

The Financial Skill Scale: An Application of Item Response Theory to Establish a Complete View of Financial Literacy

Dee Warmath, University of Wisconsin¹
David Zimmerman, UCLA School of Management²

Background

With the “democratization of finance,” the burden of financial responsibility is increasingly shifting to the individual American who is more than likely ill-prepared to handle the challenge (Erturk, Froud, Johal, Leaver, and Williams 2007; Mandell and Klein 2009). Many researchers, analysts, and policymakers have identified financial literacy deficiency as the root of that challenge, with an almost exclusive focus on the explicit financial knowledge component of financial literacy (Collins and O’Rourke 2010; Huston 2010; Nicolini, Cude and Chatterjee 2013). Financial education designed to communicate explicit knowledge of financial concepts is considered by many experts to be the principal solution to assist individuals in exhibiting better financial behavior to achieve desirable financial outcomes (Mandell and Klein 2009; OECD 2006).

Relatively little work examines the use component of financial literacy, meaning the portion that allows the individual to act on what they know and learn what they need to know for a given decision (Huston 2010; Remund 2010; Knoll and Houts 2012; Netemeyer, Warmath, Fernandes and Lynch 2017). Some evidence suggests that this component of financial literacy may hold greater promise for financial behavior improvements (Hilgart, Hogarth, and Beverly 2003; Willis 2008; Netemeyer, Warmath, Fernandes and Lynch 2017). Yet no study has addressed this challenge leaving the field without a definition or measure of the construct. The current lopsided view of financial literacy as explicit financial knowledge limits our perspective on what is possible and desired in financial education.

Purpose

This study, conducted in partnership with the Consumer Financial Protection Bureau, defines a new construct we call *financial skill*, develops a scale to measure the presence of skill, and validates the measure by demonstrating its contribution to explanations of financial behavior and well-being.

Research Questions

What is financial skill?

How might we develop a psychometrically valid measure of financial skill?

What is the role of financial skill relative to financial knowledge in financial behavior and associated outcomes?

Methodology

Data

This study uses several data sources to define, measure and validate the construct of financial knowledge. These sources include

- A narrative qualitative effort with roughly 70 hour-long interviews with a diverse set of individuals across the U.S. producing over 1,600 pages of transcripts,
- Three online survey waves with a national sample using the Survey Sampling International (SSI) panel to support scale development (total N > 14,000), and
- The CFPB National Financial Well-Being public use dataset using GfK’s Knowledge Network panel (n = 6,394) to explore the role of financial skill.

¹ Assistant Professor, Department of Consumer Sciences, 4222 Nancy Nicholas Hall, 1300 Linden Drive, University of Wisconsin, Madison, WI, 53706, USA. Phone: 262-312-0606. Email: warmath@wisc.edu.

² Doctoral Student, Department of Consumer Sciences, UCLA Anderson School of Management, Los Angeles, CA, 90095, USA. Phone: 310-825-7873. Email: David.zimmerman.phd@anderson.ucla.edu.

Validation Variables

The primary independent variables for the validation analysis are financial skill and financial knowledge. Two measures of financial knowledge were explored (Lusardi and Mitchell 2007 and Knoll and Houts 2012). In our exploratory analysis, the Knoll and Houts scale outperformed and was used for the validation. The dependent variables used were the CFPB measure of financial well-being (2015) and three items from the Dew and Xiao (2011) money management scale. Control variables were age, income, gender, and race/ethnicity.

Methods

Methods used in this study include thematic analysis of the qualitative transcripts; item-response modeling and exploratory/confirmatory factor analysis of the three survey waves in scale development; and OLS regression to explore the role of financial skill.

Results

Through the financial narratives, we came to understand the importance of financial skill in financial decision-making. Knowledge was as likely (if not more likely) to be gained from financial decisions as it was to be acquired or retrieved prior to the decision. *"I learned about the fees incurred while transferring my 401k when I lost \$800 in the process."* What made the difference in whether that financial decision was positive was possessing financial skill, meaning knowing how and when to obtain reliable financial information, and being able to process and apply that information when making financial decisions (CFPB 2015).

Leveraging the consumer financial narratives and extant literature, candidate items were developed and fielded in three online survey waves. Using item-response theory (IRT) modeling, a psychometrically valid 10-item scale was identified:

- I know how to make complex decisions.
- I am able to make good financial decisions that are new to me.
- I know how to get myself to follow through on my financial intentions. I am able to recognize a good financial investment.
- I know how to keep myself from spending too much. I know how to make myself save.
- I know where to find the advice I need to make decisions involving money.
- I know when I do not have enough information to make a good decision involving my money I know when I need advice about my money.
- I struggle to understand financial information.

Finally, we leveraged the CFPB National Financial Well-Being public use file to examine the roles of financial skill and financial knowledge in the positive financial behavior and well-being. Table 1 provides descriptives on our measures and correlations between them. Table 2 provides the results of regression analyses conducted. Financial knowledge and financial skill were positively and significantly correlated, although at modest levels ($R = .187$, $p < .001$). When added to our regression models, financial skill significantly outperformed financial knowledge in explaining variation in financial well-being and money management.

Conclusions/Implications

Financial education has traditionally focused on delivering explicit financial knowledge based on the belief that increased stores of such knowledge would lead to more favorable financial behavior and outcomes. While financial knowledge has a role, it represents only part of the story. Financial skill offers an important construct to consider in the development of financial education programs. Findings in our study demonstrate that knowing how and when to obtain reliable financial information and being able to process and apply that information when making financial decisions is an important consideration in supporting higher levels of financial well-being and money management. Financial skill operates much like a muscle that can be applied to a variety of specific financial decisions. With a definition and measure of the

construct, future research should explore the role of decision skill and how financial education might consumers train this muscle to support more effective decisions and to allow them to leverage the explicit financial knowledge in more productive ways.

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Table 1: Descriptive Statistics and Correlations

Correlations

		Mean	Std. Dev.	1	2	3	4
1	Financial Skill	49.88	12.80				
2	Financial Knowledge (Lusardi and Mitchell 2007)	2.43	0.80	0.081			
3	Financial Knowledge (Knoll and Houts 2012)	-0.18	0.81	0.151	0.607		
4	Financial Well-Being	54.33	13.78	0.472	0.211	0.303	
5	Money Management (Dew and Xiao 2011)	14.39	3.19	0.479	0.186	0.258	0.543

Table 2: Regression Models Examining the Role of Financial Skill**A. Dependent Variable: Financial Well-Being**

Independent Variables	Model 1			Model 2			VIF
	B	se	beta	B	se	beta	
Financial Knowledge	5.689	0.205	0.328	4.244	0.185	0.245	1.036
Financial Skill				0.504	0.012	0.448	1.036
Constant	56.474	0.167		30.800	0.628		
R2	0.108			0.301			
F	771.295			1376.992			
p	< .000			< .000			

B. Dependent Variable: Money Management (Dew and Xiao 2010)

Independent Variables	Model 1			Model 2			VIF
	B	se	beta	B	se	beta	
Financial Knowledge	1.140	0.045	0.035	0.837	0.041	0.224	1.037
Financial Skill				0.104	0.003	0.429	1.037
Constant	14.831	0.036		9.541	0.138		
R2	0.093			0.270			
F	652.058			1179.424			
p	< .001			< .001			