

Where Knowledge Meets Perceptions: Emerging Adults and their Perceptions of Financial Knowledge.

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Objective

A report by the Financial Industry Regulatory Authority (FINRA) using the National Financial Capability Study finds that while individuals score low on financial literacy questions, they tend to rank themselves high on self-assessments of their financial knowledge (Lin, Bumcrot, Lusardi, Mattola, Kieffer, & Walsh, 2016). The majority of individuals rank themselves as having high to very high levels of financial knowledge. This disparity between what individuals know and what they think they know may be a cause for concern as it could lead to overconfidence bias. Overconfidence bias occurs when individuals make subpar decisions because they think they know more than they do, which can lead to costly financial actions (Barber & Odean, 2001)

The goal of this study is to examine the relationship between individuals' perceptions and objective measures of financial knowledge to see if the inverse relationship found by FINRA is present in the Arizona Pathways to Life Success for University Students (APLUS) survey. In addition, this study uses the longitudinal nature of this data to examine how the relationship between objective measures and perceptions of financial knowledge varies over time as college students transition into adulthood.

Significance

Prior studies using the Arizona Pathways to Life Success for University Students (APLUS) survey data have evaluated emerging adults as they transition into adulthood. For example, Serido, Shim, Mishra, & Tang (2010) explore parents' role in their children's financial preparation. They find that children's well-being is influenced by parents' financial-coping abilities. Xiao, Ahn, Serido, & Shim (2014) conducted a study using the APLUS data that evaluates the relationship between earlier financial-literacy education and later financial decisions. In addition, Bosch, Serido, Card, Shim, & Barber (2016) use the APLUS data to explore the financial identities of emerging adults. What appears to be missing from this research is what the APLUS data reveals about the relationship between objective measures and perceptions of financial knowledge, whether this relationship changes over time, and the potential implications of this relationship regarding when and whether financial literacy interventions are needed. There are two hypotheses for this study. The first is that there is a negative relationship between perceptions of financial knowledge and objective measures of the knowledge. The second hypothesis is that this relationship changes over time becoming less negative as individuals age.

Method

This paper estimates the following random-effects ordered probit and fixed-effects ordered logit models via maximum likelihood:

$$FK_{ij}^* = \beta_0 + \beta_1 ok_{ij} + \beta_6 gen_{ij} + \beta_7 race_{ij} + \beta_8 ms_{ij} + \varepsilon_{ij}$$

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$$\begin{aligned}
 FK_{ij} &= 1 \text{ if } FK_{ij}^* < \mu_{1ij} \text{ (Very low perceptions of financial knowledge)} \\
 FK_{ij} &= 2 \text{ if } \mu_{1ij} < FK_{ij}^* < \mu_{2ij} \text{ (Low perceptions of financial knowledge)} \\
 FK_{ij} &= 3 \text{ if } \mu_{2ij} < FK_{ij}^* < \mu_{3ij} \text{ (Moderate perceptions of financial knowledge)} \\
 FK_{ij} &= 4 \text{ if } \mu_{3ij} < FK_{ij}^* < \mu_{4ij} \text{ (High perceptions of financial knowledge)} \\
 FK_{ij} &= 5 \text{ if } \mu_{4ij} < FK_{ij}^* \text{ (Very high perceptions of financial knowledge)}
 \end{aligned}$$

where FK_{ij}^* is a latent measure of the perceptions of financial knowledge (FK_{ij}). The subscript i indicates the individual and the subscript j indicates the wave. The unknown thresholds μ_{1ij} , μ_{2ij} , μ_{3ij} , and μ_{4ij} are estimated and associated with responses to the question “How would you rate your overall understanding of personal-finance and money-management concepts and practice?”

The explanatory variables in the model include *ok* representing objective measures of financial knowledge and three demographic variables including *gen* representing gender, race, and *ms* representing marital status.

In the random-effects model ε_{ij} is a composite error term where $\varepsilon_{ij} = \alpha_i + \mu_{ij}$. Within the error term, α_i is included as a random intercept and μ_{ij} is the traditional error term. The random-effects model assumes that α_i is uncorrelated with any of the existing explanatory variables. This is a strong assumption and may well be violated. Violating these assumptions introduces bias into the coefficient estimates. As a robustness check, a fixed-effects model is used to confirm the results. A fixed-effects model does not assume that the explanatory variables are uncorrelated with variables not included in the model.

Results

The marginal effects of the explanatory variables on perceptions of financial literacy are shown in Table 1. Respondents in higher brackets of correct responses to the financial literacy questions (i.e. 60% vs 40% or 80% vs 60%) have a 0.02 higher probability of high perceptions of financial knowledge. Theory suggests that individuals will seek investments in human capital in the form of education if the benefits surpass the costs of obtaining human capital. The benefits are monetary and non-pecuniary, including an increase in financial knowledge that potentially can result in better money management (Oreopoulos & Salvanes, 2011). This increase in financial knowledge is evident when comparing the responses from respondents five years after college in wave four with responses from first-year-college students in wave one.

Compared to perceptions of financial knowledge five years after graduating from college, the first-year-college student in this study has a 0.03 lower probability of very high perceptions of financial knowledge. On the other hand, life experiences after college appear to have the opposite effect on perceptions of financial knowledge. College seniors have a 0.07 higher probability of very high perceptions of financial knowledge compared to five years after college. The attainment of human capital appears to increase confidence; however, the application of that knowledge after college appears to cause a decrease in this confidence.

There is a concern that using a random-effects model will introduce bias into the results because of the strong assumption that the error term is uncorrelated with any of the existing explanatory variables. An ordered logit fixed-effects model, that does not assume that the error term is uncorrelated with the explanatory variables, produces similar results giving additional support to the findings of this study.

The findings suggest that, for the emerging adults in the APLUS survey, there is a weak, but positive, correlation between objective measures of financial knowledge and individuals' perceptions of their knowledge. In addition, the results suggest that this relationship does change over time. College seniors have a higher probability of perceiving themselves as financially knowledgeable compared to when they were first-year college students. However, these same participants have a higher probability of perceiving themselves as more financially knowledgeable as college seniors than they do five years after college.

Conclusions

According to the findings in this study, it appears that the increased complexity of post-college life experiences helps individuals understand their lack of financial knowledge. Financial education will likely

not resolve all the disconnect between how individuals perceive their financial outlook late in college versus several years after college. However, if financial educators can help students experience that “wake-up” call earlier on, it may help prevent some of the financial mistakes that many individuals experience as they transition into adulthood. Financial educators and policymakers can use the evidence from this study to argue for improved, earlier, and ongoing financial education.

Table 1 Marginal Effects of Financial Literacy and other Explanatory Variables on Perceptions of Financial Knowledge

	Very Low		Moderate		Very High
	1	2	3	4	5
Percentage of Correct Financial	-0.0042*** (0.0013)	-0.0124*** (0.0036)	-0.0184*** (0.0054)	0.0180*** (0.0052)	0.0170*** (0.0049)
Wave Effects					
Omitted = Wave 4: Five years after college					
Wave 1	0.0158*** (0.0038)	0.0422*** (0.0088)	0.0430*** (0.0096)	-0.0605*** (0.0124)	-0.0406*** (0.0086)
Wave 2	-0.0084*** (0.0023)	-0.0298*** (0.0068)	-0.0566*** (0.0125)	0.0449*** (0.0102)	0.0499*** (0.0110)
Wave 3	-0.0043** (0.0021)	-0.0142** (0.0067)	-0.0235** (0.0109)	0.0215** (0.0100)	0.0205** (0.0095)
Gender	-0.0166*** (0.0041)	-0.0496*** (0.0098)	-0.0736*** (0.0138)	0.0720*** (0.0134)	0.0678*** (0.0134)
Race	-0.0052 (0.0033)	-0.0156 (0.0095)	-0.0231 (0.0141)	0.0226* (0.0137)	0.0213 (0.0130)
Married	-0.0047 (0.0033)	-0.0139 (0.0096)	-0.0206 (0.0142)	0.0201 (0.0139)	0.019 (0.0131)

Notes:

Longitudinal analysis using the 4 main waves of the Arizona Pathways to Life Success for University Students Survey.

Number of person-waves = 2,332 (Balanced Panel with 583 in each wave)

* p < .1 ** p < .05 *** p < .01 Pseudo R-Squared = .0295

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