An Analysis of the Financial Literacy and Financial Actions of College Students

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Financial Literacy has been a ripe area for research for the past 15-20 years with researchers focusing on different populations (elementary students, high school students, college students, retirees, military, etc.) and different ways to measure financial literacy or financial knowledge. However, very few have looked at measurements of the financial actions of the populations or if there is any relationship between the literacy of the respondents and their actual actions as it relates to their finances. While knowing that cutting back on sugar intake is important for one's health, it is not as important as actually cutting back on that sugar intake. While our research looks at both the financial literacy / knowledge of first-year, first semester college students, it also looks at some of their actual financial actions to determine if their financial knowledge has any effect on their financial actions.

Cole, Paulson, and Shastry (2014) analyze the effects on financial education attainment and financial outcomes. The authors look at state-level compulsory education laws and the probability of participating in the equity market, declaring bankruptcy, experiencing a foreclosure, or being delinquent on a loan. The authors find that there is an inverse relationship between education and the probability of declaring bankruptcy, experiencing a foreclosure, or being delinquent, and a direct relationship with participation in the equity market. **Mian and Sufi (2011)** argue that increased educational attainment improves households' financial management while also reducing the probabilities of bankruptcy. **Cole and Shastry (2009)** looks directly at the link between financial education and financial market participation. The authors find that there is no link between financial education at the high school level and participation in financial markets as an adult.

Lyons and Scherpf (2004) analyze the effects of the FDIC's Money Smart Program. The Program's goal is to convert those households which are unbanked to becoming banked. The authors argue that "success" in the Program should not be based on the number of bank account opened but should be "whether the program has provided participants with the financial skills and tools necessary to make sound decisions given their circumstances." Traditional first-year college students are typically not in a financial situation to participate in the market, nor are they likely old enough to have declared bankruptcy or be in default on any potential debts. Much of first year college students' financial situation is unique to that population – living expenses (room and board) are paid in advance, the likely largest expense is a one-time per semester charge for tuition, and for the vast majority the payment of their expenses are done by someone other than the student – the school (scholarships), the government (loans and grants), or the parents. As such the traditional measures of smart financial actions are not useful when measuring the effects for college students, especially first-year college students. While discussing "smart financial decisions" for college students, most experts recommend that students create a budget and put aside money for any unexpected expenses. To create an accurate budget, students need to know their use of funds (expenses) and source of funds (for students this is likely student loans, grants, and scholarships). An emergency fund is typically expected to have a minimum of between $500 and $1,000.

To measure the financial actions of first-year college students, we conduct a 58-question survey to first year students during their third and fourth week of classes. Our sample consists of 848 (out of 1,244 – 68.17% response rate) first-year, first semester college students at a public, masters' level university in the mid-south region of the United States. The demographics of the sample as it relates to gender included 62.5% female, 36.4% male, and 1.1% transgender or preferred not to answer. In regard to race, 78.01% were white, 11.79% were African American, 3.89% were Hispanic, 2.83% were Asian or Asian-American, 2.71% are multi-race, and the remaining 0.77% being in one of the other racial options. The average age of the respondents was 18.21 years old, and they take on average 15.11 hours of courses. Nearly all of the respondents are single (98.83%), and 77.48% of them live on campus. The

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average ACT score for the respondents was 23.04 while the average high school GPA for the students was 3.58. Finally, we also include a variable for first generation college students. We classify a student as first generation, if neither parent attended any college nor any sibling has or is currently attending a college. Of the sample, 19.34% are fall into our definition of a first-generation student.

To measure financial actions of their students, we look at a series of variables. In regard to students' ability to budget properly, we analyze if they know the amount of fund inflows and outflows for their largest purchases. The students are asked how much their refund (scholarships, loans, and grants less tuition, fees, room, and board) will be, as well as how much student loan debt they had taken out. Both variables are asked to be estimated within $1,000, and if the students do not know then they are to answer with "I don't know" or something similar. In regard to refunds, 38.797% of the students responding did not how much of a refund they will receive, if any, within $1,000. In regard to student loan amount, 29.835% of the students responding did not how much student loan debt they currently owed, if any, within $1,000. The same type of questions was asked about the cost of room and board (72.170% did not know), the cost of tuition (50.943% did not know), and the cost of books and supplies (41.932% did not know). In regard to an emergency fund, 58.255% have enough funds to cover an emergency expense of $500, and 29.953% have enough funds to cover an emergency expense of $1,000.

In regard to the education of the students, all of them have a high school degree and none have a college degree. In addition, a vast majority of the students (over 96%) graduated from a high school mandated high school economics but did not mandate any personal finance course to graduate. To measure general education, we use ACT scores and high school grade point averages. To measure financial education, we use the 6 questions from the Financial Industry Regulators Authority (FINRA) survey on financial literacy. Providing correct answers for at least 4 of the 6 questions give a "passing" score to the students, and the variable used in the model is a "pass / fail" variable.

To determine the driving factors in determining if a student knows the amount of their refund (source of funds), we utilize a probit model, with the dependent variable = 1 if the student does not know the amount of the refund, and 0 if the student does know the amount of the refund. The independent variables include FINRA (pass / fail variable), ACT, GPA (high school), FIRST (first generation student), GENDER, and RACE. The probit model resulted in the following:

$$Y = -.2766 + .2216(FINRA^{**}) + .0246 (ACT^*) + .1292(GPA) -.2272(FIRST^{**}) - .272(GENDER^*) - .0359(RACE)$$

The only variables that are significant at the 99% level are ACT (.00828) and GENDER (.0985), while FINRA (.0945) and FIRST (.1136) are significant at the 95% level. GENDER is a dummy variable that equals one if the person is a male (or identifies as a male), and zero if the person is a female (or identifies as a female). As it relates to a refund, higher FINRA scores, higher ACT scores, or being a female lead to worse information knowledge, while being a first-generation student leads to better information knowledge.

To determine the driving factors in determining if a student knows the amount of their student loans, we utilize a probit model, with the dependent variable = 1 if the student does not know the amount owed on their student loans, and 0 if the student does know the amount of the student loans. The independent variables include FINRA (pass / fail variable), ACT, GPA (high school), FIRST (first generation student), GENDER, and RACE. The probit model resulted in the following:

$$Y = -.9464 + .3829(FINRA^*) + .0367 (ACT^*) + .1606(GPA^{**}) - .0797(FIRST) - .0813(GENDER) + .0058(RACE)$$

The only variables that are significant at the 99% level are FINRA (.1014) and ACT (.0085), while GPA (.0717) is significant at the 95% level. As it relates to knowing the amount of student loan debt, passing the FINRA quiz, higher ACT scores, and higher GPA lead to worse information knowledge.

To determine the driving factors in determining if a student has the minimum recommended amount of funds put aside for emergencies, we utilize a probit model, with the dependent variable = 1 if the student does have the minimum amount of $500.00, and 0 if the student does not have the minimum

amount of $500. The independent variables include FINRA (pass / fail variable), ACT, GPA (high school), FIRST (first generation student), GENDER, and RACE. The probit model resulted in the following:

$$Y = -.2115 + .1492(FINRA) + .0056 (ACT) + .0371(GPA) - .2342(FIRST*) + .1092(GENDER) - .0173(RACE)$$

The only variable that is significant at the 99% level is FIRST (.1094). FIRST is a dummy variable that equals one if the person is a first-generation college student, and zero if the person is not a first-generation college student. As it relates to having the minimum amount of $500 for emergencies, being a first-generation college student improves the likelihood of at least the minimum amount being held by the student.

While at first glance some of the results may seem counter-intuitive, however they may not be. Students who obtain higher ACT scores and / or higher GPAs from high school are more likely to have a higher amount of their education paid for scholarships and parents. In addition, while interviewing a sub-sample of first-year students (n = 71), those with higher GPAs and ACT scores were more likely to have had a parent manage most if not all of the student's financial information as it related to college – from completing the FAFSA to "assisting" with accepting the financial aid package. Students with lower GPAs and ACT scores were more likely to have less-involved families as it related to financial information. Furthermore, the variable FIRST in every model run (including some not included in this abstract) had a coefficient sign that is interpreted as improving the financial information knowledge for the student. During the interview with the sub-sample of students, those that were first-generation students (n = 12) shared that the majority of the planning for and while in college rested solely on them, while those students who were not first-generation students (n = 59) were more likely to have had their parents control the financial aspects of the students' lives. This research agrees with **Cole and Shastry (2009)** that there does not seem to be a link between financial literacy knowledge and financial actions.