Financial Literacy and Behavioral Biases among Traditional Age College Students

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Abstract

In this paper, we examine several financial literacy issues facing college students. We identify college student perceptions about personal finances, assess student financial literacy knowledge, and evaluate student awareness concerning savings and retirement positions.

We find that basic financial literacy is not the only factor in making sound financial decisions. Our results show the majority of the college students surveyed are financially literate and have the ability to make informed decisions about their personal finances in the short-run. While our respondents appear confident in making short-run financial decisions, their behavior tends to suggest that their confidence is somewhat misguided. In addition, a large number of the students surveyed feel they do not have the requisite knowledge to make wise retirement planning choices. Further, several respondents report a distrust of retirement plans offered by private companies, which may lead to suboptimal retirement savings.

Keywords: financial literacy, behavioral biases, retirement savings, college students

1. Introduction

Financial literacy allows one to understand the basics of budgeting, saving and investing. This knowledge is particularly important to college students since sound financial planning at the beginning of one's career is crucial for long-term financial well-being and retirement.

There has been a tremendous amount of academic and policy oriented research conducted during the past 10 years investigating the connection between financial literacy and savings, personal debt levels and savings for retirement among households and individuals (Lusardi and Mitchell 2007a, and Van Rooij et al. 2011). The majority of research does not find strong relationships between financial education and financial behavior. Several hypotheses have been put forward to explain this puzzling finding. One widely cited reason is the ineffectiveness of current financial literacy education. Volpe, Chen, and Liu (2006) note financial behavior is difficult to change. Therefore, they assert that stronger education programs are needed to promote financial literacy. The current environment of simple interventions or financial literacy short courses may not be relevant, interesting or adequate to provide necessary financial literacy skills. In addition, they note that finding knowledgeable and engaging teachers may not be easy.

The recent proliferation of financial markets has introduced a multitude of new financial instruments and services to the economy which in turn has led a wide range of academics, politicians, and industry group advocates to express concern that low levels of financial literacy may be harmful to investors (Lusardi and Mitchell, 2007b). Those concerns led Congress to include a financial literacy component to the No Child Left Behind Act of 2001.

Several researchers have attributed low personal savings and high personal debt levels to financial illiteracy (Kinzie, 2007 and Lusardi and Mitchell, 2006, 2007a). According to Mason and Wilson (2000), financial literacy is defined as the individual's ability to obtain, process, and comprehend the relevant information necessary to make financial decisions with an understanding of its potential consequences. On the other hand, financial illiteracy is defined as the absence of a solid knowledge base related to financial markets and financial assets, and the inability to evaluate or make effective financial decisions.

Financial literacy is especially important to recent university graduates. University students usually accumulate a substantial amount of debt to complete their education and incur the responsibility of repaying their loans after their graduation. According to the Financial Literacy & Education Commission (2006), 50% of education costs on average are related to student loans, consumer loans and credit cards.

In this paper, we investigate several financial literacy issues facing college students. We conduct an original survey in two universities, for privacy concerns we will call them University 1 and University 2. The survey identifies college student perceptions concerning personal finance positions, assesses student financial literacy knowledge, and measures college student knowledge concerning basic financial concepts.

This paper provides new perspectives about the impact of financial literacy on savings and retirement problems that is not fully researched in the existing literature. In this paper, we explore the socioeconomic factors that may influence the different types of savings decisions among college level students. We find that financial literacy is not the sole determinant when it comes to explaining improper or inadequate long-term savings and retirement decisions. Our results show that the majority of the college students actually have the basic financial and economic knowledge to make sound decisions about their current personal finances. However, we also find that a large number of the college students feel they lack the information needed to make wise retirement decisions. Surprisingly, over a third of the respondents indicate a lack of trust in retirement accounts offered by private companies which can in turn stifle retirement savings.

The remainder of the paper is organized as follows: Section 2 provides a literature review of previous studies related to financial literacy, savings and retirement issues. Section 3 covers the empirical hypotheses tested in the paper. Section 4 elaborates on the data and the methodology used in the paper. Section 5 reports the results. Finally, section 6 concludes the paper.

2. Literature Review

Volpe, Chen and Liu (2006) provide an overview of the studies conducted in the 1990s by private firms to assess financial literacy among adults. The primary criticism levelled against these privately-sponsored studies is their alignment with the corporate interests of the surveying party. Volpe et al. noted that while there have been studies conducted among high school and college students to assess their financial literacy, these studies tend to be limited in scope and performed in only a few institutions.

Jump$tart, a non-profit organization which focuses on improving financial literacy among youths, conducted the most prominent study of financial literacy among high school students to date. Jump$tart administered the same exam to high school seniors between 1997 and 2006. The exam included questions on money management, savings, investment, credit and income as a means of assessing financial literacy. The results are far from stellar. Jump$tart reported an average score of 57 percent in 1997 (with 60 percent being a passing score), with scores decreasing significantly in subsequent years (2000-2006).

Chen and Volpe (1998) conducted similar financial literacy tests for college students in 13 public and private universities. The authors report an average financial knowledge score of only 53 percent. The authors find that business majors generally scored higher than other majors. In addition, students scored highest on questions where they had some experience such as auto insurance, apartment leases, and scored lowest on questions where they had the least experience such as taxes, life insurance and investments. Chen and Volpe (1998) concluded that financial experience could increase financial literacy.

Savings and retirement decisions by individuals require knowledge of both Social Security and employer-sponsored pensions as well as a deep understanding of core financial principles such as the time value of money. Bernheim (1988) studied the Social Security Retirement History Survey (RHS) and found that many adults do not know important features of their Social Security entitlements and pensions. He reported that adults do not know their expected Social Security benefit estimates and often predict inaccurate benefits or do not know the benefits at all.

Mitchell (1988) explored the issue of company pensions plans and found that many workers lack basic knowledge of the characteristics of the pension plan. She utilized the Survey of Consumer Finances (SCF) and found that only half of employees who were required to contribute to their pensions did so. In addition, more than one-third of employees did not know about early retirement features and other characteristics of their pension plan.

Gustman and Steinmeier (2005) using the 1992 Health and Retirement Survey (HRS), report that the majority of those surveyed do not know their Social Security or pension entitlements. Only 27 percent of respondents gave estimates within 25 percent of their actual Social Security entitlements. Respondents who gave the most accurate estimates tended to be highly educated, high income, white males. However, the most troubling finding of this survey was that the majority of respondents still have trouble performing the basic calculations necessary to plan for retirement.

Lusardi and Mitchell (2006, 2007a) studied the 2004 HRS survey and find a lack of basic financial knowledge among the respondents. Their findings confirm the lack of understanding of basic time value concepts and compounding among the respondents. Lusardi and Mitchell (2007b) confirmed their findings by studying the Rand American Life Panel (ALP) survey. The respondents were educated and high-earning middle-aged adults, however over a quarter of respondents did not possess basic finance knowledge and skills.

Lusardi, Mitchell, and Curto (2009a) find that financial knowledge and understanding of basic time value of money concepts is lacking among young adults, which hinders their ability to make rational decisions regarding asset allocation. Lusardi, Mitchell, and Curto (2009b), using data from the 2008 Health and Retirement Study, find older Americans are also lacking in financial knowledge. They reported that the majority of respondents over 55 do not have basic understanding of stocks, bonds, risk, diversification, portfolios, inflation and investment fees. The authors argue that these findings have significant implications for public policy.

Lusardi and Mitchell (2006, 2007b) reported other forms of financial illiteracy. The authors note that the concept of inflation is not well understood among many Americans, and therefore, they make mistakes when it comes to accounting for inflation in their future retirement savings. In addition, the authors report a lack of understanding of the concepts of risk and diversification which affect investment decisions. Bucks and Pence (2006) study the Survey of Consumer Finances to distributions in three lender-reported datasets and find that many individuals who hold adjustable rate mortgages (ARMs) exhibit shocking ignorance of their mortgage terms. They note that ARM borrowers do not have complete understanding of their mortgage characteristics and typically underestimate their risks and potential liabilities. Agarwal et al. (2009) find similar results using data from a mandatory loan counselling program for high-risk mortgage applicants in Chicago. They find that a large majority of ARM applicants did not know that their interest rate was not fixed for the life of the mortgage.

In summary, there is overwhelming evidence in the financial literature suggesting that many consumers are not financially literate. In addition, those studies also assert that financial literacy is an important factor in the retirement planning and saving process. However, the previous studies do not specifically assess the financial literacy levels of college level students. This paper fills the gap in the financial literacy literature by surveying college level students who by definition are getting a relatively higher level of education. The paper tries to explore whether gaining college level education results in a higher level of financial literacy which in turn will provide for better savings, investing and retirement related decisions.

3. Hypotheses Development

Danes and Hira (1987) explore financial literacy knowledge among college students and find that students know about credit cards and their costs, in particular compounding interest charges. In addition, students distinguish between the different types of insurance and know the importance of carrying insurance. However, the authors find that students show little to no knowledge regarding the different types and characteristics of loans and do not place high importance on record keeping processes.

In addition, Volpe, Chen and Pavlicko (1996) studied financial literacy knowledge among college students, and find that it is related to gender, academic discipline and experience. They conclude that overall, college students possess an inadequate level of personal investment knowledge. In a more comprehensive study, Chen and Volpe, (1998) find similarly inadequate financial literacy knowledge among college students in general. However, in their study, business majors perform much better than non-business majors on financial literacy-related questions.

Based on the above literature, we hypothesize the following:

H1: College level students and in particular business majors including finance and accounting majors, will have adequate financial literacy knowledge.

Chen and Volpe, (1998); Danes and Hira, (1987); Volpe, Chen and Povlicko, (1996) find that gender, employment status, ethnicity, family income and college major may affect the financial literacy levels of business majors. Hilgert and Hogarth (2003) and Mandell (2004) report that parents have a strong influence on their children’s financial literacy knowledge. Analyzing national surveys conducted in 1997, 2000, 2002 and 2004, Mandell (2004) and Hilgert and

Hogarth (2003) find that high schoolers obtain their financial knowledge from their parents or through personal experience. Both researchers conclude that in order to transmit effective financial knowledge, parents need to be financially literate in the first place.

Based on the above literature, we hypothesize the following:

H2: College level students and in particular business majors including finance and accounting majors, gain their financial literacy primarily from their parents or personal experience.

Finally, previous studies explore the relationship between financial literacy and planning/saving for retirement. Two major findings are provided by this strand of literature. First, financial literacy has direct and positive impact on retirement planning. Individuals with relatively greater financial literacy plan more for retirement, and reach higher net worth upon retirement. Second, causality runs from financial literacy to retirement planning to wealth accumulation.

Lusardi and Mitchell (2006, 2007a) studied the 2004 Health and Retirement Survey report that concluded the majority of those surveyed do not correctly know their Social Security or other pension entitlements. The authors also report lack of understanding among respondents on the basics of compounding and interest rates. Further, Lusardi, Mitchell, and Curto (2009b), using data from the 2008 Health and Retirement Study, report that older Americans lack basic financial aptitude. The authors report that their findings suggest that the majority of Americans do not have "rudimentary understanding of stock and bond prices, risk diversification, portfolio choice, and investment fees." The authors argue that these findings have significant implications for public policy.

Based on the above literature, we hypothesize the following:

H3: College level students and in particular business majors including finance and accounting majors, will have adequate knowledge of planning for savings and retirement.

4. Methodology

We modelled a five-page survey instrument (see Appendix A) that is used to survey financial literacy knowledge and perceptions of college students at University 1 and University 2. The survey instrument is developed using Lusardi and Mitchell (2009a and b) and Mandell (2004) surveys as examples. The survey consists of three parts. Part one contains questions related to student demographic background, education and family information. The second part contains five questions devised to assess the financial literacy level of the respondents. The third part, which has three subcategories, contains questions related to the perception of students about their financial situation, influences on their financial literacy and the perception of students about retirement savings. This part of the survey asks the respondents to indicate the level of importance of each factor in their answer. We used a six-point, equal-interval importance scale where, -2 = Strongly Disagree, -1 = Disagree, 0 = No Opinion, 1 = Agree and 2 = Strongly Agree. We opted to include a "Not Available" option because some of the questions asked in the survey instrument may not have been applicable to the sample of the students who responded to this survey. The first subcategory related to the personal financial situation of students consists of 15 questions. We deliberately included questions similar in meaning but opposite in construction to further assess whether the students are really answering correctly or are they merely mechanically choosing their answers. The second subcategory consists of 8 questions related to influences on student financial literacy. The third subcategory consisted of 14 questions related to perceptions about retirement savings. The purpose of the three subsets is to test the three hypotheses that we put forward in this research. Finally, we provided the students with the option to add any additional information if they wished to do so. The authors received approval from their respective institutions in order to administer the survey among the students. No identifying information was recorded or asked in the survey. The survey was completely anonymous.

5. Results

5.1 Participant Characteristics

Table 1. The table presents descriptive statistics of the respondents.

	Number of Respondents	Percentage
Location		
Houston	247	57%
Kansas City	184	43%
Gender		
Male	218	51%
Female	213	49%
Age Group		
18-21	142	33%
22-29	176	41%
30-39	63	15%
40-49	32	7%
Above 50	18	4%
Marital Status		
Married	96	22%
Single	175	41%
Separated/Divorced	82	19%
Living with a partner	71	16%
Widowed	7	2%
Ethnicity		
White	93	22%
Hispanic or Latino	134	31%
Black or African American	114	26%
Native American or Indian	14	3%
Asian/Pacific Islander	65	15%
Other	11	3%
Classification		
Freshman	38	9%
Sophomore	69	16%
Junior	132	31%
Senior	168	39%
Other	24	6%
Major		
Accounting	85	20%
Finance	97	23%
CIS/EIS	24	6%
Management	63	15%

Marketing	17	4%
General Business	57	13%
Insurance Management	4	1%
Undecided/No Major	45	10%
Other	39	9%
Employment Status		
Employed full-time	85	20%
Employed part-time	155	36%
Small Business owner or self-employed	17	4%
Unemployed looking for a job	59	14%
Unemployed full-time student	115	27%
Income Level		
Below $9,999	147	34%
$10,000-$19,999	112	26%
$20,000 - $29,999	57	13%
$30,000 - $39,999	54	13%
$40,000 or more	61	14%
Father's Schooling level		
Less than high school	109	25%
High school or equivalent	148	34%
Associate/community college degree	57	13%
Bachelor's degree	57	13%
Masters or above	60	14%
Mother's schooling level		
Less than high school	87	20%
High school or equivalent	194	45%
Associate/community college degree	68	16%
Bachelor's degree	58	13%
Masters or above	24	6%
Debt Level		
$0	91	21%
$1-$4,999	129	30%
$5,000-$9,999	55	13%
$10,000-$19,999	57	13%
$20,000-$39,999	67	16%
$40,000 or more	24	6%
Don't know	8	2%

The sample size consists of 431 responses from students enrolled at University 1 and University 2 during 2014. The responding student locational distribution is 57% in Houston and 43% in Kansas City. The demographic composition is 51% males and 49% females. The respondents are predominantly young. Forty one percent of the respondents are in the 22-29 year age bracket and thirty-three percent are in the 18-21 year age bracket. The other significant age group is the 30-39 year age bracket (15%). The respondents are mostly single (41%). 22% are married and 16% living with a partner. 19% are separated or divorced. The ethnic composition of the respondents is widely varied; 31% of the respondents are Hispanic or Latinos, 26% are Black or African American, 22% are white and 15% Asian or Pacific Islander.

The two largest groups of the respondents are juniors and seniors (31% and 39% respectively) followed by sophomores (16%), freshman (9%) and other (6%). As for the majors of the respondents, the two largest groups are finance majors and accounting majors with 23% and 20% of the respondents, respectively. Management is the third most popular major in the sample and represents 15% of the respondents. Management is followed by General Business majors which accounts for 13% of the sample, and undecided/no major is in fifth place at 10%.

The employment status of the respondents is as diverse as their background and major field of study. Unemployed full-time students represent 27% of the respondents, while 14% of respondents indicate they are unemployed and looking for a job. Part-time employed students represent 36% of the respondents, and full-time employed students are only 20%. Based on these numbers, 77% of the respondents are unemployed or part-time employed. As for the respondents' income level, 34% report income below $10,000, 26% report income between $10,000 and $20,000, and 13% have an annual income between $20,000 and $30,000.

The survey asked respondents about their parents' education level. Regarding the father's education level, 25% of the respondents report less than high school level, 34% report high school or equivalent level and 13% report community college level of education. Similar results are found in regards to the mother's education level. 20% of the respondents report less than high school level education, 45% report high school or equivalent level and 16% report community college level of education. Overall, the results about family education show that the majority of the respondents come from families where the highest education attained is below the college level.

With regard to indebtedness levels, 21% of the respondents report no debt, while 30% of the respondents report less than $5,000 of total debt. Thirteen percent of the respondents state their debt level is between $5,000 and $10,000. Only 6% of the respondents reported debt levels above $40,000. These results seem reasonable given the age and income level of the majority of the sample.

5.2 Financial Knowledge Survey

Table 2. Financial Literacy Background Information

	Number of Respondents	Percentage
Financial Knowledge Source		
At home from my parents	104	24%
Learning on my own over time	192	45%
School coursework	47	11%
From friends and relatives	69	16%
Other	19	4%
Safest place to save $5000		
At home	41	10%
In a savings account at a bank	351	81%
Investing in the stock market	12	3%
Investing in the bond market	27	6%
Gross pay deductions		
Social Security and Medicare contributions	50	12%
Federal Income tax, property tax, Medicare and Social Security	38	9%
Federal Income tax, Social Security and Medicare contributions	312	72%
Federal Income tax, sales tax, and Social Security contributions	31	7%
Credit history/record rights		
Credit record checked once a year for free	375	87%
Cannot view credit record unless provided by bank	28	6%
Credit record are property of U.S. government	15	3%
Accessible only if turned down for credit based on the report	13	3%
TVM Calculation		
You	220	51%
Your friend	79	18%
You and your friend would have the same amount	123	29%
Cannot be determined	9	2%

We utilize five specific questions in the survey to analyze the level and origin of respondent financial knowledge. Forty-five percent of the respondents report they gained their financial knowledge on their own over time, 24% indicate they gained their financial knowledge at home from their parents, 16% state they gained their financial knowledge from friends and relatives, and surprisingly only 11% report they gained their financial knowledge from school coursework. The results are surprising because the vast majority of the respondents are college level students majoring in a Business discipline, therefore, they should have received at least some type of education in financial matters.

The majority of respondents in our sample were able to correctly answer the four questions related to financial literacy and the understanding of common financial knowledge. The results are not surprising given the fact that the respondents are college level students majoring in Business.

Eighty-one percent of the respondents correctly state that the safest place to save $5000 is in a savings account at a bank. 72% of the respondents correctly identify the 3 deductions out of the gross pay, which are Federal income tax, Social security tax and Medicare contributions. Eighty-seven percent of the respondents correctly answer the question related to the right to receive a free credit report once a year. Finally, only 51% of the respondents were able to correctly answer the question related to the time value of money and compound interest.

5.3 Respondents Perceptions about their Personal Financial Situation

Table 3. The results represent the survey responses of 431 students from 2 different universities. The t-statistic represents the t-value when testing the mean to 0.

	Not Available	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**	**Mean**	**Std. Dev**	**t-stat**
Panel A: Perceptions about personal financial situation									
1. I feel in control of my financial situation	0	8	15	21	254	133	1.13	1.68	6.521 ***
	0%	1.86%	3.48%	4.87%	58.93%	30.86%			
2. I feel capable of using my future income to achieve my financial goals	0	5	11	24	234	157	1.22	1.09	4.638 ***
	0%	1.16%	2.55%	5.57%	54.29%	36.43%			
3. My finances are a significant source of worry or hassle to me	2	57	105	54	107	106	0.23	0.61	14.252***
	0.46%	13.23%	24.36%	12.53%	24.83%	24.59%			
4. I am certain about where my money is spent	0	14	37	41	215	124	0.93	0.669	18.639***
	0%	3.25%	8.58%	9.51%	49.88%	28.77%			
5. I feel credit cards are safe and risk free	0	178	155	24	43	31	-0.94	1.398	5.643 ***
	0%	41.30%	35.96%	5.57%	9.98%	7.19%			
6. I feel putting money each month for savings or investments is important	1	12	27	18	116	257	1.34	0.933	8.890 ***
	0.23%	2.78%	6.26%	4.18%	26.91%	59.63%			
7. I feel capable of handling my financial future (i.e. buying insurance or investments)	0	11	42	44	214	120	0.91	0.669	-18.639***
	0%	2.55%	9.74%	10.21%	49.65%	27.84%			
8. I compare my receipts of purchases to my monthly statements	4	48	126	72	119	62	0.05	1.398	5.643 ***
	0.93%	11.14%	29.23%	16.71%	27.61%	14.39%			
9. I use credit cards to make purchases that I can’t afford	4	172	128	32	71	24	-0.82	0.869	9.185 ***

	0.93%	39.91%	29.70%	7.42%	16.47%	5.57%			
10. I miss important life events to work extra hours to pay bills and other expenses	0	89	114	61	127	40	-0.19	0.513	7.190 ***
	0%	20.65%	26.45%	14.15%	29.47%	9.28%			
11. I received cash advances from my credit card in the past 12 months	3	215	95	41	36	41	-0.95	1.012	5.379 ***
	0.7%	49.88%	22.04%	9.51%	8.35%	9.51%			
12. I contribute to a savings account regularly	0	53	86	34	127	131	0.45	0.687	7.279 ***
	0%	12.3%	19.95%	7.89%	29.47%	30.39%			
13. I missed one or more credit payments in the past 12 months	2	260	86	24	34	25	-1.21	0.579	9.514 ***
	0.46%	60.32%	19.95%	5.57%	7.89%	5.80%			
14. I keep adequate records of my finances	0	17	88	41	187	98	0.61	1.213	11.36 0***
	0%	3.94%	20.42%	9.51%	43.39%	22.74%			
15. I always pay more than the minimum amount on my credit card	2	152	78	38	85	76	-0.34	0.752	6.485 0***
	0.46%	35.27%	18.10%	8.82%	19.72%	17.63%			
Panel B: Influences on Financial Literacy									
1. My parents taught me about money management and savings	0	45	64	55	175	92	0.48	1.142	11.59 4***
	0%	10.44%	14.85%	12.76%	40.60%	21.35%			
2. I read to increase my financial knowledge	0	36	65	50	168	112	0.59	1.2	2.169 *
	0%	8.35%	15.08%	11.60%	38.98%	25.99%			
3. I gained most of my knowledge about finances in high school	0	97	179	54	71	30	-0.56	0.869	8.179 ***
	0%	22.51%	41.53%	12.53%	16.47%	6.96%			
4. I follow my parents as far as savings and investments are concerned	2	51	152	67	114	45	-0.12	0.979	-3.23 8**
	0.46%	11.83%	35.27%	15.55%	26.45%	10.44%			
5. I attended a class or seminar provided by a financial planning firm	0	105	172	52	83	19	-061	0.798	-6.38 8***
	0%	24.36%	39.91%	12.06%	19.26%	4.41%			
6. I attended a financial	1	122	185	63	46	14	-.83	0.633	-12.2

literacy seminar organized by non-profit organization									49***
	0.23%	28.31%	42.92%	14.62%	10.67%	3.25%			
7. I can get any information I want related to finances from the Internet	0	13	53	68	239	58	0.64	0.583	11.287***
	0%	3.02%	12.30%	15.78%	55.45%	13.46%			
8. I follow my instincts when it comes to money and finances	3	24	52	51	224	77	0.64	0.841	13.358***
	0.7%	5.57%	12.06%	11.83%	51.97%	17.87%			
Panel C: Perceptions about retirement savings									
1. I save enough for retirement	0	96	184	78	48	25	-0.65	0.741	5.259***
	0%	22.27%	42.69%	18.10%	11.14%	5.80%			
2. Social Security will provide me with an adequate amount of retirement income	0	196	125	47	54	9	-1.03	0.924	-11.921***
	0%	45.48%	29.00%	10.90%	12.53%	2.09%			
3. The retirement benefits provided by my employer are adequate	3	98	141	129	48	12	-0.62	0.754	-8.491***
	0.70%	22.74%	32.71%	29.93%	11.14%	2.78%			
4. I plan to work part-time after I retire	0	48	91	98	167	27	0.08	0.975	-1.133
	0%	11.14%	21.11%	22.74%	38.75%	6.26%			
5. I save enough in a private retirement account such as IRA to meet my retirement goals	0	98	186	106	40	1	-0.79	1.208	3.404**
	0%	22.74%	23.43%	16.71%	27.15%	10.21%			
6. I do not save for retirement	2	95	101	72	117	44	-0.20	1.093	2.775*
	0.46%	22.04%	23.43%	16.71%	27.15%	10.21%			
7. I feel confident about the future of Social Security and Medicare	0	184	121	65	44	17	-0.95	0.87	4.282***
	0%	42.69%	28.07%	15.08%	10.21%	3.94%			
8. I save enough regularly to meet my financial goals	4	74	135	54	125	39	-0.19	1.085	5.757***
	0.93%	17.17%	31.32%	12.53%	29%	9.05%			
9. I will live with my children when I retire	2	163	137	47	60	22	-0.83	1.29	-1.329
	0.46%	37.82%	31.79%	10.90%	13.92%	5.10%			
10. I understand the different retirement plans	0	47	118	81	149	36	0.02	1.136	0.059

available to me									
	0%	10.9%	27.38%	18.79%	34.57%	8.35%			
11. I feel that I need more information/education related to retirement	3	18	49	51	186	124	0.81	1.201	-1.628
	0.7%	4.18%	11.37%	11.83%	43.16%	28.77%			
12. I do not trust private companies providing retirement accounts	0	26	74	178	117	36	0.15	0.801	3.628**
	0%	6.03%	17.17%	41.30%	27.15%	8.35%			
13. I think the government should provide citizens with more retirement choices other than Social Security	2	30	62	66	179	92	0.56	1.081	8.271***
	0.46%	6.96%	14.39%	15.31%	41.53%	21.35%			
14. I think having insurance coverage is adequate retirement coverage	1	89	136	96	75	34	-0.39	0.914	6.317***
	0.23%	20.65%	31.55%	22.27%	17.40%	7.89%			

*** is significant at 1% level, ** is significant at 5% level, * is significant at 10% level

The first subcategory of the survey is related to respondent perceptions about their personal financial situation. The majority of the respondents tend to have a positive attitude toward their own personal financial situation and seem to be in control of their finances. The vast majority of the respondents (89.79%) affirm that they are in control of their financial situation. Similarly, almost all of the respondents feel capable of using their future income to achieve their financial goals (90.72%). Only about half of the respondents (49.42%) consider that their finances are significant sources of worry. In addition, 78.65% of the respondents are certain where their money is spent. 78.65% of the respondents feel that credit cards are not safe nor risk free. Also, 86.54% of the respondents feel that it is important to save monthly either in a savings or investment account. 77.49% of the respondents feel capable of handling their financial future, i.e., buying insurance or investments. 69.61% of the respondents affirm that they do not use credit cards to make purchases they cannot afford.

The general level of optimism that respondents exhibit in regard to controlling their finances and their financial situation is not always reflected by their behavior. Surprisingly, only 42% of the respondents compare the receipts of their purchases to their monthly statements, which is at odds with the notion that most respondents are aware where their money was spent. 38.75% of the respondents state they have missed important life events in order to work extra time to pay their bills. 71.92% of the respondents did not receive cash advances from their credit cards in the past 12 months. As far as saving, 59.86% of the respondents confirmed that they contributed to a savings account regularly and 80.27% of the respondents did not miss one or more credit payments in the past 12 months. Finally, 66.13% of the respondents feel that they keep adequate records of their finances. Only 37.35% of the respondents pay more than the minimum amount on their credit card.

5.4 Influences on Respondent Financial Literacy

The second subcategory of the survey questions is related to the sources of influence on financial literacy of the respondents. 61.95% of the respondents indicate they were influenced by their parents who taught them about money management and savings. Surprisingly, 47.10% of respondents do not follow the actions of their parents as far as savings and investments are concerned. Only 23.43% of respondents answered affirmatively that they gained most of their financial literacy at high school. 68.91% of respondents affirmed that they can get any information related to finances from the Internet. Finally, 69.84% admitted that they follow their instincts when it comes to money and finances.

64.97% of the respondents admit the need to increase their financial knowledge. Only 37.59% of respondents state they have attended a class or seminar provided by a financial planning firm or non-profit organization.

5.5 Respondent Perceptions about Retirement Savings

The third subcategory of the survey relates to retirement savings and respondent perceptions about their personal retirement situation. The majority of the respondents (64.96%) admit that they do not save enough for retirement. This particular finding seems to be logical given the fact that the respondents are college level students. Only 16.94% of the respondents do save for retirement. Furthermore, 74.48% of the respondents do not have a positive outlook in regards to Social Security, asserting that it will not provide them with adequate income during retirement. In addition, 55.45% of the respondents feel that the retirement benefits provided by their employer are inadequate. 32.25% of the respondents do not plan to work part-time after they retire, while 45.01% do plan to work part-time after they retire. 65.90% of the respondents do not save enough in a private retirement account such as IRA to meet their retirement goals and only 9.51% of the respondents have such savings.

To the question “I do not save for retirement”, 45.47% of the respondents gave a negative response which suggests that they do save for retirement. However, 37.36% of the respondents provide a positive answer which shows that they do not save for retirement. 70.76% of the respondents did not feel confident about the future of Medicare and Social Security. Only 38.05% of the respondents assert that they save regularly to meet their financial goals. This particular result contradicts the positive perceptions about respondent financial situation in panel A of table 3. On the other hand, 69.61% of the respondents do not plan to live with their children when they retire. Only 42.92% of the respondents have an understanding of the different retirement plans available to them and 71.93% of the respondents feel they need more information/education related to retirement. In addition, 35.50% of the respondents do not trust private companies providing retirement accounts, while 41.30% felt neutral about them. 62.88% of the respondents think that the government should provide more retirement choices than Social Security. Finally, only 25.29% of the respondents agree that having insurance coverage is adequate retirement coverage, while 52.20% disagree.

6. Analysis of Results

The survey results from the college student respondents on their perceptions concerning their personal financial situation showed that the majority of them tend to have positive attitudes toward their current financial situation and seem to be in control of their finances. However, the optimistic responses regarding the ability to control their current financial situation are not always supported by their behavior.

The second subcategory of survey questions is related to the sources of influence on financial literacy of the respondents. Most of the respondents indicate that their personal financial behaviors are influenced by their parents, siblings or relatives. In addition, they rely on getting financial information from online sources. Most of them admitted that they follow their instincts when it comes to money and finance decisions. The above-referenced responses strongly suggest that universities need to assume the role of teaching adequate personal financial management to students.

The third subcategory of the survey relates to retirement savings and respondent perceptions about their personal retirement situation. The majority of the respondents disclose that they do not save enough money for retirement. In part, this response can be explained by the fact that the respondents are college students. The respondents feel they need more information or education related to retirement and think that the government should provide more retirement options than just Social Security. The respondents need to learn about the characteristics of employer 401(k) plans, choose what to invest in, and decide how much and where to invest. Most of the respondents feel that they need more information or education related to retirement.

7. Conclusions

Financial literacy and behavioral biases often reflect contradictions among many of our traditional college age students. Financial literacy includes understanding how to balance a personal budget, manage credit cards, control debt payments, and ensure adequate retirement funds. We find that the majority of our respondents have the basic tools necessary to make sound short-term financial decisions. However, their financial literacy does not always translate into sound financial behavior.

The lack of knowledge about retirement planning and saving among college students is also concerning. This issue is exacerbated by the fact that most of the students surveyed tend to rely on instincts when making financial decisions. This would suggest that even with additional formal retirement education classes, many would choose to rely on instinct rather than planning and analysis to make one of the largest investment decisions of their lifetime.

Even among college students, we observe the need to develop programs that can do more than impart the necessary knowledge to make sound short and long run financial decisions. For financial education programs to be effective, they must provide knowledge and affect behavior. Further research on this topic should be geared toward determining best practices aimed at altering financial behavior. A college setting lends itself to an experimental research design that could help determine which tactics are most useful in getting students to make sound short and long run financial decisions.

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APPENDIX A: Financial Literacy Survey

Demographics of the respondents

1 - What is your gender?

a) Male
b) Female

2 - What is your age group?

a) 18-21
b) 22-29
c) 30-39
d) 40-49
e) Above 50

3-What is your marital status?

a) Married
b) Single
c) Separated/Divorced
d) Living with a partner
e) Widowed

4-What is your ethnicity?

a) White
b) Hispanic or Latino
c) Black or African American
d) Native American or American Indian
e) Asian / Pacific Islander
f) Other

5-What's your academic standing?

a) Freshman
b) Sophomore
c) Junior
d) Senior
e) Other

6 – What is your major?

a) Accounting
b) Finance
c) CIS/EIS
d) Management
e) Marketing

f) General Business

g) Insurance Management

h) Undecided/No Major

i) Other

7 – What is your employment status?

a) Employed full-time

b) Employed part-time

c) Small business owner, or self-employed

d) Unemployed looking for a job

e) Unemployed full time student

8-Which best describes your income last year (not including student loans)?

a) Below $9,999

b) $10,000-$19,999

c) $20,000-$29,999

d) $30,000-$39,999

e) $40,000 or more

9-What's the highest level of schooling your **father** completed

a) Less than high school

b) High school or equivalent

c) Associate/community college degree

d) Bachelor's degree

e) Masters or above

10-What's the highest level of schooling your **mother** completed

a) Less than high school

b) High school or equivalent

c) Associate/community college degree

d) Bachelor's degree

e) Masters or above

11-How much do you estimate you owe on all debts including credit cards, student loans and other debts? (Do not include mortgage)

a) $0

b) $1 – 4999

c) $5000-$9999

d) $10,000 - $19,999

e) $20,000 - $39,999

f) $40,000 or more

g) Don't know

12-What is your GPA?

a) Below 1

b) 1.01-2.0

c) 2.01-3.0

d) 3.01-4.0

Financial Literacy Background Information

1-Where did you gain most of your knowledge about managing money?

a) At home from my parents.

b) Learning on my own over time.

c) School coursework.

d) From friends and relatives.

e) Other Please specify:

2- Suppose you saved $5000 for your college expenses. Which of the following is the safest place for storing your money?

a) At home.

b) In a savings account at a bank.

c) Investing in the stock market.

d) Investing in the bond market.

3-Your take-home pay from your job is less than the total amount you earn. Which of the following best describes what is taken out of your total pay?

a) Social Security and Medicare contributions.

b) Federal income tax, property tax, Medicare and Social Security contributions.

c) Federal income tax, Social Security and Medicare contributions.

d) Federal income tax, sales tax, and Social Security contributions.

4-Which of the following statements best describes your credit history/record related rights and issues?

a) Your credit record can be checked once a year for free.

b) You cannot view your credit record unless provided to you by a financial institution/bank.

c) All credit records are the property of the U.S. government and access is only available to law enforcement agencies and financial institutions.

d) You can only access your records only if you are turned down for credit based on a credit report.

5-You and your best friend are the same age. At age 25, you began saving $2,000 a year in a retirement account that earns a 7% return (compounded annually) while your friend saved nothing. At age 50, your friend realized he needed money for retirement and started saving $4,000 per year in an account that provided the same return as yours while you kept saving $2,000. Who will have the most money in their account by age 75?

a) You.

b) Your friend.

c) You and your friend would have the same amount.

d) Cannot be determined.

Perceptions about Financial Knowledge and Attitudes

Directions: Circle the number corresponding to your level of agreement or disagreement with each statement.

Level of Agreement

Strongly Disagre	Disagree	No Opinion	Agree	Strongly Agree
-2	-1	0	+1	+2

Circle One Level of Agreement

	Disagree				Agree
A. Perceptions about personal financial situation					
1. I feel in control of my financial situation.	-2	-1	0	+1	+2
2. I feel capable of using my future income to achieve my financial goals.	-2	-1	0	+1	+2
3. My finances are a significant source of worry or hassle to me.	-2	-1	0	+1	+2
4. I am certain about where my money is spent.	-2	-1	0	+1	+2
5. I feel credit cards are safe and risk free.	-2	-1	0	+1	+2
6. I feel putting away money each month for savings or investments is important.	-2	-1	0	+1	+2
7. I feel capable of handling my financial future (i.e. buying insurance or investments).	-2	-1	0	+1	+2
8. I compare my receipts of purchases to my monthly statements.	-2	-1	0	+1	+2
9. I use credit cards to make purchases that I can't afford.	-2	-1	0	+1	+2
10. I miss important life events to work extra hours to pay bills and other expenses.	-2	-1	0	+1	+2
11. I received cash advances from my credit card in the past 12 months.	-2	-1	0	+1	+2
12. I contribute to a savings account regularly.	-2	-1	0	+1	+2
13. I missed one or more credit card payments in the past 12 months.	-2	-1	0	+1	+2
14. I keep adequate records of my finances	-2	-1	0	+1	+2
15. I always pay more than the minimum amount on my credit card.	-2	-1	0	+1	+2
B. Influences on Financial Literacy					
1. My parents taught me about money management and savings.	-2	-1	0	+1	+2
2. I read to increase my financial knowledge.	-2	-1	0	+1	+2
3. I gained most of my knowledge about finances in high school.	-2	-1	0	+1	+2
4. I follow my parents as far as savings and investments are concerned.	-2	-1	0	+1	+2
5. I attended a class or seminar provided by a financial planning firm.	-2	-1	0	+1	+2
6. I attended a financial literacy seminar organized by non-profit organization.	-2	-1	0	+1	+2
7. I can get any information I want related to finances from the Internet.	-2	-1	0	+1	+2
8. I follow my instincts when it comes to money and finances.	-2	-1	0	+1	+2

Retirement Related Questions

A. Perceptions about Retirement Savings					
1. I save enough for retirement.	-2	-1	0	+1	+2
2. Social Security will provide me with an adequate amount of retirement income.	-2	-1	0	+1	+2
3. The retirement benefits provided by my employer are adequate.	-2	-1	0	+1	+2
4. I plan to work part-time after I retire.	-2	-1	0	+1	+2
5. I save enough in a private retirement account such as IRA to meet my retirement goals	-2	-1	0	+1	+2
6. I do not save for retirement.	-2	-1	0	+1	+2

7. I feel confident about the future of Social Security and Medicare. -2 -1 0 +1 +2
8. I save enough regularly to meet my financial goals -2 -1 0 +1 +2
9. I will live with my children when I retire. -2 -1 0 +1 +2
10. I understand the different retirement plans available to me. -2 -1 0 +1 +2
11. I feel that I need more information/education related to retirement. -2 -1 0 +1 +2
12. I do not trust private companies providing retirement accounts. -2 -1 0 +1 +2
13. I think the government should provide citizens with more retirement choices other than Social Security. -2 -1 0 +1 +2
14. I think having life insurance coverage is adequate retirement coverage. -2 -1 0 +1 +2

Is there any additional comments or concerns you want to address or add to your answers that illustrates better your savings for retirement?