

Financial literacy of graduating seniors at a small private College

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Key words

Demographic profile, financial background, financial literacy, student learning.

Abstract

The aim of our work is to discover the extent to which Ithaca College graduates have adequate knowledge to manage their financial futures upon graduation and entry into the world of work. We hope to use the results to inform our desire to equip students from varying disciplines to face financial uncertainties of contemporary life.

This project began with an anonymous survey of Ithaca College seniors in Fall Semester 2018. The survey was administered in the Qualtrics online software.

Students were asked to respond to a small number of multiple-choice questions about areas of personal finance, such as the effects of interest rates, the effects of interest compounding, and the merits of choosing one savings instrument over another. They were also asked a small number of demographic questions. To maximize participation in the survey, we offered potential respondents 15 gift cards (for 1 out of every 15 respondents) for \$10 each.

To evaluate the data, we employed standard statistical practices relevant to the types of responses under consideration to discover possible correlations between the extent of financial knowledge and demographic characteristics reported by the students. We discovered weak positive correlations between financial knowledge and enrollment in a specific school, gender, GPA, and several personal characteristics, such as comfort managing personal finances, and dealing with student loan repayments.

Armed with these insights, we hope to inform the college-wide discussion about offering financial literacy resources as part of the liberal arts- and professional curricula.

I Introduction

Over the past two decades, educators and practitioners of financial services have become increasingly concerned that young people are graduating from high school or college without the proper knowledge needed to build and manage healthy finances for themselves. Indeed, many studies have shown that older adults, too, are dealing with their personal finances with suboptimal financial understanding.

As educators in a small, private liberal arts college that includes several professional schools, we hope to equip all our graduates with the skills and knowledge to face the financial uncertainties of contemporary life successfully. Existing studies have examined, whether the average adult has adequate knowledge to plan for their financial future. In this study, we examine the financial skills of Ithaca College undergraduate students from a variety of academic and cultural backgrounds, as they are about to enter the world of work, to determine if certain fields of study enhance the knowledge base required for successful future decision making. In particular, we focus in our survey on money management and investment-related issues.

The paper is organized as follows: Section II describes the characteristics of Ithaca College, the context of our study; Section III reviews previous studies on financial literacy; Section IV discusses methodology. Section V presents results. Section VI concludes the paper.

II Profile of Ithaca College

Ithaca College (IC) is a private, coed institution that was founded in 1892. According to its report, Ithaca College has a total undergraduate enrollment of 6,059.

With respect to ethnic and gender diversity, the Ithaca College student body is predominantly white, with Latinx-, Black and African American-, and Asian students representing approximately 14% of the undergraduate population. With respect to gender diversity, male- and female students are evenly represented at the college.

Ithaca College draws from a variety of states throughout the U. S., though 42% of students come from the state of New York.

Finally, a review of financial aid offered by the college to entering students reveals several levels of family income. The table shown in Appendix 1 indicates that most IC students are sent by families that can be regarded as financially comfortable, as approximately 48% of families report a yearly income above \$110K. Nonetheless, nearly 77% of incoming first-year students are offered financial aid. **Appendix III** shows college-wide diversity details.

III Literature Review

The last decade has seen increasing interest by financial services firms and academics in addressing the problem of how extensive the personal financial literacy possessed by various populations is in America. Extant research concerned with the state of financial knowledge of segments of the American public, shows that a number of these studies focus on surveys of target populations. For example, some large-scale surveys whose respondents are mature adults, and whose question base is complex and lengthy have been published. Other surveys concentrate on young adults who typically are at the beginning of their careers. Still others concern recent high school graduates on their way to college.

These studies show that the average American may not have the necessary knowledge to make smart financial decisions or plan for their futures. For example, *the Financial Literacy Survey* administered by Equifax (Investor.equifax.com, 2017), a blind survey of more than 1,100 American consumers shows that a significant percentage of adults in the age range of 25-50 lack the information necessary to manage their credit card use, shop for advantageous mortgages, and plan for retirement. A similar result was recognized in the *EVERFI National Financial Knowledge Survey* (Everfi, 2018). Their survey data were drawn from incoming college students, as opposed to our target population of graduating college students. Everfi included 104,000 respondents and more than 410 institutions in 44 states. Both firms support their conclusions by reference to such academic analyses as *The Economic Importance of Financial Literacy: Theory and Evidence* (Lusardi and Mitchell, 2014).

A specific focus on college students and “millennials” – those born in the 1980s and 1990s – has resulted in publications that investigate the financial literacy levels of subjects in both small and large surveys. *The Financing of an Undergraduate Education: Financial Literacy Needs as Perceived by Recent Graduates* (Xiao and Ahn, 2014) is an investigation into the extent of knowledge upon which recent college graduates rely, when dealing with their educational debts. Michael K. Stanley writes in *National Underwriter Life & Health Breaking News* that *College Seniors Don't Know the ABCs of IRAs* (Stanley, 2018). The insurance giant, MassMutual, is reported to have found from its *financial literacy survey* that “4 out of 5 millennials can't answer basic financial questions: MassMutual survey underscores the critical need for youth financial education”. This survey included 500 subjects, Americans aged 25-40, from the MassMutual Foundation's Future Smart Digital program, and were asked five basic financial literacy questions. Only 17 percent of respondents answered all five questions correctly! (MassMutual, 2018).

Through our survey, we seek to discover the extent of personal financial literacy of a group of seniors at a small academic institution.

IV Research Methodology

This project began with an online, anonymous survey of Ithaca College undergraduate students who were seniors at the beginning of Fall 2018.

Our study employed Qualtrics online survey software. Students were asked to respond to four multiple-choice questions and one T/F question about areas of personal finance, such as the effects of interest rates, the effects of interest compounding, and the merits of choosing one savings instrument over another. The survey ended with basic demographic questions, including GPA ranges, field of study, etc.

The five finance questions address some of the relevant issues that will arise for most of these young adults, as they enter the world of work. For example, we asked about the impact of interest rate and inflation rate on savings accounts. We asked about their understanding of the relationship between, risk and return of an investment, and whether it is financially more prudent to invest in a diverse number of stocks, as opposed to just one. Last, we wanted to find out, if students soon to graduate with a bachelor's degree could estimate the size of a retirement fund that would eventually leave them well provided for.

We further believed that students' answers to the demographic questions would allow us to draw inferences about the role gender, GPA, and enrollment in a specific IC school might have played in the knowledge displayed through their answers to the financial questions. We also thought that there might be an impact on these answers by a student's historical characteristics, specifically whether they are the first member of their family to go to college, or whether or not they are in their family's first generation of natively born Americans. Last, we asked if they are anticipating repaying school loans, and if they are comfortable, dealing with money. All questions may be found in **Appendix I Survey Questions**.

Qualtrics provided us with various simple, descriptive statistics that we describe in the following section. However, not all of these were illuminating. Thus, we elected to perform our own analysis of the results. One of the issues facing us was that Qualtrics presented the answers in their natural language form, which would not be amenable to the analytic tools we would employ. Thus, the responses would all have to be coded using integers. In addition, only one answer among the options for each question was correct. Consequently, correct answers were coded as 1, and all the incorrect ones as 0. In the case of the demographic responses, where there were no right or wrong answers, we coded these as a sequence of integers. Finally, the responses to the last question, inviting students to choose one or more responses, we coded these as 1, if a response was chosen, and 0, if it was not.

V Findings/Results

A request to participate in the survey was sent to 1400 Ithaca College seniors. More than 200 students responded, with 195 completing the survey. The response rate was 14%. The distribution of respondents over the schools in which they were enrolled is shown in **Appendix II**. Of those who responded, 81 identified as male, 105 as female and 9 did not specify their gender.

Qualtrics returned the frequencies of correct responses to individual questions. These are shown below. An initial superficial examination of the responses indicated differences in correct responses by question with more than 82% of students answering the first question correctly. For the remaining questions, the average number of students who answered correctly dropped to closer to 60%, with only one third of students accurately answering the final question, which asked the minimum amount in savings recommended for people to have on hand when they retire.

Question	Correct Response %
You just opened a savings account at a local bank. The interest rate on deposits is stated at 3 percent per year. If your deposit was \$100, how much money would you have in this account after five years if you did not withdraw any money?	82.4%
The stated interest rate on your savings account is three percent annually. The expected inflation rate for next year is estimated at four percent. At the end of one year, how much would you be able to buy using the money in this account?	59.8%
Is the following statement true or false? "Investing in a stock of one company generally provides a safe and stable return over the long run compared to investing in a stock mutual fund."	58.8%
The ____ risk, the ____ return.	63.8%
How much money at the minimum do you think is recommended for people to have saved by the time they retire?	35.7%
Overall percentage for all respondents	60.1%
Overall percentage for all respondents without Q2	54.5%

Table 1 Frequencies of correct responses to individual questions

We saw that the first question was answered correctly by more than 80% of the seniors. But since the question was a comparatively simple one, we considered that their overall performance of 60% probably reflected a higher level of financial knowledge than was warranted by their remaining responses. Thus, we calculated the percent of correct answers without including the question and found that this resulted in an overall score of 54.5%. Interestingly, Chen and Volpe administered a survey to 924 college students in pre-millennial 1998 and included 52 financial literacy questions. Participants answered about 53% of these questions correctly (Chen and Volpe, 1998)! When we calculated the mean percentage of questions that students answered correctly, we consolidated them into three groups, reflecting a comparatively high, medium, and low financial literacy level among this group of students:

Correct Answers	No. of Respondents	% of Respondents
More than 80%	81	41.5%
60% - 70%	48	24.6%
Fewer than 60%	66	33.8%

Table 2 Financial Literacy Levels of Respondents

5.1 Field of Study

Students were asked to indicate which of five schools at Ithaca College they were affiliated with. The number of responses were proportional to the size of the school with 37 communications, 34 business students, 16 music students, 47 health science and human performance students and 61 humanities and science students completing the survey

Total scores for each student were calculated and an analysis of variance was run to see if a statistically significant difference in scores existed. Findings indicate a statistically significant effect of school on average score $F(4, 189) = 6.14$, $MSE = 9.25$, $p < 0.001$. A post-hoc Tukey test showed a statistically significant difference between scores for students in the business school ($m = 3.85$) and the school of communications ($m = 2.62$) with $p < 0.001$, the school of health science and human performance ($m = 2.74$) where $p = 0.001$ and the school of humanities and sciences ($m = 2.95$) where $p = 0.006$. There was no statistically significant difference between students in the business school and the music school ($m = 3.50$), $p = 0.877$. Between the other schools, there were no statistically significant

differences in scores. This suggests that students in the business school have a better understanding of financial literacy and may be better prepared to manage their funds in adulthood.

5.2 GPA

Subjects self-reported their grade point average (GPA) and, perhaps not surprisingly given the academic nature of the survey, the vast majority of subjects reported having GPAs between 3.50 and 4.00. Indeed, 63.6% of subjects reported GPAs in this range, while 29.2% reported GPAs between 3.00 and 3.49. A smaller number of students (3.59%) reported GPAs between 2.50 and 2.99 and between 2.00 and 2.49 (1.54%). The remaining 2.05% of students reported GPAs below 2.00. As in the previous analysis, an ANOVA was run to determine if a student's reported academic performance affected their financial literacy. Interestingly, no statistically significant difference was found between the groups, although there are several reasons why this may be the case. First, because students self-selected into taking the survey, it is possible that those who opted to take it are more financially aware than those who did not. Similarly, because the GPA range was self-reported, students may have inflated their GPAs. Finally, because a disproportionate number of students reported having a GPA in the highest increment, there may not have been enough variance in responses to accurately determine differences. Further studies, perhaps with verified GPAs, may be necessary to determine if academic performance is linked to financial literacy.

5.3 Gender Differences

As noted above, a small percentage of those who answered all five questions correctly identified as female. This led us to look to see if there was a statistically significant differences in scores between genders. A one-way ANOVA was conducted to test this observation. Indeed, the results returned a statistically significant effect of gender on total score $F(2, 193) = 6.14, p=0.002$. A post-hoc Tukey test indicated statistically significant differences between male students ($m=3.35$) and female students ($m=2.66$). There was no statistically significant difference between the small number of students who declined to answer ($m=2.78$) and the other two groups.

These gender differences emerged more forcefully, when we identified students in the Qualtrics data set who had given correct answers to all five financial questions. We found that just 25 respondents – or 13% of our sample – had answered all five questions correctly! As was noted above, 17 percent of respondents answered all five questions of the MassMutual survey correctly (MassMutual, 2018). However, this latter survey's target demographic was older than ours, and more experienced in the world of work. Consequently, it seems that the college seniors in our study conform closely to the demographic targets of earlier surveys. With respect to gender differences, we noted with some consternation that there were only 5 female students among these 25 seniors, or 20% of this group. This sharply contrasts with the participation rate of 53.9% for women in our survey, and provides the impetus to address this phenomenon in finding ways to encourage young women to acquire the financial skills that support their independence and security.

5.4 School Affiliation

We also wanted to identify the schools to which the small group of 25 belonged. Not surprisingly, the School of Business is represented with the highest number of perfect scores, though only 17% of all respondents overall were enrolled in this school. We expect that a senior graduating with a Business degree would be aware of the issues addressed in the survey.

School	No. of Respondents Answering All Correct	% of students from each school
School of Business	10	29.4% (10 of 34)
Park School of Communication	2	5.4% (2 of 37)
School of Music	2	12.5% (2 of 16)
H&S	8	6.5% (8 of 61)
HSHP	3	13.1% (3 of 47)

Table 3 School affiliation of the group of 25

As was noted above, the GPAs of the survey subjects were self-reported, and thus it is unsurprising that these would generally be high in the group of 25 students who excelled in the survey. However, the percentage of the 195 seniors who took the survey and reported a GPA of 3.50 - 4.00 was slightly higher at 63.6%! On the other hand, the remaining percentages of the small group and all respondents are nearly identical.

GPA	No. of Respondents	% of 25
3.50 - 4.00	15	60%
3.00 - 3.49	7	28%
2.50 - 2.99	1	4%
2.00 - 2.49	1	4%
Less than 2.00	1	4%

Table 4 GPAs of the group of 25

VI Conclusions

We were struck by the fact that our local survey revealed a financial knowledge profile that conformed quite closely to the results of large-scale surveys. It reinforces our conviction that, as educators, we must consider offering students greater opportunities to become financially literate adults.

We see that business school students are better able to answer financial literacy questions, both in the number who answered all the questions right and in their average scores. Further, male students tended to perform better on these questions, but it was beyond the scope of our survey to tease out the factors causally connected to this phenomenon. As business school faculty, we are aware that more men than women participate in our finance courses, and that this is the case for many other business programs. Disappointingly, a survey conducted 20 years ago showed the same imbalance, so that not much progress seems to have been made in encouraging women to be interested in pursuing finance as a degree program.

A provisional inference that we think can be drawn from our results is that students in less math-intense programs significantly underperformed on this financial literacy test. In our survey, students in the performing arts exhibited less financial understanding than their counterparts in schools that require more numeracy as part of their curricula. Thus, we are left to explore the question of whether enhancing the computational skills of arts students might alleviate some of the differences between their financial literacy and that of students in other fields of study.

VII Limitations and Direction for Future Research

A possible limitation in our study is that it is very local, so that our results may not be generalizable to a larger student population from various institutions. However, we see that our results are very similar to those obtained in the sweeping surveys conducted by Equifax and MassMutual. Thus, we believe that our survey overcomes this limitation.

We also realize that there are other questions about our subjects' responses that can be asked and that would provide fruitful insights. For example, we have not explored the correlation between a student's being the first person in their family to attend college or being the first American-born member of their family to do so, and their level of financial literacy. This, we expect, will occupy us from here on. Moreover, it would be interesting to mount a research project to discover, if there is any correlation between financial literacy and actual behaviors.

Because our study was motivated by our pedagogical desire to help students face their futures with the confidence needed to organize their financial lives, we also considered possible ways to bring about a greater appreciation of financial realities. For example, on our campus, we could explore making a semester-long, grade- and credit-bearing Personal Finance course a requirement for graduation, to be completed in the students' senior year. Alternatively, a financial literacy program could be established as a zero-credit graduation requirement, in which students

would take a series of workshops starting in their first year, with a final workshop in the senior year. Topics for these workshops would be appropriate for their specific year in college; e.g. budgeting could be taught in the first year, and retirement planning – with discussions of 401Ks and IRAs – could be offered in their final year. Finally, if appropriate resources were not available, the college could offer workshops that are not required on specific topics (such as those above), and students could choose to participate. On the matters and any others that arise from our survey, we look forward to a lively discussion with our colleagues.

APPENDIX I Survey Questions

(Note: Qualtrics numbered the first question as Q2 and numbered subsequent questions accordingly):

A. Financial literacy questions

You just opened a savings account at a local bank. The interest rate on deposits is stated at 3 percent per year. If your deposit was \$100, how much money would you have in this account after five years if you did not withdraw any money?

Exactly \$103

More than \$103

Less than \$103

I do not know.

The stated interest rate on your savings account is three percent annually. The expected inflation rate for next year is estimated at four percent. At the end of one year, how much would you be able to buy using the money in this account?

More than today

Same as today

Less than today

I do not know.

Is the following statement true or false?

“Investing in a stock of one company generally provides a safe and stable return over the long run compared to investing in a stock mutual fund.”

True

False

I do not know.

The ___ risk, the _____ the return.

lower; higher

higher; lower

lower; lower

there is no relationship between risk and return

How much money at the minimum do you think is recommended for people to have saved by the time they retire?

\$250,000

\$500,000

\$1,000,000

Most people do not need to save because they can receive monthly payments from their Social Security.

B. Demographic questions

From which school are you graduating?

Park School of Communication

School of Business

School of Music

HSHP

H&S

What is your GPA?

3.50-4.00

3.00-3.49

2.50-2.99

2.00-2.49

Less than 2.00

Which of these options best describes you?

Male

Female

Other/prefer not to specify

Please select all of the following that apply to you:

I am the first in my family to attend college

I am the first generation in my family born in the United States (one or both parents were born outside the United States)

I feel comfortable managing money

I am graduating with student loans that I will be responsible for paying back

APPENDIX II Demographic Profile of Survey Respondents

School	% of Respondents
School of Humanities and Sciences	31.3%
Health Sciences and Human Performance	21.4%
Park School of Communication	19%
School of Business	17.4%
School of Music	8.2%

Table 5 School affiliation of survey respondents

GPA	% of Respondents
3.50 - 4.00	63.6%
3.00 - 3.49	29.2%
2.50 - 2.99	3.6%
2.00 - 2.49	1.5%
Less than 2.00	2.1%

Table 6 GPAs of survey respondents

Gender	% of Respondents
Female	53.9%
Male	41.5%
Other/Prefer not to specify	4.6%

Table 7 Gender distribution of survey respondents

Personal History	% of Respondents
First in family to attend college	10%
First generation of family in college	5.5%
Comfortable managing money	38.4%
Responsible for repaying student loans	46%

Table 8 Demographic characteristics of survey respondents

References

- Bistriz, N. (2017). *Financial Literacy: Are you at the head of the class?* | *Equifax Finance Blog*. [online] Blog.equifax.com. Available at: <https://blog.equifax.com/credit/financial-literacy-are-you-at-the-head-of-the-class/> [Accessed 24 Jan. 2019].
- Chen, H. and Volpe, R. (1998). An analysis of personal financial literacy among college students. *Financial Services Review*.
- Everfi. (2018). *EVERFI Reveals National Financial Knowledge Findings Based on Survey Results from College Students Across the Country*. [online] Available at: <https://everfi.com/press-releases/everfi-reveals-national-financial-knowledge-findings-based-survey-results-college-students-across-country/> [Accessed 1 Feb. 2019].

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- Huston, S. (2010). Measuring financial literacy. *Journal of Consumer Affairs*.
- Investor.equifax.com. (2017). *Only 15 Percent of Surveyed U.S. Consumers Give Themselves an "A" in Financial Literacy*. [online] Available at: <https://investor.equifax.com/news-and-events/news/2017/04-11-2017> [Accessed 6 May 2017].
- Lusardi, A. and Mitchell, O. (2014). The Economic Importance of Financial Literacy: Theory and Evidence. *Journal of Economic Literature*.
- MassMutual. (2018). *4 out of 5 millennials can't answer basic financial questions: MassMutual survey underscores the critical need for youth financial education*. [online] Available at: <https://www.massmutual.com/about-us/news-and-press-releases/press-releases/2018/06/4-out-of-5-millennials-cant-answer-basic-financial-questions> [Accessed 18 Jun. 2018].
- Syedean, M. and Yi, T. (2011). Improving Financial Literacy of College Students: A Cross-Sectional Analysis. *College Student Journal*, 45(1).
- Stanley, M. (2018). *College Seniors Don't Know the ABCs of IRAs*. National Underwriter Life & Health Breaking News.
- U. S. News and World Report - Education. (2019). *Best Colleges: Ithaca College*. [online] Available at: <https://www.usnews.com/best-colleges/ithaca-college-2739> [Accessed 10 Feb. 2019].
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