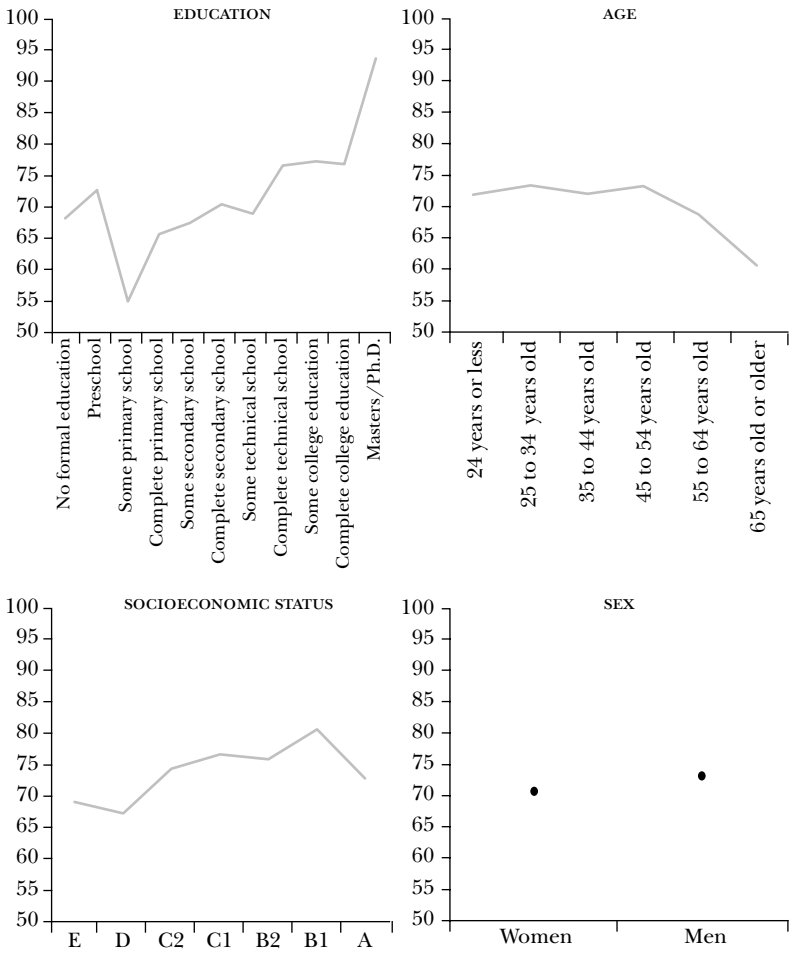
First stage: F(52, 964) = 3.02, Prob.>F = 0.000
Note: NLSUR stands for nonlinear SUR, and 3SLS for three stages least squares.

We analyzed how this factor varies with the sampled individuals' characteristics. It generally increases with education level, although this is not true for the two lowest levels, for which we have a very small sample. It also seems to increase with social class. In terms of sex, the factor is on average higher for males. Finally, the factor exhibits a mild inverted U-shape with respect to age. Figure 2 gives details of these features.

Figure 2

PERU: ATTITUDE FACTOR

Average along descriptive variables



Going back to Table 7, in the fourth and fifth columns we display the results of the three stages least squares (3SLS) estimation. Some interesting features arise. As expected, the comparison of columns two and four indicates downward bias estimation for most of the coefficients. Unfortunately, the three stages least squares estimation loses precision in the coefficient of the loan sharks and on the comparison equations, rendering the coefficient insignificant. Analysis of the last two columns, which consider the inclusion of the instrumented factor in all equations, shows that this downward bias results in the exclusion of the attitude factor from some equations in the endogenous version: The instrumented regression indicates a positive and significant coefficient in three extra equations.

In Table 8, we show the *p*-value of the coefficients of knowledge and attitude variables that do not belong in factors, but are significant at the 10% level in some equations. None of them seem to affect many variables, except for simple interest. Taking as a reference the 3SLS estimation with the inclusion of the instrumented factor in all equations, the attitude factor is significant in eight equations, thus affecting most of the financial behavior variables. This makes the attitudes pertinent to the questions in Table 6 particularly interesting for interventions. Furthermore, although the costs of addressing these topics should be assessed in terms of benefits, the level of being conscientious at finance stands out from the other two attitudes in the factor: The coefficient is more than five times as large as those of the other variables.

4.2 Bolivia

In the Bolivian dataset, it was not possible to estimate the equation for personal credit. Two factors were found, one for knowledge and another for attitudes. The variables included in the knowledge factor and their weights are displayed in Table 9.

Variables compound interest (double correct) and inflation definition have a higher estimated weight and are more statistically significant than the others. The estimated knowledge factor coefficients in the behavior equations are shown in the second and third columns of Table 10.

The Bolivian financial knowledge factor increases with social class and formal education (except at the lowest level). It is slightly higher for men than women. In terms of age, the factor displays a

Table 8

PERU: *P*-VALUES OF KNOWLEDGE AND ATTITUDE VARIABLES NOT INCLUDED IN FACTORS

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*
Division			0.041									0
Inflation in practice		0.051									0.01	
Interest definition							0.092					
Simple interest		0.018		0.001	0.061				0.017			
Compound interest–double correct		0.031						0.004				
Risk and return			0.016									
Inflation definition												0.033
Diversification									0.019			
Conscientious consumer			0.089									

Table 8 (cont.)

PERU: *P*-VALUES OF KNOWLEDGE AND ATTITUDE VARIABLES NOT INCLUDED IN FACTORS

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*
Carpe diem (inverted scale)			0.048						0.061			
Impatient (inverted scale)			0.002									
Responsible												
Bold												
Conscientious at finance												
Planner												
Spender (inverted scale)	0.024					0.044						0.049

Note: Shaded variables enter the factor. 1 stands for savings last 12 months; 2, savings last 12 months in the financial sector; 3, prepared; 4, budget; 5, exact budget; 6, binding to budget; 7, comparison; 8, checking account; 9, savings account; 10, loan shark; 11, credit card; and 12, consumption credit.

Table 9

BOLIVIA: KNOWLEDGE FACTOR

Variable	*Weight*
Division	0.029[c]
Compound interest–double correct	0.057[b]
Risk and return	0.027[c]
Inflation definition	0.042[b]

[a] *p*-value <1%, [b] *p*-value <5%, and [c] *p*-value <10%

Table 10

BOLIVIA: KNOWLEDGE FACTOR

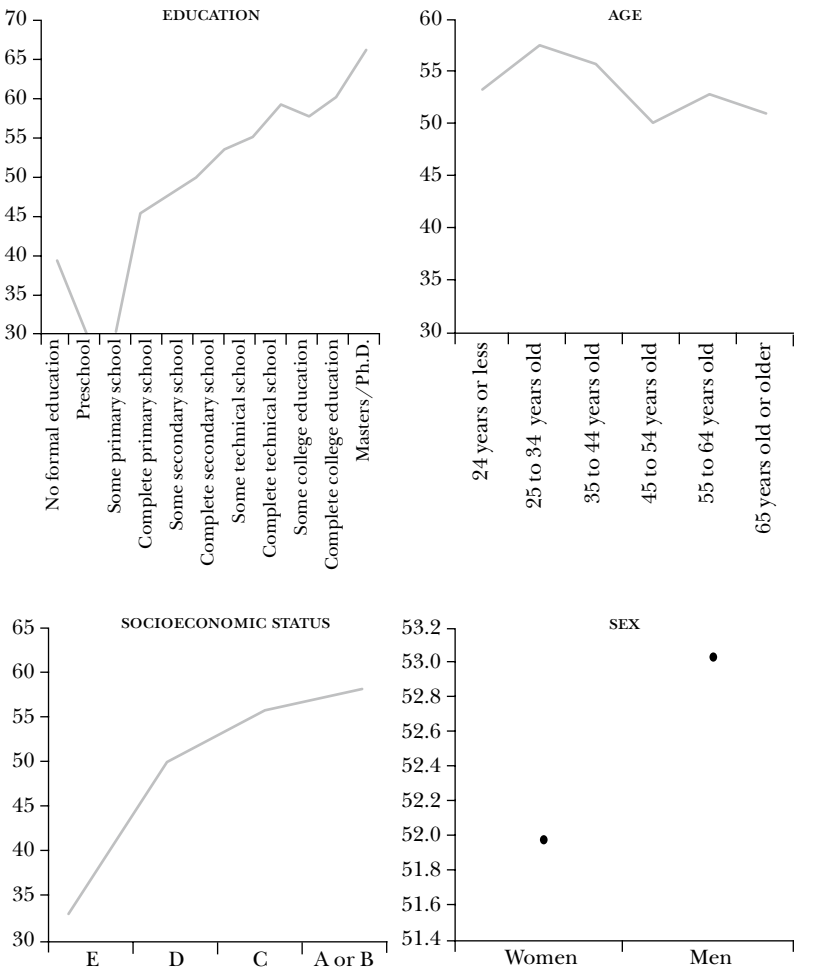
Equation	*NLSUR coefficient*	*NLSUR* p-*value*	*3SLS coefficient*	*3SLS* p-*value*	*3SLS-all coefficient*	*3SLS-all* p-*value*
Savings, last 12 months	0.989	0.035	2.959	0.054	3.393	0.028
Savings, last 12 months, in financial sector	1 (fixed)		1.641	0.472	2.562	0.270
Prepared	–		–		2.736	0.065
Budget	2.881	0.021	3.071	0.049	3.341	0.033
Exact budget	1.680	0.027	2.551	0.052	2.423	0.066
Binding to budget	1.766	0.029	2.626	0.095	2.788	0.077
Comparison	–		–		2.712	0.182
Checking account	–		–		1.656	0.201
Savings account	0.726	0.059	−0.866	0.696	0.035	0.988
Loan shark	–		–		0.199	0.623
Credit card	–		–		1.798	0.272

First stage: F(49, 1,056) = 4.05, Prob. > F = 0.0000.
Note: NLSUR stands for nonlinear SUR, and 3SLS for three stages least squares.

Figure 3

BOLIVIA: KNOWLEDGE FACTOR

Average along descriptive variables



weak inverted U-shape, peaking at the 25 to 34-year-old age group. Figure 3 gives details of these features.

Still in Table 10, the fourth and fifth columns show the instrumented version of the system. Although the knowledge factor ceases being significant in two of the equations, in all of the others it shows the underestimation bias of the endogenous version. The exercise of including the instrumented factor in all the equations (sixth and seventh columns of Table 7) largely confirms the original specification, although the results indicate that the elimination of the downward bias results in the factor becoming significant in the equation of preparedness for negative shocks.

The variables and weights in the Bolivian financial attitude factor are shown in Table 11, while the estimated attitude factor coefficients in the behavior equations are shown in Table 12, where we see that they are significant in eight equations plus the fixed coefficient.

Table 11

BOLIVIA: ATTITUDE FACTOR

Variable	*Weight*
Responsible	0.030[a]
Bold	0.013[c]
Planner	0.031[a]

[a] *p*-value <1%, [b] *p*-value <5%, and [c] *p*-value <10 percent.

The attitude factor in Bolivia increases with social class as well as with formal education. The difference between men and women is very small, with a slightly smaller average for the latter. The behavior of this factor by age group resembles the one of the knowledge factor: a weak inverted U, peaking at 25 to 34 years old. Figure 4 gives details of these features.

Considering the instrumented versions of the system, the fourth and fifth columns of Table 12 once more confirm the presence of underestimation bias in the endogenous versions. The loss of precision renders the factor not statistically significant in three equations. Including the factor in all of the equations does not result in

Table 12

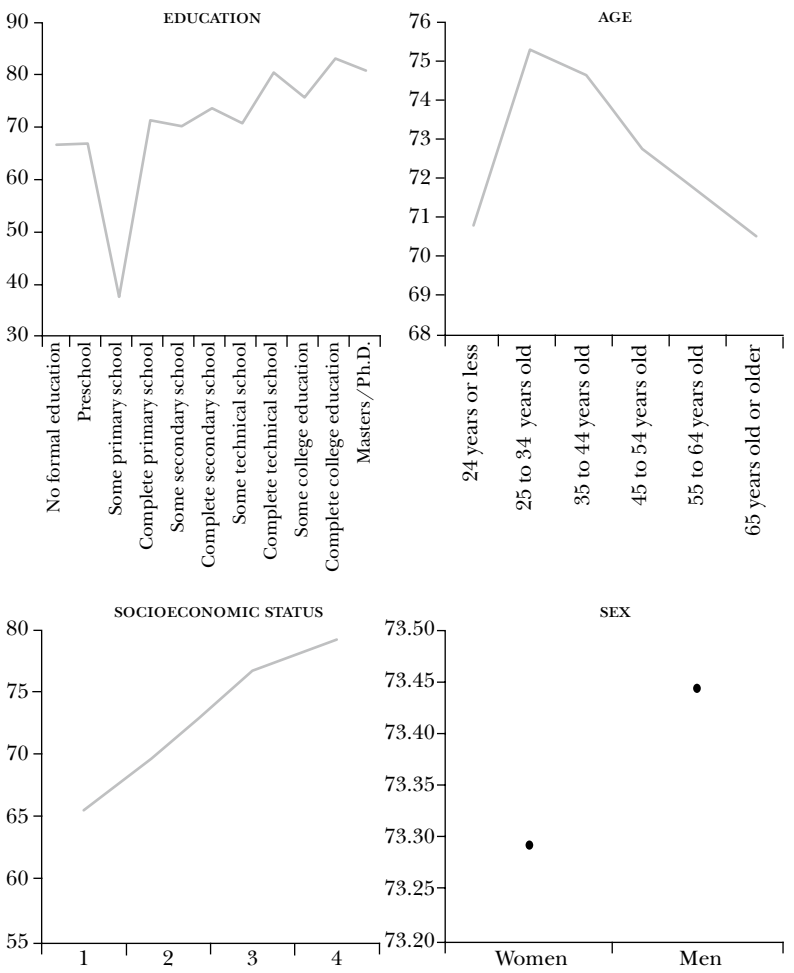
BOLIVIA: ATTITUDE FACTOR

Equation	*NLSUR coefficient*	*NLSUR* p-*value*	*3SLS coefficient*	*3SLS* p-*value*	*3SLS-all coefficient*	*3SLS-all* p-*value*
Savings, last 12 months	0.906	0.002	0.930	0.293	0.794	0.371
Savings, last 12 months, in financial sector	0.844	0.002	1.797	0.055	1.547	0.104
Prepared	0.445	0.029	1.407	0.095	0.674	0.469
Budget	0.732	<0.001	1.693	0.054	1.603	0.068
Exact budget	0.393	0.019	0.590	0.433	0.591	0.433
Binding to budget	1(fixed)		1.669	0.095	1.594	0.112
Comparison	0.550	0.019	2.017	0.008	1.389	0.126
Checking account	0.275	0.081	0.801	0.152	0.413	0.525
Savings account	0.744	0.006	2.591	0.005	2.367	0.013
Loan shark	–		–		0.074	0.771
Credit card	–		–		0.050	0.946

First stage: F(49, 1,056) = 3.04, Prob. > F = 0.0000.
Note: NLSUR stands for nonlinear SUR, and 3SLS for three stages least squares.

Figure 4

BOLIVIA: ATTITUDE FACTOR
Average along descriptive variables



it being significant in any additional equation, as reflected in the sixth and seventh columns.

In Table 13, we show the *p*-values of knowledge and attitude variables that do not belong in the factors, but are significant at the 10% level in some equations. The influence appears to be scattered. This indicates that the factors capture most of the effect of financial knowledge and attitude variables on financial behavior variables. In the knowledge factor, the compound interest question is the one with the highest point estimate, followed by the understanding of inflation as changing prices. The attitude factor indicates that increasing the self-assessment of paying bills on time and of setting long-term goals, in terms of policy benefits, is preferable to promoting the attitude of being prepared to take risks in investments.

4.3 Ecuador

In the Ecuadorian dataset, only an attitude factor with two variables is found. Table 14 shows these variables.

In the second and third columns of Table 15, we show in which equations the factor is significant along with the coefficients of the endogenous version.

The attitude factor in Ecuador tends to increase with social class for almost all classes, but its increase with formal education is questionable. With regard to age, the factor decreases from 44 years of age onwards. The difference between sexs is very small, with men slightly ahead. Figure 5 gives details of these features.

The instrumented versions of the system are more imprecise (columns four through seven of Table 15). This is likely a result of low correlations between the instruments and the factor. Only in two equations do they retain significance. In these, the coefficient once more indicates underestimation bias in the endogenous version. The exercise of including the instrumented factor in all equations does not result in significance in any additional equation.

In Table 16, we show the attitude and knowledge variables that are significant even though they do not participate in a factor. Several variables are correlated with the behavior variables, but as their coefficients are not *proportional* along the equations, most of them cannot be included in factors, making the policy design more complex.

Table 13

BOLIVIA: *P*-VALUES OF KNOWLEDGE AND ATTITUDE VARIABLES NOT INCLUDED IN FACTORS

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*
Division											
Inflation in practice		0.025	<0.001		0.010						
Interest definition											
Simple interest		<0.001							0.028		
Compound interest–double correct											
Risk and return											
Inflation definition											
Diversification								0.008			0.050
Conscientious consumer						0.081					0.008
Carpe diem (inverted scale)											
Impatient (inverted scale)											0.029
Responsible											
Bold											
Conscientious at finance											
Planner											
Spender (inverted scale)											

Note: Shaded variables enter the factor. 1 stands for savings last 12 months; 2, savings last 12 months in the financial sector; 3, prepared; 4, budget; 5, exact budget; 6, binding to budget; 7, comparison; 8, checking account; 9, savings account; 10, loan shark; and 11, credit card.

Table 14

ECUADOR: ATTITUDE FACTOR

Variable	*Weight*
Responsible	0.019[a]
Planner	0.054[a]

[a] *p*-value <1 percent.

Table 15

ECUADOR: ATTITUDE FACTOR

Equation	*NLSUR coefficient*	*NLSUR* p-*value*	*3SLS coefficient*	*3SLS* p-*value*	*3SLS-all coefficient*	*3SLS-all* p-*value*
Savings, last 12 months	1(fixed)		−0.638	0.529	−0.584	0.565
Savings, last 12 months, in financial sector	0.912	<0.001	0.861	0.437	1.010	0.364
Prepared	–		–		−0.148	0.775
Budget	0.666	0.004	0.317	0.673	0.266	0.730
Exact budget	–		–		−0.185	0.716
Binding to budget	0.547	0.006	−0.262	0.658	−0.335	0.585
Comparison	1.119	<0.001	1.573	0.002	1.686	0.001
Checking account	–		–		0.404	0.250
Savings account	0.442	0.045	0.987	0.240	1.078	0.202
Loan shark	0.161	0.047	0.634	0.031	0.621	0.035
Credit card	–		–		0.565	0.19
Consumption credit	–		–		0.177	0.651

First stage: F(52, 1,118) = 3.44, Prob. > F = 0.0000.
Note: NLSUR stands for nonlinear SUR, and 3SLS for three stages least squares.

Figure 5

ECUADOR: ATTITUDE FACTOR

Average along descriptive variables

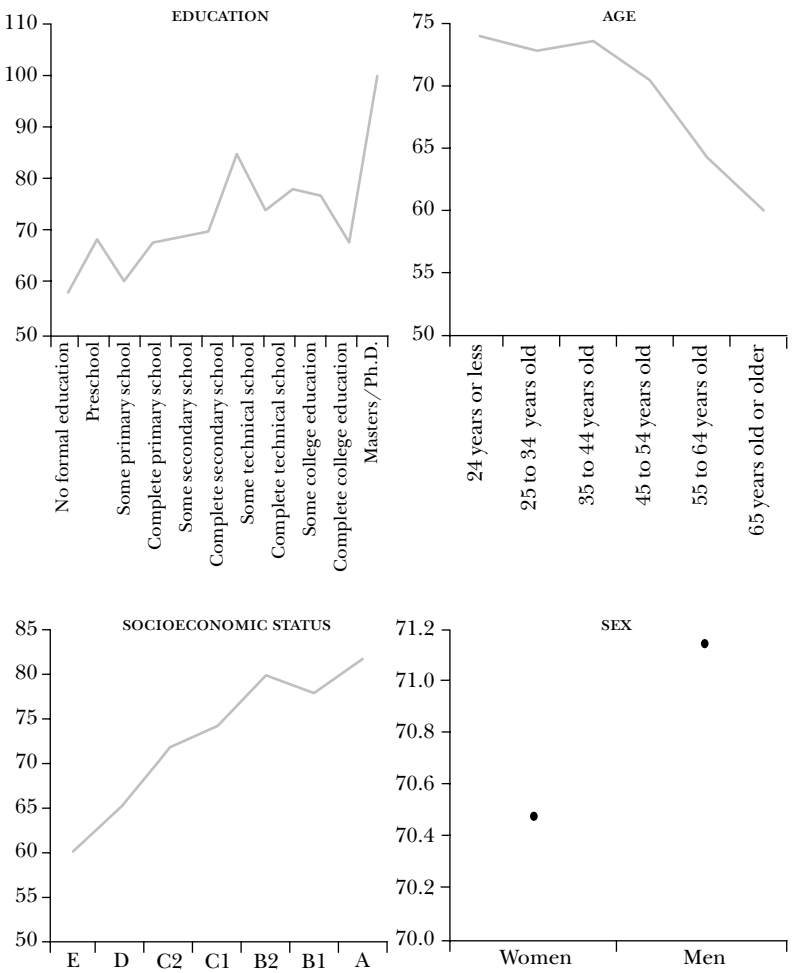


Table 16

ECUADOR: *P*-VALUES OF KNOWLEDGE AND ATTITUDE VARIABLES NOT INCLUDED IN FACTORS

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*
Division	0.097	0.043		0.035		0.056	0.024	0.005				0.097
Inflation in practice	<0.001	<0.001								0.023		0.000
Interest definition	0.039				0.007							0.039
Simple interest	0.031	0.026							<0.001			0.031
Compound interest–double correct										0.057	0.026	
Risk and return			0.072		0.094		0.016					
Inflation definition	<0.001	0.023	0.056									<0.001
Diversification									0.019		0.098	
Conscientious consumer		0.009							0.077			
Carpe diem (inverted scale)						0.013						
Impatient (inverted scale)			0.077	0.001	0.089	0.024						
Responsible												
Bold	0.083			0.056								0.083
Conscientious at finance			<0.001	0.052					0.061			
Planner												
Spender (inverted scale)	0.003	0.009	0.031		0.094						0.032	0.003

Note: Shaded variables enter the factor. 1 stands for savings last 12 months; 2, savings last 12 months in the financial sector; 3, prepared; 4, budget; 5, exact budget; 6, binding to budget; 7, comparison; 8, checking account; 9, savings account; 10, loan shark; 11, credit card; and 12, consumption credit.

4.4 Colombia

In the Colombian dataset, only an attitude factor with two variables is found. Table 17 presents these variables.

Table 17

COLOMBIA: ATTITUDE FACTOR

Variable	*Weight*
Impatient (inverted scale)	0.030[a]
Conscientious at finance	0.010[b]

[a] *p*-value <1%, and [b] *p*-value <5%.

In Table 18, we show in which equations the factor is significant along with its coefficients.

Table 18

COLOMBIA: ATTITUDE FACTOR

Equation	*NLSUR coefficient*	*NLSUR* p-*value*	*3SLS coefficient*	*3SLS* p-*value*	*3SLS-all coefficient*	*3SLS-all* p-*value*
Savings, last 12 months	1(fixed)		2.048324	0.126	2.278	0.092
Savings, last 12 months, in financial sector	0.476	0.049	1.035	0.480	1.520	0.321
Prepared	–		–		0.974	0.424
Budget	0.533	0.073	−0.225	0.864	1.53	0.311
Exact budget	–		–		0.356	0.796
Binding to budget	–		–		3.821	0.013
Comparison	–		–		−0.816	0.518
Checking account	–		–		1.692	0.058
Savings account	–		–		1.472	0.355
Loan shark	–		–		−0.285	0.724
Credit card	–		–		1.147	0.323
Consumption credit	−0.371	0.087	−0.084	0.907	0.045	0.950

First stage: F(52, 1,145) = 1.55, Prob. > F = 0.0083.
Note: NLSUR stands for nonlinear SUR, and 3SLS for three stages least squares.

The attitude factor in Colombia increases with social class for almost all classes, but its increase with formal education appears weak. It terms of age, the factor decreases from 44 years of age onwards. The difference between sexs places women ahead of men, on average. Figure 6 gives details of these features.

The instrumented estimation of the system, shown in columns four and five of Table 18, render the coefficients as not significant in all equations. The inclusion of the factor in all equations, displayed in the last two columns of Table 18, results in three significant coefficients at the 10% level. Two of them do not belong in the endogenous estimation, indicating some presence of downward bias in it.

In Table 19, we show the attitude and knowledge variables that are significant even though they do not participate in a factor. As in the Ecuadorian case, many variables are correlated with financial behavior and most of them cannot be included in the factors, making the policy design more complex.

4.5 Cross-country Comparisons

Although this paper focuses on policy design, and thus advocates the need of addressing the relation between financial literacy and behavior variables separately for each country, it is interesting to notice some similarity in the results. In Table 20, we summarize the results of the NLSUR estimations, and we may grasp easily how each of the regressors of interest explains many objective variables. Variables that belong in a factor are marked with an F, and the number of behavior variables they affect can be seen in the lower panel, where we list the number of equations in which each factor is significant. To make visualization easier, the higher the number of behavior variables affected, the darker the color of the cell.

In analyzing Table 20, we find being a planner (setting long-term financial goals and striving to attain them) is important in all countries. This variable belongs in a factor in three of them and is significant by itself in five equations in the remaining one.

Some variables, on the other hand, seem to perform poorly, since they are correlated with very few dependent variables in all countries. This is the case of the carpe diem attitude (statement: "I tend to live for today and let tomorrow take care of itself") and the understanding of the definition of interest. Of course, it is possible that these questions are relevant for dimensions of financial behavior

Table 19

COLOMBIA: P-VALUES OF KNOWLEDGE AND ATTITUDE VARIABLES NOT INCLUDED IN FACTORS

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*
Division				0.003		0.007			0.047		0.005	
Inflation in practice		0.041					0.035					
Interest definition												
Simple interest							0.023					
Compound interest–double correct	0.016										0.039	0.016
Risk and return			0.066									
Inflation definition				0.041					0.081			
Diversification												
Conscientious consumer				0.000	0.005	0.001						
Carpe diem (inverted scale)												
Impatient (inverted scale)												
Responsible		0.028								0.037		
Bold				0.017								
Conscientious at finance												
Planner	<0.001		0.035					0.066		0.001		0.000
Spender (inverted scale)					0.028				0.051			

Note: Shaded variables enter the factor. 1 stands for savings last 12 months; 2, savings last 12 months in the financial sector; 3, prepared; 4, budget; 5, exact budget; 6, binding to budget; 7, comparison; 8, checking account; 9, savings account; 10, loan shark; 11, credit card; and 12, consumption credit.

Figure 6

COLOMBIA: ATTITUDE FACTOR

Average along descriptive variables

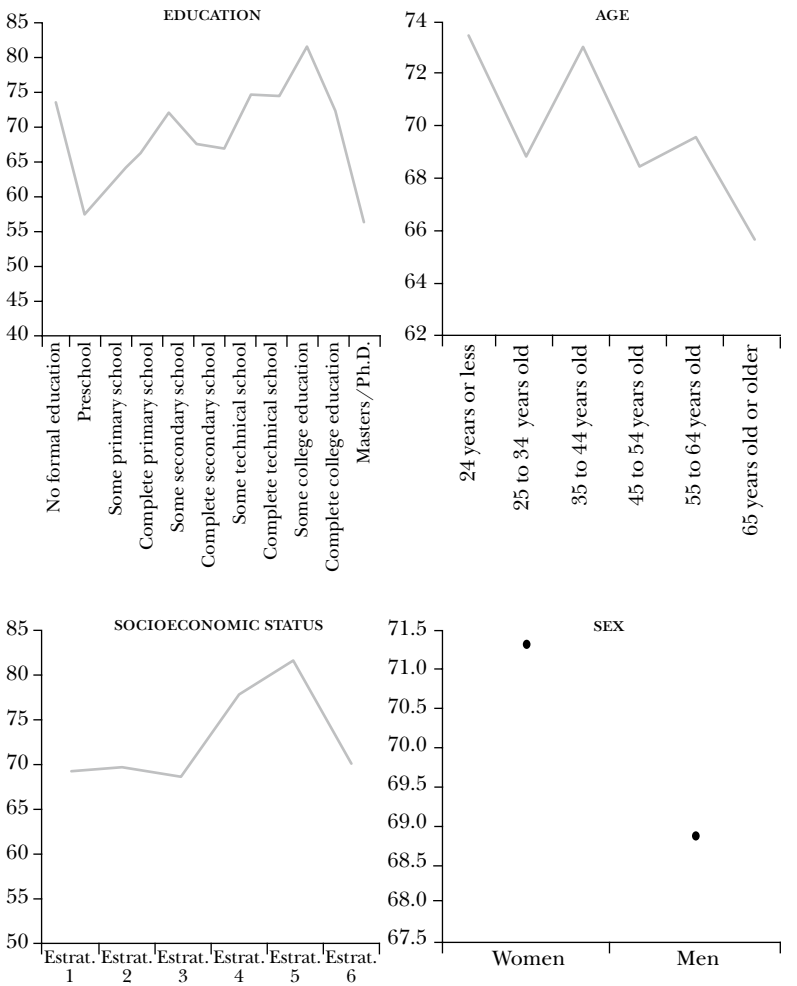


Table 20

RESULTS SUMMARY

	Peru	*Bolivia*	*Ecuador*	*Colombia*
Division	2	F	6	4
Inflation in practice	2	3	3	2
Interest definition	1	0	2	0
Simple interest	4	2	3	1
Compound interest–double correct	2	F	2	2
Risk and return	1	F	4	2
Inflation definition	1	F	3	2
Diversification	1	2	2	0
Conscientious consumer	1	2	3	3
Carpe diem (inverted scale)	2	0	1	0
Impatient (inverted scale)	1	1	4	F
Responsible	0	F	F	2
Bold	F	F	2	1
Conscientious at finance	F	0	3	F
Planner	F	F	F	5
Spender (inverted scale)	3	0	6	2
Attitude factor	6	8	6	3
Knowledge factor		5		

that could not be used in estimations, due to a very low number of users, or even for behaviors not assessed by the survey.

A related issue is the possibility that there are important questions specific to certain countries other than the widely agreed upon set used in the OECD kit. In comparing the results of the present paper with those obtained in Garber and Koyama (2016), we find that all the attitude-related questions that entered some factor in the present paper, except for "being prepared to risk some money when investing," enter one of the two attitude factors defined there. At the same time, some additional questions, not present in the CAF or OECD survey are important too, including one about the habit of buying products in installments, a common practice in Brazil. We list the questions that are important in Brazil, and the information about their presence in the CAF and OECD surveys in the Annex.

5. CONCLUSION

In this paper we implement for four Latin American countries a technique developed in Garber and Koyama (2016) to obtain financial knowledge and financial attitude measures that are meaningful in terms of policy objectives. This is the first paper to use that technique in a cross-country analysis. In each country, the technique resulted in the construction of at least one factor. We also documented the possibility of employing as instruments the controls that were no significant in the equations.

An interesting similarity is that the *weights* of the variables inside those factors are very heterogeneous among variables. This fact, combined with the notion that several knowledge and attitude variables fail to explain financial behavior, indicates that measures that sum *points* on survey questions could convey misleading measures for the design of programs aimed at enhancing financial literacy. Of course, this argument is only valid if the behavioral outcomes that we employed as targets are the ones that matter as policy goals. The fact that they were included as questions in such a careful survey appears to indicate that this is true.

In terms of the performance of specific variables, the attitude of being a planner stands out, affecting several outcomes in all the countries analyzed.

Finally, the fact that the set of knowledge and attitude variables affect financial behaviors varies from one country to another indicates that there may be questions not included in the survey that are relevant, even if that is only at the national level. In the case of Brazil, this was shown by Garber and Koyama (2016).

ANNEX

Comparison with Results for Brazil

In this Annex, we display the knowledge and attitude questions that proved to be relevant in the Brazilian case, but were not included in the CAF survey. We reproduce the tables for knowledge and attitude factors from Garber and Koyama (2016).

Table A.1

QUESTIONS MEASURING THE FINANCIAL KNOWLEDGE FACTOR IN BRAZIL

Question	*Value assigned*	*Coefficient (standard deviation)*	*OECD survey*	*CAF survey*
Suppose three friends win 1,500 BRL together in a lottery. If they decide to share the money equally, how much does each one get? (three alternatives or do not know)	Dummy = 1 if correct	0.984[a] (0.240)	Yes	Yes
A good way to control monthly expenditure is to make a budget. (True or false)	Dummy = 1 if correct	0.270[d] (0.159)	No	No
Having information about the included interest if a sale is made in installments is a basic consumer right. (True or false)	Dummy = 1 if correct	0.730[a] (0.227)	No	No

Table A.1 (cont.)

Question	*Value assigned*	*Coefficient (standard deviation)*	*OECD survey*	*CAF survey*
In Brazil in 2013, what was the level of inflation? (three alternatives or do not know)	Dummy = 1 if correct	0.463[a] (0.098)	No	No
How would you rate your level of financial knowledge on a scale of 1 to 5 where 1 is not at all knowledgeable and 5 is very knowledgeable? (1 through 5, do not know or refusal)	1 through 5	0.248[a] (0.051)	Yes	No
Suppose you borrow 100 BRL from a friend and pay him back 100 BRL after a week. How much interest have you paid on this loan? (three alternatives or do not know)	Dummy = 1 if correct	0.379[b] (0.1286657)	Yes	Yes
An investment with a high return is likely to be high risk. (True or false)	Dummy = 1 if correct	0.357[b] (0.130)	Yes	Yes

Note: Significant at [a] 0.1%, [b] 1%, [c] 5%, and [d] 10%. BRL stands for Brazilian real.
Source: Garber and Koyama (2016).

Table A.2

QUESTIONS MEASURING THE FINANCIAL ATTITUDE FACTOR 1 IN BRAZIL

Question	*Value assigned*	*Coefficient (standard deviation)*	*OECD survey*	*CAF survey*
How would you rate your level of financial stress? (1 through 5, do not know or refusal)	1 through 5	0.253[a] (0.050)	No	No
I keep a close personal watch on my financial affairs. (How much do you agree, 1 through 5)	1 through 5	0.113[b] (0.044)	Yes	Yes
I prefer to pay for a purchase in installments than to wait until I have the money to pay for it upfront. (How much do you disagree, 1 through 5)	1 through 5	0.064[c] (0.032)	No	No
I find it more satisfying to spend money than to save it for the long term. (How much do you disagree, 1 through 5)	1 through 5	0.107[a] (0.033)	Yes	Yes
I have too much debt right now. (How much do you disagree, 1 through 5)	1 through 5	0.111[b] (0.035)	Yes	No
I am satisfied with my present financial situation. (How much do you agree, 1 through 5)	1 through 5	0.135[a] (0.035)	Yes	No

Note: Significant at [a]0.1%, [b]1%, [c]5%, and [d]10%.
Source: Garber and Koyama (2016).

Table A.3

QUESTIONS ENTERING THE FINANCIAL ATTITUDE FACTOR 2 IN BRAZIL

Question	*Value assigned*	*Coefficient (standard deviation)*	*OECD survey*	*CAF survey*
In general, I feel capable of managing my personal finances by myself. (How much do you agree, 1 through 5)	1 through 5	0.100[b] (0.035)	No	No
How confident are you that you have done a good job of making financial plans for your retirement? (How much do you agree, 1 through 5)	1 through 5	0.088[b] (0.031)	Yes	No
I set long-term financial goals and strive to achieve them. (How much do you agree, 1 through 5)	1 through 5	0.057[c] (0.026)	Yes	Yes
Money is there to be spent. (How much do you disagree, 1 through 5)	1 through 5	0.074[b] (0.029)	Yes	Yes
I pay my bills on time. (How much do you agree, 1 through 5)	1 through 5	0.099[b] (0.035)	Yes	Yes
My financial situation limits my ability to do the things that are important to me. (How much do you disagree, 1 through 5)	1 through 5	0.067[c] (0.027)	Yes	No
I must admit that I purchase things because I know they will impress others (slightly different phrasing)[1]. (How much do you disagree, 1 through 5)	1 through 5	0.066[c] (0.027)	Yes	No

Note: Significant at [a]0.1%, [b]1%, [c]5%, and [d]10 percent. [1] For the paper in English, we used the original version of the questions in the OECD toolkit. By *slightly different phrasing* we mean that the question used in Portuguese is a bit different from this one. Still it is supposed to be the one corresponding to this original question. The version in Portuguese says: "When I buy something, I generally choose a brand which my friends and relatives approve of."
Source: Garber and Koyama (2016).

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