REVIEW OF COLLEGE STUDENTS' FINANCIAL KNOWLEDGE AND LITERACY STUDIES

Mohamad Fazli Sabri
Department of Resource Management & Consumer Studies
Faculty of Human Ecology
Universiti Putra Malaysia

Introduction

The terms financial literacy, financial knowledge and financial education often are used interchangeably in the literature and popular media (Huston, 2010). Huston (2010) analysed seventy-one individual studies from fifty-two different data sets on broad range of financial literacy or financial knowledge measures where majority of the studies were published between 1996 and 2008. Financial literacy constructs were assessed by whether a definition was provided and whether multiple terms were used to represent the same construct. The majority of studies (72%) did not include the definition of financial literacy. Forty-seven percent of the studies analysed used the terms financial literacy and financial knowledge synonymously. After examining the instrument content (commonality), four main categories emerged: personal finance basics, borrowing, saving/investing and protection. As proposed by Huston (2010), financial literacy could be conceptualised as having two dimensions, which are, understanding personal finance knowledge and using the personal finance knowledge (application). Financial literacy could be defined as measuring how well an individual can understand and use personal finance-related information.

According to Huston (2010) financial knowledge is an integral dimension of financial literacy, but not equivalent to financial literacy. Financial literacy has an additional dimension which implies that an individual must have the ability and confidence to use his/her financial knowledge (application) to make sound financial decisions.

Financial literacy means having the knowledge, skills and confidence to make responsible financial decisions (Task Force on Financial Literacy, 2009). Based on Remund's (2010) review of research studies since 2000, 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. Literacy is more than simply a measure of knowledge because it reflects one's ability to perform a host of tasks related to money, including but not limited to earning, protecting, and spending that money. Remund (2010, p. 284) defines financial literacy as "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". "Financial literacy is the ability to use knowledge and skills to manage financial resources effectively for a lifetime of financial well-being, (Remund 2010, p.285)". In conclusion, financial literacy is not simply a measure of one's knowledge on personal finance. Financial literacy has a broader definition which suggests that individual must use his or her knowledge on personal finance with confidence in making sound financial decision.

An overview of studies conducted on financial knowledge and financial literacy of college students

There is no comprehensive literature focused on financial literacy and/or financial knowledge of college students. Most previous studies focused on high school students or adults (Danes, Huddleston & Boyce, 1999; Hilgert, Hogarth & Beverly, 2003; Mandell, 2008). Eighteen comprehensive empirical studies on the financial literacy or financial knowledge of college students, which dated from 1987 to 2010, were found in the reviewed literature either in the U.S. or outside the U.S. The first reported study (Danes & Hira, 1987) found no previous studies on college students and financial literacy. Danes & Hira conducted a study among 323 college students' from Iowa State University using a questionnaire of 51 items to measure college students' knowledge concerning credit cards, insurance, personal loans, record keeping and overall financial management. The study indicated that college students have low financial knowledge. They found that males, upper classman and married students were knowledgeable in most area of personal finance.

The second study (Volpe, Chen & Pavlicko, 1996) examined 454 college students' knowledge of personal investment literacy at Youngstown State University. The study also explored the relationship between level of investment literacy and gender, academic discipline, and experience. Students' knowledge on investment was measured based on questionnaire adopted from the Money Forecast Issue of Money Magazine (1993) developed by John Markese, president of the American Association of

Individual Investors. There were ten questions with multiple choice answers on variety of personal investment topics such as risk, diversification, financial advisor qualifications, tax planning, business math, interest rate, stock, bond, mutual fund, and global investing. Each correct question was worth 10 points. The failing score was 40 or lower and those who received score of 70 or higher was considered as knowledgeable about the basics of personal investment. The overall mean of scores was 44 which indicate that students' have inadequate knowledge about personal investment. The results revealed that female students and non-business major were less knowledgeable about personal investment.

A third study by Markovich and DeVaney (1997) surveyed 500 selected college seniors at a large midwestern university on personal finance knowledge and practices. A total of 21 multiple choice questions concerning credit use, loan payment, emergency funds, and insurance use were asked to measure students' financial literacy. One point was given for each correct answer. The total knowledge scale ranged from 0 to 21 with a mean of 9.31 (SD=3.67) suggested that college seniors lack the personal finance knowledge. Male seniors and seniors in the school of management tend to have higher knowledge on personal finance. The results also reported that seniors with three or fewer cards tended to have less outstanding credit card debt than those with four or more cards. College seniors were more satisfied with their financial management skills than with their knowledge.

Chen and Volpe (1998) conducted personal financial literacy study among 924 students from 13 college campuses, included both public and private schools in California, Florida, Kentucky, Massachusetts, Ohio and Pennsylvania. This study also examined the relationship between financial literacy and students' characteristics; and impact of financial literacy on the students' opinions and decisions related to financial issues. The survey consists of 52 questions including 36 multiple-choice questions on financial knowledge, eight questions on opinions and decisions, and eight questions on demographic information. Financial literacy questions covered various topics on general knowledge, savings and borrowing, insurance and investments. The mean percentage of correct scores were grouped into (1) high level of knowledge (more than 80%); (2) medium level of knowledge (60% to 79%); and (3) low level of knowledge (below 60%). The overall mean percentage of correct scores was 52.9%, indicating on average, the students answered only about half the survey questions correctly. The results suggest that the students' have inadequate knowledge on personal finance. Results also revealed that non-business majors, women, students in lower class rank, students' under the age of 30 and those with little working experience have lower levels of financial knowledge. Students with less financial knowledge tend to hold wrong opinions and make the correct decisions in the areas of general knowledge, savings and borrowing, and investments.

Using the same data set, Chen and Volpe (2002) studied gender differences in knowledge of personal finance. Financial literacy scores were grouped into three categories, but the cut-off point scores was slightly different than the prior study in 1998: (1) low level of knowledge (scores from 0 to 39%); (2) medium level of knowledge (scores between 40 and 59%); and (3) high level of knowledge (scores between 60 and 100%). The results reported that women scored lower than men in 22 out of 36 questions indicating that women were less knowledgeable about personal finance. Financial literacy was related to education (business major) and experience (age, class rank, working experience and age) factors. The results also revealed that men have higher level of enthusiasm and confidence in personal finance issues. Majority of students reported that they learned financial knowledge through their parents.

Beal and Delpachitra (2003) conducted a study of financial literacy among 789 students at the University of Southern Queensland (USQ) in Toowoomba during the first semester of 2002. A total of 25 multiple choice questions concerning five general personal finance areas such as basic financial concepts, financial markets and instruments, financial planning, making financial analyses and decisions and insurance were asked to measure the students' financial literacy. In addition, nine questions asked for demographic information and a one question measured the students' risk tolerance based on a five-point Likert scales. Students' were classified into two groups, high achievers and low achievers based on the median score of correct answers. The mean of correct answers was 13, the weighted mean 14.8, and the median 15 which indicate that the students' have modest financial literacy. The results showed that the students' have the least decision-making skills and knowledge of insurance. They found that male students, with greater work experience, and higher income significantly produced the higher scores on financial literacy. Those who reported that they are risk averse were less financial literate.

Jones (2005) examined college students' knowledge and use of credit. Data were collected among 216 freshmen students in 2002 from the College of Human Environmental Sciences at a southern university. Credit knowledge was measured based on the sum of correct responses to the six credit knowledge questions ranged from general questions about the advantages/disadvantages of credit to specific questions about grace periods. The score was calculated on a 100-point scale. The mean credit knowledge scores were 56 and students scored significantly higher on the general questions than on the specific questions. The regression results revealed that male and white students scored higher on credit knowledge.

An eighth study by Avard, Manton, English, and Walker (2005) surveyed 407 college freshmen’s at Texas A&M University using 20 multiple choice questions dealing with basic knowledge on financial issues such as financial planning, financial records, interest rates, tax, savings, investments, home mortgage, insurance and retirement. Each question was valued at five points resulting in a total of 100 possible points for all 20 questions with four answer choices .They found that more than 92% of the students scored below 60% thus failing the test based on a passing score of 60 and above. There is not much difference between male and female performance on the financial knowledge test score.

A ninth study by Murphy (2005) examined financial literacy of 277 college students attending a PBU (predominantly Black University) in the southeastern United States. Financial literacy was measured based on ten questions that covered a variety of topics such as income taxes, credit, short term savings, investing for retirement, social security, future college costs, and home ownership. The overall mean score was just over three correct questions out of ten. The results show that male, students age 21 and over, business major, and students from more educated families scored better in financial literacy test. The study found the three important factors, in explaining whether students would have higher or lower levels of financial acumen were race, major and parental education level.

Norvilitis, Osberg, Young, Merwin, Roehling and Kamas (2006) explored factors to be the causes and effects of credit card debt among 448 students from five colleges in three states in the midwestern, northeastern and southern United States. Three sets of risk factors were included to study the most predictive factors of student credit card debt (financial knowledge and attitudes, personality factors and demographic factors). Financial knowledge was measured using The Jump$tart Coalition for Personal Financial Literacy instrument (i.e. financial literacy surveys of high school students) which consists of 33 multiple-choice questions on credit cards, insurance and other personal finance topics. The mean score of financial knowledge was 60%, indicating college students scored slightly higher than the mean score for high school students (50.2%) in 2002. The results show that lack of financial knowledge, age, number of credit cards, delay of gratification, and attitudes toward credit-card use were related to debt.

Robb (2008) explored the relationship between college students’ personal financial knowledge and credit card use behaviours among 1,354 college students at a large, public university in the southeast. Personal financial knowledge was measured using a six-question scale designed to capture the general financial information. The results showed that financial knowledge had impact on whether students reported having credit cards at the maximum limit, using one credit card to pay off another, always paying off cards at the end of the month, how often they reported making only the minimum payment, delinquency, whether they reported going over their credit card limit, and whether they took cash advances on their cards.

Eitel and Martin (2008) used the Jump$tart survey to explore financial literacy among 204 female first-generation college students. The mean scores for financial literacy were 58.1%. The findings showed that white or caucasian and older students have greater test scores on financial literacy. Borden, Lee, Serido and Collins (2008) examined the influence of a financial education seminar (Credit Wise Cats) on attitudes, knowledge and intentions towards financial responsibility of 93 college students. The financial knowledge score was computed based on these seven items which indicate whether each of seven items did or did not reflect good financial management practices with correct answers coded as 1 and incorrect answers coded as 0. Examples of items included were: paying off store and other credit cards each month and having a high APR credit card. The study found that students had higher financial knowledge at pre-test (M= 6.08, SD=1.32) and also had significantly higher financial knowledge score at post-test (M= 6.51, SD=.90). Male students show more financial knowledge than female students. Findings suggest that financial education seminar increased students' financial knowledge, increased responsible attitudes toward credit, and decreased avoidant attitudes toward credit.

Robb and Sharpe (2009) studied the relationship between personal financial knowledge and credit card behaviour among 6,250 college students at a large midwestern university. Financial knowledge was measured using six questions (multiple choice answers) which were drawn from the 2006 Jump$tart Survey and from research conducted by Chen and Volpe (1998) on various topics such as credit card, investment, credit history, loans, APR and risk-return relation. The total number of correct responses were summed to create financial knowledge score (independent variable). On a scale of zero to six, less than half of the students were (44.9%) able to answer 4 or more of financial knowledge questions correctly. The results indicate that the relationship between financial knowledge and actual behaviour was not clear. For example, they found that students with higher financial knowledge had significantly higher credit card balances.

Another study on financial knowledge was conducted by Heckman (2009) from a convenience sample of college students at a midwestern U.S. university. This study was designed to evaluate the determinants of personal finance knowledge among college students and how this knowledge affects students' perceived self-efficacy in dealing with financial issues. A 20-item personal finance index from Avard et al., (2005) was used to measure personal financial knowledge. The mean and standard deviation of personal financial knowledge scores were 11.56 and 3.76 indicating that students had modest scores. The study found that financial knowledge was significantly positive associated with self-efficacy, holding age and gender constant which suggest more knowledgeable students should lead to more effective and confident students.

Lalonde and Schmidt (2009) examined financial literacy and factors that contribute to financial literacy among 192 college students at a small liberal arts college in the northeastern United States. Financial literacy was measured using the Jump$tart survey which consists of 57 questions: 31 of the questions were designed to test students' knowledge on four areas (income, money management, savings and investment, and spending and debt); another 26 questions were on demographic information. The average score for financial literacy question was 60.6%. Students performed best on questions related to income and worst on saving and investment questions. They found that the number of credit cards and students' interest in personal finance were the most significant predictors of financial literacy. Contradict to previous studies, women have a higher level of financial literacy than men.

Current study on financial knowledge was conducted by Xiao, Serido, and Shim (2010) which examined the associations among financial education, financial knowledge, and risky credit behaviour of college students. Data were collected at a university in the southwest during the spring of 2008. A total of 2,908 students participated in this study. For the purpose of the present study, only those students who reported owning at least one credit card were included. Financial knowledge was measured using both subjective and objective knowledge. Subjective knowledge refers to students' self assessment of their financial knowledge on a five-point scale from 1 (very low) to 5 (very high). Objective knowledge was measured using an eight-related, true-false question which was developed by Hilgert, Hogarth, and Beverly (2003). The mean score for objective knowledge was 3.53 out of 8 indicates that students answered less than half of the questions (44%) correctly. The mean score for subjective knowledge was 3.4 out of 5 suggest that students believe their financial knowledge is between moderate and high. The results show that personal finance course may contribute to subjective knowledge of students, and in turn may contribute to a lower likelihood of engaging in risky credit behaviours (risky paying behaviour). The results also revealed that objective credit knowledge reduces both risky paying and borrowing behaviours.

Sabri, MacDonald, Hira, and Masud (2010) investigated the impact of personal and family background, academic ability, and childhood consumer experiences on the financial literacy of college students in Malaysia. Data were collected among 2,519 college students from eleven colleges (6 public colleges and 5 private colleges) in 2005-2006. Financial literacy was measured by testing for correct answers on 25 questions dealing with financial goals, financial records, saving, investment, retirement, banking system, time value of money, wills, insurance, education loan, and general knowledge on personal finance (true or false answer choice). The average financial literacy score was 11.8 which indicate that students answered less than half of the questions correctly. The results shown that Chinese, students who live on campus, and those who attended private colleges were less likely to be financially literate. However, those students who discussed finances with their parents (childhood consumer experience) have positive relationship with financial literacy.

Summary

In summary, there is no standard measurement of financial literacy and or financial knowledge of college students. The studies revealed that lack of financial knowledge has become a growing problem either in U.S. and other countries. The literature overview has shown the evidence that financial literacy and financial knowledge often are used interchangeably. However, the current literature suggest that financial literacy and financial are not equivalent. To consider one's financial literate, he or she should able to use knowledge on personal finance to make sound financial decisions.

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