Cognitive Characteristics, Personality Traits, and Financial Literacy: Their Role in Financial Decision-Making

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A research example (Roa *et al.*, 2016)

- The objective of this study is to analyze alternative or additional determinants of financial decision-making.

- To achieve this, we based our analysis on the ***Financial Capabilities Survey***: Bolivia, Colombia, Ecuador and Peru (CAF, OCDE toolkit).

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Cognitive characteristics

- Importance of cognitive characteristics in explaining socioeconomic behaviors: educational attainment, health, criminality and labor market outcomes.

- Cognitive characteristics or intelligence are related to abstract thought and are commonly defined as the rate at which people learn, or the ability to apply reasoning in novel situations.

- Scores on intelligence tests (IQ tests)

Cognitive characteristics and financial decisions

Bucher-Koenen and Ziegelmeyer (2010), Grinblatt *et al.* (2011), Chritelis *et al.* (2010), Agarwal and Mazumder (2012); Cole *et al.* (2013):

- Fewer financial mistakes are made, there is less probability of default, a greater range of more sophisticated financial products are used, etc.

- Primarily suggest that **numeracy abilities** are strongly related to making appropriate financial decisions.

Personality Psychology in Economics

- **Heckman and Kautz (2013), Borghans *et al.* (2011) y Almlund *et al.* (2011)**.

- These terms are used to describe personal attributes.

- Psychologists have sketched a relatively commonly accepted taxonomy of personality traits known as the '*Big Five':*

Openness to experience, Conscientiousness, Extraversion, Agreeableness and Neuroticism.

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Personality traits and financial decisions

- Personality traits could be as useful as cognitive characteristics in predicting socioeconomic behaviors.

- There is a connection between the presence or absence of certain sub-facets related to *Conscientiousness* – propensity to plan and perseverance - in explaining:

    - Indebtedness and default (Klinger *et al.,* 2013; Di Giannatale *et al.,* 2015),
    - Good management of finances (Kaufmann, 2012),
    - Investment biases (Jamshidinavid *et al.,* 2012)
    - Savings (Kausel *et al.,* 2016).

Financial Literacy

- Financial literacy is another element that has recently come to be considered a relevant determinant of financial decisions.

- Existence of a positive correlation between financial literacy and appropriate financial decision-making (Lusardi and Mitchell, 2014); others have found no relevant correlation.

- This difference in perspective could stem from two factors:

  - Cognitive characteristics and education seem to be strongly related to financial literacy (McArdle *et al.,* 2009).

  - There seems to be a problem of endogeneity between financial literacy and financial decision-making (Klapper *et al.,* 2012; Van Rooij *et al.,* 2011; Lusardi and Mitchell, 2014).

Methodology: Survey

- ***Sociodemographic variables.***
- ***Cognitive characteristics:*** Numerical abilities.
- ***Financial Literacy:*** OCDE (inflation, risk diversification, and compound interest).
- Temporal and risk preferences.
- ***Personality traits:*** sub-facets of ***Concienstiousness***
  - *Propensity to plan or establish long term goals;*
  - *Perseverance;*
  - *and scrupulosity.*

Empirical exercise: OLS estimation

To identify the potential influence of conscientiousness (CON_j), cognition (COG_j), and financial literacy (FL_j) over financial decisions, we estimate the following linear probability OLS model:

$$Y_{i,j} = \beta_{0,i} + \beta_{1,i} COG_j + \beta_{2,i} CON_j + \beta_{3,i} FL_j + X_j' \theta_i + u_j$$

Where $Y_{i,j}$ represents a binary variable of the *i* financial decision -- *i*= $\in \{V1; V2; V3; V4; V5\}$ -- made by the *j* respondent (*j=1,..,N)*; and X_j' is a vector of controls that includes: gender, age, schooling level, marital status, group of income, unemployment, income stability, and country-specific dummies.

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Results

- **Numerical abilities and personality traits related to conscientiousness** – propensity to plan, perseverance, and scrupulosity – **increase the probability that an individual will save, as well as the probability that they will hold both formal credit and formal savings products.**

- The same result is observed for income and education.

- Women and less educated people are more likely to participate in informal financial markets.

Results

- **Higher level of financial literacy** decreases the probability that an individual will use exclusively short-term **informal savings mechanisms.**

- **Financial literacy is important in the case of more complex financial products** -- such as investment funds or medium and long-term credit products -- but not for simpler products, such as a deposit or bond products.

Policy interventions

- Childhood programs.
- But, though stable at any age, personality traits and cognitive characteristics are not set in stone over the course of a lifetime: they can change.
- Specifically, while genetics have a significant influence, parental, educational, and social environments shape individuals, especially in the early years.
- **Personality traits are more malleable than cognitive characteristics over the life cycle** (cognition becomes almost fixed between the ages of 6 and 8).

Policy recommendations

- Our results could contribute to financial institutions and governments designing interventions that segment the population according to a criteria that goes beyond sociodemographic variables: rural areas, gender, age, etc.

- Empirical methodologies that measure personality traits and cognition could be used to identify those individuals who are more likely to fail to meet repayments, fail to save, or fail to participate in the formal financial sector.

- For these individuals some specific interventions could be designed -- such as the products based on planning, or a system of reminders for individuals with low levels of conscientiousness.

- More research is nevertheless needed…

Priorities

- More research must be undertaken: **Financial Household's Decisions.**
- More baseline studies, such as the Survey implemented by CAF, are urgently needed.
- There must be more interaction between policy makers and academics.
- Joint Research Project on Household's Financial Decision CAF-CEMLA.

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Thank you!
¡Gracias!

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