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Review papers on definition of financial literacy and its measurement

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Abstract

This article is a literature review on the concept of financial literacy and its measurements. Based upon the review of several studies, the conceptual definitions of financial literacy would be categorized in four groups; (1) knowledge of financial concepts, (2) ability in managing personal finances, (3) skill in making financial decisions and (4) confidence in future financial planning while in the rest of the studies, researchers apply the combination of these categories. Literature also shows that the applied methods for testing the level of financial literacy in individuals are not constant and they are varied based on the definition of financial literacy.

Keywords — Financial literacy, financial knowledge, personal finance, financial skills, financial decision, measurement of financial literacy.

I. INTRODUCTION

Financial literacy has become a significant debate among scholars especially in times of economic and financial turmoil and uncertainty as can be seen in research and publication trends. Moreover, being equipped with financial literacy is essential for individuals these days as financial markets are becoming sophisticated as compared to two or three decades ago. Although many researchers have defined financial literacy but the definitions are varied despite Schuchardt’s et al. (2009) call for consistency. The terms financial literacy, financial knowledge and financial education are often used interchangeably in the literatures and few researchers have made effort to define or differentiate these terms. Unlike health literacy, or other subjects which typically use a standardized measurement, there are currently no standardized instruments to measure financial literacy. Indeed, a definition of financial literacy would seem to be a prerequisite for its measurement. In this regard, this article reviews several studies concentrating on the meaning and measurement of financial literacy.

II. DEFINITION OF FINANCIAL LITERACY

The conceptual definition of financial literacy is complicated since scholars and financial experts have long disagreed on how to define this concept. For the first time, Jump Start Coalition for Personal Financial Literacy in its inauguration in 1997 championed financial literacy as a construct (Hastings et al, 2012). However, prior to that, the idea dates to the early 1900s with the advent of consumer education research and initiatives which began in the United States (Jelley 1958). General literacy refers to a person's ability to read and write (Zarcadoolas, Pleasant, and Greer 2006) but the most general definition of financial literacy is pointed to a person's competence in money management. Indeed, the standard definition of literacy developed by the Literacy Definition Committee and used by the National Adult Literacy Survey is "using printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential" (Kirsch et al. 2001, p. 3). Based upon a review of research studies the many conceptual definitions of financial literacy fall into four categories: (1) knowledge of financial concepts, (2) ability in managing personal finances, (3) skill in making financial decisions and (4) confidence in future financial planning (Remund, D. L, 2010). It is worth mentioning that numerous scholars who have published studies about financial literacy have not plainly defined this concept (Chen and Volpe 2002; Meier and Sprenger 2007; Morton, 2005; Servon and Kaestner 2008).

Category 1: Knowledge of Financial Concepts

Knowledge is the most common element of the many conceptual definitions of financial literacy. Hilgert, Hogarth and Beverley (2003) define financial literacy as financial knowledge. They express that financial knowledge is statistically linked to financial practices: those who knew more were more likely to engage in recommended financial practices. Furthermore, "The understanding ordinary investors have of market principles, instruments, organizations and regulations" is the other definition that is defined by the Financial Industry Regulatory Authority (FINRA) in 2003 for the concept of financial literacy. Whereas financial knowledge is usually considered central to financial literacy, it should be differentiated from general knowledge. For example, Parker et al. (2008) found that specific knowledge of finance rather than general knowledge has more effect for predicting performance on a hypothetical investment task. For this reason, the National Foundation for Credit Counseling (NFCC) in 2008 defined financial literacy as "Familiarity with basic economic principles, knowledge about the U.S. economy, and understanding of some key economic terms". However, others (including Kim, 2001; Bowen, 2003; Courchane and Zorn, 2005) have approached the definition from a knowledge perspective.

Category 2: Ability in Managing Personal Finances

Many conceptual definitions of financial literacy include some relation to the ability of managing personal finances. These references are as brief as Americans having "managed their finances poorly" due to poor financial literacy (Lusardi and Mitchel, 2008) or as detailed as:

. . . ability to keep track of cash resources and payment obligations, knowledge of how to open an account for saving and how to apply for a loan, basic understanding of health and life insurance, ability to compare competing offers, and planning for future financial needs (Emmons 2005, p. 336).

Extensive definitions, like the one used by Emmons (2005), have a tendency to intricate upon specific attributes of financial literacy or even, in some cases, possible ways to operationally measure financial literacy. The noticeable point is that literacy is more than simply a measure of knowledge.

Moreover, financial literacy indicates an individual's ability to perform several tasks related to money, including but not limited to earning, protecting and spending that money (Remund, 2010). The available literature based on several studies indicate that well developed financial skills are required for effective money management (Carswell,2009; Collins,2007; Haynes-Bordas, Kiss, and Yilmazer, 2009; Scott, 2010). Financial literacy is "exercising in real life situations the ability to make informed judgments and to take effective decisions regarding the use and management of money" (Balatti, 2007, p. 7). Vitt et al.'s (2000) definition is more precise about the skills and abilities pertinent to financial literacy which is "the ability to read, analyse, manage and communicate about personal financial conditions that affect material wellbeing". Furthermore, in this category, financial literacy can be defined as measuring how well an individual can understand and use personal finance-related information in daily life, for instance in applying this ability for a loan application and payment of installments (Huston, 2010).

Category 3: Skill in Making Financial Decisions

Decision-making skills exert a big influence over most definitions of financial literacy. Literacy cannot be assessed except, when it is tested, and making decisions is the very heart of money management. Noctor et al. (1992) presented this definition more than 20 years ago as "the ability to make informed judgments and to make effective decisions regarding the use and management of money" (p. 4). This definition focused on the consumers' ability and his/her judgments and decisions. Many researchers in the past, like Beal and Delpachitra (2003), Schagen and Lines (1996), and Worthington (2004), have applied this definition because of its flexibility. Furthermore, Remund(2010) in his article mentions a collection of different decision making definitions like "successful financial decision making" (JumpStart Coalition for Personal Financial Literacy 2008), "knowledge needed to make informed decisions" (Rhine and Toussaint- Comeau 2002, p. 13), and "making smart choices" (Financial Fitness for Life 2008). Remund (2010) further quotes additional definitions such as, "The ability to evaluate the new and complex financial instruments and make informed judgments in both the choice of instruments and extent of use that would be in their own best long-run interests" (Mandell, 2007. ANZ bank (2008) while a study of adult financial literacy in Australia defines financial literacy as "the ability to make informed judgements and to take effective decisions regarding the use and management of money". Lusardi and Mitchell (2007b) look at financial literacy as a familiarity with "the most basic economic concepts needed to make sensible saving and investment decisions". Likewise, Lusardi and Tufano (2008) define this concept from a debt perspective, as it is a component of financial literacy, "the ability to make simple decisions regarding debt contracts, in particular how one applies basic knowledge about interest compounding, measured in the context of everyday financial choices". And this outlook to financial literacy can be seen in the framework of many scholars as people who "successfully manage debt" while making financial decisions that reflect their personal values and level of their financial literacy (Stone, Wier, and Bryant 2008, p. 12). One pair of scholars defined it in a practical approach as "a set of critical thinking skills to weigh and assess the pros and cons of a particular decision relative to one's own needs, values, and goals" (Kozup and Hogarth 2008, p. 131). In these cases, decision-making skills are seen as the core ability when it comes to financial literacy. Danes and Haberman (2007) applied Graham's (1980) definition to describe financial literacy with other perspectives of financial decision as: 'the ability to interpret, communicate, compute, develop independent judgment, and take actions resulting from those processes in order to thrive in our complex financial world' (p. 49).

Category 4: Confidence in Future Financial Planning

It is noted that not all scholars take part in relating the confidence in financial planning concept into the financial literacy equation (Remund, 2010).When they do, then it can be translated into "understanding about investing and financial planning" (Koenig 2007, p. 44). WiSeUp, a financial literacy program directed by the U.S. Department of Labor towards Generation X and Y women in 2008 declares that financial literacy contains the improvement of "responsible saving habits for future retirement." It is an example to demonstrate that planning is obviously obtainable as a habit which can be developed and adopted. Further programs and researches basically suggest that planning will translate into improved literacy or planning is a skill inherent to financial literacy.

On other hand, some studies define financial literacy by combining the categories mentioned earlier. For example, the Jump$tart Coalition for Personal Financial Literacy (2007) states a definition which is a group of knowledge, skills and action; "financial literacy is the ability to use knowledge and skills to manage one's financial resources effectively for lifetime financial security' (p. 1). The U.S. President's Advisory Council on Financial Literacy (2008) as well as academics (Hung et al., 2009) has adopted this comprehensive definition. Johnson and Sherraden (2006) expound a definition that combines knowledge and the ability to apply that knowledge which is the "participation in economic life should maximize life chances and enable people to lead fulfilling lives; this requires knowledge and competencies, ability to act on that knowledge and opportunity to act" (p. 6). Furthermore, Huston (2010) emphasizes that financial literacy combines "both knowledge and application (ability) of human capital specific to personal finance" (p. 307). Similarly Remund (2010) states this definition as "measures the degree to which one understands key financial concepts (knowledge) and possesses the ability and confidence to manage personal finances through appropriate, short-term decision-making and sound, long-range financial planning, while mindful of life events and changing economic conditions" (p. 284).

III. MEASURING FINANCIAL LITERACY

A review of the studies for this article revealed that there are three main barriers to designing a standardized method to measure financial literacy; 1) the lack of conceptualization, 2) definition of the construct of financial literacy and 3) content of the instrument and instrument interpretation (Huston, 2010). Marcolin and Abraham (2006) recognized the necessity for further research by focusing explicitly on financial literacy measurement. Measuring financial literacy is important since many studies show various financial behaviors as the outcome of financial literacy (Hilgert et al,2003; Ester and Emmanuel, 2004; Duflo, Gustman et al, 2004; Martin and Matthew,2007 Lusardi, 2008; Mandell and Klein, 2009 and Carpena et al, 2011).

The first effort to measure financial literacy emerged in the early 1990s when the Consumer Federation of America (1990; 1991; 1993;1998) commenced carrying out a series of "Consumer Knowledge" surveys between different populations with questions on several personal finance topics: consumer credit, bank accounts, insurance and major consumer expenditures areas such as housing, food and automobiles (Hastings, Madrian and Skimmyhorn,2012).The 1997 JumpStart survey of high school students has been repeated biennially since 2000 and has been expanded to include college students in 2008 (Mandell 2009, for an analysis these surveys).

Although available literature indicates that financial literacy is more than just knowledge, many studies measure financial literacy by focusing solely or primarily on knowledge. There are varieties of approaches to assessing knowledge. Some researchers have made an effort to do objective assessments, by asking their respondents to assess their own knowledge like Grable et al., (2009) and Lusardi and Tufano (2009). On the other hand, some studies have measured financial literacy subjectively (Stango and Zinman, 2014).Designing knowledge questions with a binary yes-or-no answers is not a common way to assess financial literacy (Borden et al., 2008; Servon and Kaestner, 2008; Hung et al., 2009 use this type of questions) however, the majority have developted knowledge questions with four response options (Volpe et al., 1996; Chen and Volpe, 2002; Beal and Delpachitra, 2003; NASD, 2003;Worthington, 2004; Jones, 2005; Lusardi and Mitchell, 2008a).In addition, some have debated for the increase of the possibility of correct answers and to prevent a guesswork response by adding one more option of a 'don't know' response to the knowledge questions (Manton et al., 2006; Hill and Perdue, 2008; Lusardi and Mitchell, 2008a; van Rooij et al., 2011). Also Lusardi & Mitchell (2006) had added a set of financial literacy questions to the 2004 Health and Retirement Study (HRS, a survey of U.S. households aged 50 and older) that have, in the past decade, served as the foundational questions in several surveys designed to measure financial literacy in the U.S. and other countries. The three core questions in the original 2004 HRS financial literacy module were developed to assess the understanding of three core financial concepts: compound interest, real rates of return, and risk diversification. Because these questions are parsimonious and have been widely replicated and adapted, they have come to be known as the “Big Three.” These questions were incorporated into the 2009 National Financial Capability Study (NFCS) in the U.S., a large national survey of the financial capabilities of the adult population. The NFCS asked two additional financial literacy questions which, together with the “Big Three,” have collectively come to be known as the “Big Five.” These two additional questions test the respondent’s knowledge about mortgage interest and bond prices.

Although several researches measure financial literacy through financial knowledge but it is open to dispute whether financial literacy measures should assess comprehensive or specific financial knowledge. Both Remund (2010) and Huston (2010) have discussed about operational definitions of financial literacy via budgeting, saving, borrowing and investing areas. Numerous studies (Chen and Volpe, 2002; NEFE, 2006; U.S. Department of the Treasury, Office of Financial Education, 2006; ANZ, 2008; Financial Fitness for Life, 2008; Jump$tart Coalition for Personal Financial Literacy, 2008; National Foundation for Credit Counseling, 2008) have implemented this comprehensive method to measure financial literacy. On the other hand, some researchers like Worthington (2004) prefer to focus on the methods in which financial knowledge is assessed in the context of individual needs and circumstances. Under this approach, researchers use a single area of personal finance like investments (Volpe et al., 1996), the US stock market (NASD, 2003; Müller and Weber, 2008), credit (Jones, 2005) and debt (Lusardi and Tufano, 2009) for assessing financial knowledge.

Other studies assess financial literacy through the perspective of measuring numerical skills (Lusardi and Mitchell, 2007a, 2007b, Gustman, Stenmeier, and Tabatabai, 2012). Indeed, numeracy, or mathematical skills, do not inevitably associate with having made the investment in knowledge of financial concepts needed to make optimal financial decisions (Almenberg and Widmark, 2011; Banks, 2010; Hung, Parker and Yoong, 2009). Mandell (2008), Lusardi and Tufano (2009) try to incorporate this skill by including items that require respondents to appropriately apply their knowledge

There is an inconsistency on the way of analyzing the answers of questions in assessing financial literacy of individuals. Some researchers consider the total number of correct answers (Volpe et al., 1996; Moore, 2003; NASD, 2003; Worthington, 2004; Atkinson et al., 2006; Borden et al., 2008; Servon and Kaestner, 2008; Hung et al., 2009) but others opt to analyzing the answer of each question separately and in this way a limited number of questions would be asked (Lusardi and Mitchell, 2008b; Lusardi and Tufano, 2009). Furthermore, some researchers (Kempson, 2009) suggested weighting knowledge data to account for the relative relevance and difficulty of the questions.

IV. CONCLUSION

Aiming to profoundly review existing research, this study deduces various insights into financial literacy. Although several financial literacy definitions have been proposed, there is no universally accepted definition. Each group of scholars defines financial literacy through a different point of view. As a result, different perspectives about this concept would end up with varied measurement instruments. Although many studies emphasize the importance of financial literacy on financial decision making or behavior but it seems that financial illiteracy has become the main issue around the world ranging from general groups to specific groups, from people in developed countries to those in developing ones. This conflict calls for necessary steps which must be taken by policy makers who are accountable for relieving the inequalities and poverty by providing both financial and social welfare. Policy makers should take immediate measures since financially illiterate people would probably cause problems in terms of the management of money, debt and investment and as a result the whole society will be affected by these issues.

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