Financial literacy amongst students in South Africa

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In recent years, attention has been increasingly devoted to methods of protecting people from their own financial illiteracy and inability to make informed financial decisions. Policymakers around the world have expressed deep concern about widespread gaps in financial knowledge. For example, Bernanke (2011: 2) has remarked 'In our dynamic and complex financial marketplace, financial education must be a life-long pursuit that enables consumers of all ages and economic positions to stay attuned to changes in their financial needs and circumstances and to take advantage of products and services that best meet their goals

Financial literacy is first and foremost about empowering and educating consumers so that they are knowledgeable about finance in a way that is relevant to their lives and enables them to use this knowledge to evaluate products and make informed decisions. Financial literacy enables people to make better financial decisions, to appreciate their rights and responsibilities as consumers of financial products, and to understand and manage risk

For the financial services industry, more participation and better-informed participants would increase demand for financial products, build competitiveness, promote market transparency and increase efficiency. For the financial industry, it might mean a lower compliance burden. Policymakers would benefit from a lighter regulatory and supervisory burden related to monitoring, intervention and redress in financial markets. For the economy as a whole, more financially-secure households with higher savings rates should contribute to better-functioning markets, increased economic stability and development and a reduced need for future public expenditures

From a developing country perspective, *Interest in financial literacy motivated by:*
-"concerns with the perceived low level of financial capability;
-concerns with the low level of financial access or use; and the
-recognition that finance is a critical element for innovation and growth" Holzmann (2010: 9).

Since the establishment of democracy in South Africa, government policies and initiatives have been aimed at developing a financially inclusive economy. Financial literacy and consumer protection have been identified as key factors in achieving these goals.
considerable number of South Africans still display very low levels of financial literacy and that financial participation lacks depth partly due to gaps in financial knowledge. A significant divide between different population groups with regard to financial literacy is still evident. The baseline survey is concluded with the following statement *"a substantial proportion of the country's population may not be adequately equipped to make sound financial decisions. Indeed,*

the baseline study provides strong evidence for the existence of low levels of financial knowledge in South Africa. The findings of the study support a more comprehensive and aggressive programme of consumer financial education." (Roberts and Struwig, 2011).

The financial services industry in South Africa is also actively involved in financial literacy and consumer education programs. This involvement partly stems from their commitments to financial education under the Financial sector charter. These commitments have recently been expanded under the Financial Sector Code (FS Code) of the Broad based Black Economic Empowerment Act.

However, significant debate continues about the role of financial literacy, the extent of the problem it truly represents and the best way to address it. Defining and appropriately measuring financial literacy is essential to identify barriers to financial well-being and assist in solutions that enable effective financial choice.

University students are potentially rewarding area for financial literacy research. For most students, this is the first time they are required to manage their finances independently, and the first time they are exposed to credit. important to be financially literate before they engage in major financial transactions and contracts.

The financial knowledge, attitudes and behaviours acquired during this period may affect their financial and economic wellbeing, both during their student years and in adulthood in profound ways . Non self-beneficial financial habits and attitudes and lack of financial knowledge can adversely impact on their academic performance, mental and physical well-being, and even their ability to find employment after graduation (Bodvarsson & Walker, 2004; Lyons, 2003, 2004). On the other hand, positive financial behaviours and attitudes contribute to financial satisfaction, life satisfaction, academic performance and academic satisfaction amongst students

The current generation of student are likely to face ever-increasing complexity and diversity in financial products and markets and are more likely to have to bear more financial risks in adulthood, especially responsibility for retirement. They are also unlikely to be able to learn from past generations. This is especially true for students from disadvantaged backgrounds. Research has established a ink between financial literacy and family economic and educational background: those who are more financially literate disproportionately come from highly educated and financially sophisticated families (Lusardi, et al., 2010). Can affect their academic performance. Lyons (2003) financial situation was "likely" or "somewhat likely" to affect the ability to complete a college poor financial management can affect more than students' finances. It can affect their academic performance, mental and physical well-being, and even their ability to find employment after graduation (Bodvarsson & Walker, 2004; Lyons, 2003, 2004). Researchers should develop a scale of financial management responsibility that fits the financial management options available to college students. The findings from this research could be used to develop a "financial fitness quiz" that could be used as a risk assessment tool by college campuses as well as financial professionals and educators who work with young adults. Post-secondary degree is key to leading people out of poverty. But what if paying for the degree means graduating with onerous debt and a poor credit rating?

The first year of university constitutes an especially important transitional stage. Most students are not yet financially independent but are actively learning the skills needed to be financially independent. Non-self-beneficial financial habits developed while young, combined with limited understanding of money management, could endure into the future (Hira, 2002; Varcoe et al., 2006). Investing in a college degree can pay lifelong dividends through increased earnings, create reconomic security, and better quality of life outcomes. However, the increased cost of higher education and emphasis on debt-financing undermines these positive returns to education

The aim of this article is to explore issues such as:

How do South African students engage with financial products and services? What are the income and expenditure patterns for these students? What are their current debt levels and what will be the likely impact on their financial future? How do students learn financial behaviors? How well-equipped are South African students to make financial decisions? What are the determinants of financial literacy among South African students? How can this information aid the design of consumer financial education programs focused on students?

The study will also presents new empirical analysis that provides insight into the connection between financial education, financial experience, and financial knowledge among University students in South Africa. Help to gain better understanding of development of financial behaviors (both desirable and undesirable) in university students. Provide a more nuanced understanding of financial literacy within the constraints applicable in a local setting than available from existing studies.

The demographically diverse student population of the University of the Free State enable us to conduct cost-effective research on students from diverse backgrounds. The result of the research will provide us with a more nuanced understanding of financial literacy within the constraints applicable in a local setting than available from existing studies.

The pilot study will be based on data obtained from an online questionnaire, with undergraduate students form the Economics and Management Science faculty of the University of the Free. Data will be analyzed using regression analysis and analyses of variance. Based on the results from the pilot study, the survey instruments will be refined and then extended to the other faculties at the University of the Free State. Results from the questionnaire will also be supplemented by using information obtained form focus group research.

The survey instrument will provide information on the following:
Use of banking services and financial products
Student loans and financial aid
Socialization around finances
Financial knowledge and interest in increasing their knowledge of money management
Basic demographic information

The survey is partly based on existing US measures, but also include aspects relating to SA context. Questions on store cards. Emphasis on demographic factors: household income, schooling of parents, school attended. How pay for studies, levels of debt. Secondary aim to create demographic, financial profile of student body. Emphasis “motivation and aspiration” questions. Inclusion of Mandell motivation questions.

It is challenging to establish a causal link between financial literacy and economic behavior Early studies found that financial education in schools and workplaces improved financial behavior, but recent work is more mixed Robust literature finds that financial education positively affects knowledge and *intended* behavioral change, and financial knowledge is strongly associated with better financial behavior Fewer studies have demonstrated a convincing direct link between financial education and *actual* behavior change, and measured effects can be relatively small .Moreover, financial education may increase confidence without increasing skills.

Several studies have found that financial literacy is positively related to self-beneficial financial behavior. Hilgert, Hogarth and Beverly (2003) formed a “Financial Practices Index” based upon self-beneficial financial behavior in cash-flow management, credit management, savings and investments. The study found a positive relation between literacy scores and “Financial Practices Index scores Young adults who lack basic financial literacy have been shown to have poor financial decision- making ability as well as increased levels of debt (Norvilitis, Merwin, Osberg, Roehling, Young, and Kamas, 2006).

Literature further suggests that those with higher levels of financial literacy are better able to manage their money, participate in the stock market and perform better on their portfolio choice (see Yoong, 2010; Stango & Zinman, 2009; Hastings & Tejeda-Ashton, 2008; Lusardi & Mitchell, 2008; van Rooij, *et al*., 2007). Moreover, individuals with greater financial knowledge are more likely to accumulate wealth (Lusardi & Mitchell, 2006).

Moreover, there is evidence that the more numerate and financially literate are also more likely to participate in financial markets and invest in stocks (Kimball and Shumway 2006; Christelis, Jappelli, and Padula 2010; van Rooij, Lusardi, and Alessie 2011; Yoong 2011; Almenberg and Dreber 2011; Arrondel, Debbich, and Savignac 2012). It has also been shown that those who are more financially literate are also more likely to undertake retirement planning, and those who plan also accumulate more wealth (Lusardi and Mitchell 2007a, b, 2011a, b). This last finding has been replicated in many other datasets and for additional sub-groups of the population in the U.S. (Lusardi and Mitchell 2008, 2009, 2011d), as well as internationally (Lusardi and Mitchell 2011c). It is also robust to the measure of financial literacy used (basic versus sophisticated financial knowledge; Lusardi and Mitchell 2009, 2011d), how planning is measured (Lusardi and Mitchell 2007a, 2009, 2011b; Alessie, van Rooij, and Lusardi 2011), and which controls are included (van Rooij, Lusardi, and Alessie 2011).

Gerardi, Goette, and Meier (2010) report that those with low literacy are more likely to take up sub-prime mortgages and to default on them. Lusardi and Tufano (2009a,b) find that individuals with lower levels of financial literacy tend to transact in high-cost manners, incurring higher fees and using high-cost methods of borrowing. The less knowledgeable also report that their debt loads are excessive or that they are unable to judge their debt position.. Lusardi, A and

Scheresberg (2013 found that financial illiteracy is trongly associated with the use of aflternaitve financing services, such as high cost pay day loans.

Different definitions of financial literacy

Financial literacy is a broad concept that includes both information and behavior; it is relevant for all consumers regardless of their wealth or income The terms financial literacy, financial knowledge and financial education often are used interchangeably in the literature and popular media Marcolin and Abraham (2006) identified the need for research focused specifically on measurement of financial literacy.

Redmund (2010) notes that various researchers have used the phrase loosely to describe the knowledge, skills, confidence and motivation necessary to effectively manage money. As a result, financial literacy has varying conceptual definitions in existing research, as well as diverse operational definitions and values previous studies relating literacy to education and/or behavior have therefore been constrained to the use of rudimentary literacy measures

.Review by Huston (2011) found that the majority of studies did not include a definition of financial literacy. Only 13% provided a formal definition of the construct operation RAND) would argue that financial knowledge, skills, and behavior, as well as their mutual relationships, should all be considered in an overarching conceptualization of financial literacy. In particular, financial knowledge represents a particularly basic form of financial literacy Financial knowledge, in turn, is reflected in perceived financial knowledge and influences financial skills that depend on knowledge. Actual financial behavior, in turn, depends on all three (actual knowledge, perceived knowledge, and skills). Finally, the experience gained through financial behavior feeds back to both actual and perceived financial knowledge. Still, the relationships are likely to be imperfect, as each also depends on other factors internal and external to the individual (e.g., attitudes, resources)

the literature is that financial literacy has been variably defined as (a) a specific form of *knowledge*, (b) the *ability* or skills to apply that knowledge, (c) *perceived knowledge*, (d) good financial *behavior*, and even (e) financial *experiences*.

OECD: Financial literacy is the combination of consumers'/investors' understanding of financial products and concepts and their ability and confidence to appreciate financial risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being. Financial education, like all types of education, is about empowering individuals so that they are better equipped to analyze diverse (in this case, financial) options and to take actions that further their goals.

The Financial Services Authority (FSA) in the United Kingdom defines financial literacy as "a broad concept, encompassing people's knowledge and skills to understand their own financial circumstances, along with the motivation to take action" (italics added). According to the FSA, financially literate or capable consumers "plan ahead, find and use information, know when to seek advice and can understand and act on this advice, leading to greater participation in the financial services market". Embedded within the definition is the explicit acknowledgement that while necessary, knowledge, awareness or skills are insufficient. Action or behavior is critical. According to the FSA, financially literate consumers "plan ahead, find and use information,

know when to seek advice and can understand and act on this advice, leading to greater participation in the financial services market". This characterization of financially literate behavior comprises four key areas, namely:
Money management, incorporating keeping track of finances and making ends meet
Planning ahead for both expected and unexpected events
Choosing and using financial products
Accessing and using information and advice. Embedded within this is awareness of rights and responsibilities as well as avenues for recourse

With reference to poor consumers in particular, one other framework is of interest. Micro-finance Opportunities and Freedom from Hunger have jointly compiled education material that highlights budgeting, saving, debt management, financial negotiations and banking usage as key dimensions of financial literacy. While there is much cross-over between the two frameworks the difference in emphasis reflects the different market focus which underpins them. Issues relating to the usage of more basic products (for example banking) as well as the importance of confidence and negotiation might warrant greater focus with poorer consumers who might have been financially excluded in the past.

Mandell (2007)
The *ability* to evaluate the new and complex financial instruments and *make informed judgments* in both choice of instruments and extent of use that would be in their own best long-run interests"

Lusardi (2008)
"*Knowledge* of basic financial concepts, such as the working of interest compounding, the difference between nominal and real values, and the basics of risk diversification"

Financial literacy is a measure of the degree to which one understands key financial concepts 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 (Rudmand p. 284).

Financial decisions are greatly influenced by the constant tug between a proliferation of goods and services in the marketplace and a person's limited resources to acquire such goods and services. The National Endowment for Financial Education (2006) illustrates this concept well in its definition of financial literacy: (Financial literacy programs) work to improve the development, acquisition, maintenance, and conservation of scarce resources that allow families and individuals, as they interact with the world around them, to better their levels of living.

Johnson and Sherraden (2007) suggest an expanded definition of financial literacy towards financial capability that includes access to financial institutions and services. They note that participation in economic life should maximize life requires knowledge and competencies, ability to act on that knowledge, and opportunity to act. Whereas financial education is a set of provider outputs, financial capability is a set of consumer outcomes Financial education, remains important viewed through the capabilities lens because it allows a person to develop other capabilities (Nussbaum, 2002; Robeyns, 2005). Unfortunately, current approaches that emphasize financial literacy may fail in this regard because they do not address external conditions that may inhibit financial capability. hA few scholars have argued that knowledge is of little value without ability or skills. Johnson and Sherraden (2007, p. 122) provide an eloquent and effective definition of financial capability: “Participation in economic life should maximize life chances and enable people to lead fulfilling lives; this requires knowledgeand competences, ability to act on that knowledge, and opportunity to act.” Also need the opportunity to put their knowledge and skills to the test hints at social equality and requires more than an individual can achieve on one’s own.

Knowledge of little value without ability or skills. Johnson and Sherraden (2007, p. 122) “Participation in economic life should maximize life chances and enable people to lead fulfilling lives; this requires knowledge and competences, ability to act on that knowledge, and opportunity to act.” Also need the opportunity to put their knowledge and skills to the test and hints at social equality and requires more than an individual can achieve on one’s own.

Some literature suggests financial education and matched savings accounts have a positive impact on savings behavior (Zhan & Schreiner, 2005).. Additional research is needed to determine the impacts of matched savings on developing financial capability. .In order to develop financial capability, we suggest that financial education should include access to financial institutions, possibly with savings incentives. This is not to suggest that financial education by itself is not useful, or that access to financial accounts by themselves cannot also be effective. Instead, we think that the combination of financial education and

Becoming financially capable is a critical step toward establishing financial security, particularly for lower-income, financially underserved consumers. By managing expenses, establishing long-term goals, and effectively navigating the suite of available financial products and services, these consumers put themselves in a better position to weather economic downturns and pursue financial prosperity.

Several researchers specifically examine financial literacy in a youth context. Australia’s National Consumer and Financial Literacy Framework (NCFLF) states, “Consumer and financial literacy is important for all young people to empower them to make informed consumer decisions and to manage effectively their personal financial resources.” According to the Department of Agriculture’s Cooperative State Research, Education and Extension Service (CSREES), “Many young people are unskilled in managing their personal finances, yet this crucial life skill will greatly affect their future economic wellbeing. . . [Youth financial education] help[s] America’s youth understand the basics of money management and develop sound financial habits to expand their opportunities for
the rest of their lives.”

Jump start definition

Financial literacy is the *ability to use knowledge and skills to manage one’s financial* resources effectively for lifetime financial security. Financial literacy is not an absolute state; it is a continuum of abilities that is subject to variables such as age, family, culture, and residence. Financial literacy refers to an *evolving state of competency* that enables each individual to *respond effectively* to ever-changing personal and economic circumstances."

Gaps in the literature: lack of comprehensive definition

Phrase used loosely to describe the knowledge, skills, confidence and motivation necessary to effectively manage money. Varying conceptual and operational definitions in existing research Redmund (2010) . Review by Huston (2011): majority of studies did not include a definition of financial literacy. Only 13% provided a formal definition.

Financial literacy, financial knowledge and financial education often are used interchangeably in the literature. Researchers identified need for research focused on measurement of financial literacy. Marcolin and Abraham (2006) Redmund 2010, Huston (2011).Need to extend concept of financial literacy

Questions developed by Lusardi and Mitchell (2009) on numeracy, inflation, and diversification became standard measure of financial literacy, included in various surveys .Not necessarily comprehensive and may not be appropriate in many settings.(Carpena et al 2012.) Lusardi and Mitchell (2009) : "imperative to expand the range of measures of financial literacy, so as to better evaluate the types of problems that people find most difficult." Concept of financial literacy should be extended, especially in the developing country context. Need to consider context of high poverty, low access to finance, and lack of consumer finance (Holzmann, 2010).

Carpena et al 2012: need to extend concept of financial literacy. Survey questions that have by now become the standard measure of financial literacy, developed by Lusardi and Mitchell (2009) on numeracy, inflation, and diversification included in various surveys in many corners of the world standard set of questions to assess financial. Not necessarily comprehensive and may not be appropriate in many settings. Indeed, Lusardi and Mitchell (2009) write that it is "imperative to expand the range of measures of financial literacy, so as to better evaluate the types of problems that people find most difficult." Developing context include high poverty, low access to finance, and lack of consumer finance protection, that are essential for measuring financial literacy (Holzmann, 2010). Example, where most households are uneducated and hold informal savings, it may be important to assess financial literacy based on knowledge of bank account opening requirements, as opposed to ability to calculate interest rates. Concept of financial literacy should be extended, especially in the developing country context. Van Rooij et al. (2007) highlight the fact that many existing financial literacy measures are crude, typically with very few items. Clearly there are pressures to reduce the length of instruments for placement in large surveys where respondent time is dear. However, a basic property of scales is that their reliability (not to mention their ability to cover the construct domain) increases with the number of items.

However, significant debate continues about the role of financial literacy, the extent of the problem it truly represents and the best way to address it. A large part of this debate may be linked to the fact that a great deal of variation continues to exist in how researchers define and measure financial literacy itself.

Emprirical evidence on financial literacy levels

Various studies revealed alarmingly low level of financial literacy is Eighty20, 2008; and Nieuwenhuyzen, 2009, OECD 2012, Japelli 2010). Engagement with formal financial institutions shockingly low, especially in rural areas
Scores based on people's definitions of various financial concepts (focus groups 2008):
State pensioners LSM 1-5 rural 26%
Students LSM 1-5 urban 34%
Salaried LSM 1-5 urban 37%
Salaried LSM 6-10 urban 67%
Similar picture emerge form annual Finscope survey

Levels of knowledge lowest in LSM 1-5, rural areas, women, Black people.
Japelli (2010) SA lowest score of 55 countries surveyed. Use IMD WCY indicator of economic literacy. Ask respondents - senior business leaders- to evaluate the sentence: Economic literacy among the population is generally high. Assessing financial literacy in 12 countries : OECD Pilot Exercise Atkinson and Messy (2012) 19 questions that cover knowledge, attitude and financial behaviour. **South Africa lowest overall score** Financial literacy levels higher in terms of behaviour (only 33% of people obtained high knowledge score) Only 49% believed their money would buy less in 1 year. Large portion scored 0 - 2 out of 8 for knowledge questions.
Focus group evidence from Eighty 20 (2008) suggest that students tend to disengage when the topic of usage of financial products and services come up. Believe that people who are good with their money plan their expenditure and save their money. Their most significant lesson with money is to respect it since money 'makes the world go round' and to save money. **Know and understand the concept of budgeting they are not necessarily using it.** ***Tend to disengage when the topic of usage of financial products and services come up***. Believe that people who are good with their money plan their expenditure and save their money. Their most significant lesson with money is to respect it since money 'makes the world go round' and to save money. Know and understand the concept of budgeting, but they are not necessarily using the concept.

The Eighty2o focus group results is at the moment one of the only pieces of extensive information about the attitude of South Africans about several aspects of financial behavior and money management. One relevant question is whether these attitude are still valid.

Salaried workers, LSM 1-5, urban have thought about life and money and are really practical about teaching children to save and to prepare them for a 'better' life. Report that saving is the most important lesson they have learnt they do not save because they have nothing left. Acknowledge lack of skills to manage their own money. Tend to borrow from friends and family , weary of paying interest– Tendency for planning for the future is low. Believe savings account , funeral plan is the most important financial products. Rely on the TV, radio and newspapers for financial information. *None able to calculate interest*

Credit behaviour of South Africans

South Africans' propensity for consumption and indebtedness receives constant attention from the media, economists and monetary authorities. Our understanding of indebtedness among low-income consumers is rather limited

Hawkins (2012) for NCR: focus groups Social aspirations are a key motivator to obtain credit Often got into debt through spontaneous credit purchases, without much consideration. Store cards often first taste of credit Common thread : education has failed them. Schooling did not enable them to prepare a budget, for the realities of credit contracts

Lusardi, Mitchell and Curto (2010) confirm low levels of financial literacy of young adults. They found that fewer than a third possessed basic understanding of interest rates, inflation, and risk diversification (Lusardi et al., 2010).

Kotzè and Smit (2008) :perceptions of Business Management students (n=286) with working and management experience. Found that there is a need for increased financial education and financial literacy in South Africa. Oseifuah (2012) students at the University of Venda structured questionnaire based on previous studies (see *ANZ Survey of Adult Financial Literacy in Australia: Final Report,* 2003; the Media Research Consultants Pte Ltd, 2005; Jorgensen, 2007; Chen and Volpe, 1998; Nieuwenhuyzen, 2009) . 39 content questions on:– financial attitude, knowledge, behaviours, and influences, as well as 12 personal characteristics items. The financial knowledge section consists of 6 questions on general financial knowledge, the financial attitude section comprises 7 questions, the financial behaviour section contains 8 questions, and the section on influences contains 6 questions/ pilot study was administered to 50 final (third) year Bachelor of Commerce (Accounting) students. Only 38% of accounting majors are financially knowledgeable **.** Male students more likely to be more knowledgeable about financial matters than their female counterparts. calls for an URGENT, SYSTEMATIC AND SUSTAINED programme for financial education of South Africa's youth

Wagland (2006) cites the need to know more about the emotional and other barriers to making beneficial financial decisions; she encourages researchers not to assume that lapses in financial literacy and knowledge *per se* are the most important, or only, barriers preventing individuals from successfully navigating lifecycle financial decisions. And as Caskey (2006) and Meier and Sprenger (2008) discuss, means to achieve motivational improvements must be addressed as well.

Mandell (2007b) and Meier and Sprenger (2007) found significant evidence that students experience apathy rather than motivation in terms of managing and setting goals for their own personal finances and this lack of motivation correlates with students' consistently low financial literacy scoresand reveal that programs addressed to these students need to teach *why* financial literacy is important. Meier and Sprenger (2007), in a study of self-selection into adult financial literacy programs, "Evidence from our field study shows that, even controlling for education and prior financial knowledge, time preferences17 influence the acquisition of new information. . . .

Jump$tart Coalition for Personal Financial literacy is the ability to use knowledge and skills to manage financial resources effectively for a lifetime of financial well-being. This definition stresses the importance of ability, and it speaks to knowledge, skills and life changes. the existing definition does not stress the importance of decision making and planning, nor the influence of an increasingly complex and volatile economy.

Not having a precise and consistent construct conception limits the ability to conduct comparative analyses or assess financial literacy rates and their subsequent impact on financial well-being. This is a critical barrier because all other stages of instrument development depend on having a complete and well-defined construct (Huston 2010:350).

Based upon a review of research studies since 2000, the many conceptual definitions of financial literacy fall into five categories: (1) knowledge of financial concepts, (2) ability to communicate about financial concepts, (3) aptitude in managing personal finances, (4) skill in making appropriate financial decisions and (5) confidence in planning effectively for future financial needs (Redmund p. 279)

Content of different definitions the literature is that financial literacy has been variably defined as (a) a specific form of *knowledge*, (b) the *ability* or skills to apply that knowledge, (c) *perceived knowledge*, (d) good financial *behavior*, and even (e) financial *experiences*. Huston 4content areas were used to varying degrees: Money basics (time value of money, purchasing power, personal financial accounting concepts). Intertemporal transfers of resources between time periods, including both• borrowing (and investing. Protecting resources (either through insurance products or other risk management techniques). (Chen and Volpe 2002; Financial Fitness for Life 2008; Jump$tart Coalition for Personal Financial Literacy 2008; National Endowment for Financial Education 2006; National Foundation for Credit Counseling 2008; U.S. Department of Treasury 2006. Other include recognizing and avoiding abusive lending programs (National Foundation for Credit Counseling 2008) and homeownership counseling (National Endowment for Financial Education 2006

In fact, few the operational definitions of financial literacy most commonly used in contemporary research fell within four categories—budgeting, saving, borrowing and investing—all of which are behavior or ability based (Chen and Volpe 2002; Financial Fitness for Life 2008; Jump$tart Coalition for Personal Financial Literacy 2008; National Endowment for Financial Education 2006; National Foundation for Credit Counseling 2008; U.S. Department of Treasury 2006). Other dimensions that do not fall cleanly into the four categories include understanding and buying insurance (Chen and Volpe 2002; Morton 2005; Wi$eUp 2008); recognizing and avoiding abusive lending programs (National Foundation for Credit Counseling 2008) and homeownership counseling (National Endowment for Financial Education 2006; National Foundation for Credit Counseling 2008).

Inclusion of “Mandell motivation” questions. To determine relevance of understanding basic concepts of personal finance. Perhaps apathy concerning their own finances is based upon an incomplete understanding of responsibility on individuals to take responsibility for actions and insure their own future (Lerman & Bell, 2006). Absent these concerns, it is hypothesize that students may lack the intrinsic motivation to learn and retain concepts of personal financial management. Designed to see whether students believe financial difficulty results from their own actions or was largely out of their control. Assesses student perceptions on seriousness of insufficient financial resources

Examples of "*attitudes " questions*

Risk tolerance: willingness to accept the possibility of a loss in order to achieve greater
Time sensitivity: willingness to trade immediate reward for greater gain at a future
Locus of control: belief that one is in control of matters that affect oneself
Fatalism: belief that bad things are more likely to happen to oneself than to others; and
General confidence in financial matters: belief that the individual has enough knowledge and understanding to carry out financial transactions successfully.

The specific number of instrument items primarily depends on adequate representation of each domain. Kim and Mueller (1978, p. 29) proposed one rule of thumb that the minimum number of items having meaningful loadings on a domain factor varies between three and five. Assuming four personal finance content areas would suggest the minimum items required would be between twelve and twenty.
As for instrument structure, an accepted approach is to include at least three to five items per content factor resulting in initial instruments with twelve to twenty items (Kim and Mueller 1978) if the four content areas are used. Thus, initial instruments consisting of as few as three items (Henry, Weber, and Yarbrough 2001; Lusardi 2008a; Lusardi and Mitchell 2007a, 2007c, 2008c) would appear to be deficient to capture the breadth of human capital specifically related to personal finance.

Many self-reports assess perceived knowledge or confidence in knowledge (i.e., how much you think you know). However, consumers often think that they know more than they actually do (OECD, 2005) – a common finding that has been demonstrated not just in financial matters, but across a wide range of knowledge and abilities (Alba & Hutchinson, 2000; Lichtenstein, Fischhoff, & Phillips, 1982; Yates, 1990). And whereas actual and perceived knowledge are often correlated, this correlation is often moderate at best. For example, Agnew and Szykman (2005) found correlations between actual and perceived financial knowledge that ranged from .10 to .78 across demographic groups (the median correlation was .49 across 20 categories). Similar variation has been documented in non-financial knowledge domains (e.g., Alba & Hutchinson, 2000). Hence, caution should be taken when using perceived knowledge as a simple proxy for actual knowledge.

The measurement of financial literacy in PISA

Emerging evidence suggests that perceived knowledge, or confidence, may have predictive ability of its own, above and beyond actual knowledge. This phenomenon may derive from the fact that individuals do not usually know the extent of their actual knowledge. They must instead decide on courses of action (e.g., to collect more information, to make an educated guess) based on how much they think they know (Lusardi & Mitchell, 2007b). For example, Parker, Yoong, Bruine de Bruin, and Willis (2008) found that confidence in knowledge predicts selfreported retirement planning and savings, as well as performance on a hypothetical investment task, independently of the effect of actual knowledge. These results suggest that whereas actual knowledge promotes such behavior, so does perceived financial knowledge (even if it does not reflect actual knowledge). Similar to the distinction between actual and perceived knowledge, warnings are warranted against conflating knowledge, ability, and behavior. Knowledge of how financial systems work is likely an important underpinning for other financial skills (e.g., negotiating mortgage terms, navigating an investment website) and performance behavior (e.g., mutual fund fee minimization). However, skills and behavior are also likely to be influenced by other factors, such as access to resources, social networks, etc. Therefore the distinctions among actual knowledge, perceptions of knowledge, the ability to use that knowledge, and actual behavior are non-trivial.

Financial literacy ... Literacy an expanding set of knowledge, skills and strategies that individuals build on throughout life, rather than as a fixed quantity, a line to be more than the reproduction of accumulated knowledge, a mobilisation of cognitive and practical skills, and other resources such as attitudes, motivation and values. The PISA 2012 assessment of financial literacy will draw on a range of knowledge and skills associated with development of the capacity to deal with the financial demands of everyday life in contemporary society. *... is knowledge and understanding of financial concepts ...* such as interest, inflation, and value for money *and the skills, ...* generic cognitive processes as accessing information, comparing and contrasting, extrapolating and evaluating – applied in a financial context. e ability to calculate a percentage or to convert from one currency to another, and language skills such as the capacity to read and interpret advertising and contractual texts. skill in managing the emotional and psychological factors that influence financial decision making. *motivation and confidence ...* motivation to seek information and advice in order to engage in financial activities and the confidence to do so. These attributes are considered as a goal of financial education, as well as being instrumental in building financial knowledge and skills. *... to apply such knowledge and understanding in order to make effective decisions ...* translates into a measure of young people's ability to transfer and apply what they have learned about personal finance into effective decision-making.

... across a range of financial contexts ... relate to young people's present daily life and experience, but also to steps they are likely to take in the near future as adults*... to improve the financial well-being of individuals and society ...* good understanding, management and planning on the part of individuals has some collective impact on the wider society – in contributing to national and even global stability, productivity and development.

... and to enable participation in economic life.

importance of the individual's role as a thoughtful and engaged member of society better equipped to make decisions that are of immediate benefit to themselves, and also to constructively support and critique the economic world in which they live. four content areas f *money and transactions, planning and managing finances, risk and reward,* and *financial landscape*.

Money and transactions knowing why some methods of saving or investing are more risky than other, understanding how to limit the risk to personal capital, and the benefits of diversification. It includes recognising that there is a wide range of insurance products that are appropriate for different needs and circumstances. potential risks or rewards associated with: various types of investment and savings vehicles, various forms of creditfluctuations in interest rates and exchange rates, and market volatility. Financial landscape knowing the rights and responsibilities of consumers in the financial marketplace and within the general financial environment, and the main implications of financial contracts. Information resources and legal regulation are also topics relevant to this content area. understanding of the consequences of changes in economic conditions and public policies, such as changes in interest rates, inflation, taxation or welfare benefits. understand that individuals have choices in spending and saving and each action can have consequences for the individual and for society; understand that buyers and sellers have rights, such as being able to apply for redress; understand that buyers and sellers have responsibilities

Non-cognitive factors motivation and confidence, attitudes which, according to some, have great influence on money management behaviour (Johnson & Staten, 2010). PISA conceives of financial attitudes and experiences as indicators of financial literacy in their own right interactions with the cognitive elements of financial literacy. potentially constitute useful baseline data for any longitudinal investigation of the financial literacy and financial behaviour of adults.

financial literacy expert group identified four non-cognitive factors for focused attention: access to information and education, access to money and financial products, attitudes towards and confidence about financial matters, and spending and saving behaviour.

Attitudes towards and confidence about financial matters
Risk tolerance: willingness to accept the possibility of a loss in order to achieve greater gain (Barsky, Juster, Kimball, & Shapiro, 1997; Holt & Laury, 2002);
Time sensitivity: willingness to trade immediate reward for greater gain at a future date (Barsky, et al., 1997; Holt & Laury, 2002);
Locus of control: belief that one is in control of matters that affect oneself (Rotter, 1966);
Fatalism: belief that bad things are more likely to happen to oneself than to others; and
General confidence in financial matters: belief that the individual has enough knowledge and understanding to carry out financial transactions successfully.