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Undergraduate Financial Knowledge, Attitudes, and Behaviors: The Impact of Financial Life Skills Course on College Students

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Introduction

The end goal of any program focused on financial literacy is to ultimately improve consumer well-being. Although financial literacy is widely acknowledged as increasingly important for consumers (Keshner, 2021). application of financial literacy programs and provision of supports and resources for consumers has not been consistent in the United States. Currently, thirty-three states require basic financial education in high school, though specific content, depth, and structure varies both within and across states. At the college-level, courses are often elective and content vary significantly from one college or university to another (Goetz et al., 2011; Jobst, 2014; LaBorde & Mottner, 2016; Wann, 2016). Whereas evaluations of state-mandated financial literacy courses at the secondary-level have shown positive outcomes (Chan et al., 2012; Gutter & Copur, 2011; Harvey, 2019; Kaiser et al., 2020; Postmus et al., 2015; Stoddard & Urban, 2020), little is known about the impacts of college- level financial literacy courses. It is inherently difficult to gauge the success of such programs due to the previously mentioned lack of uniformity in structure and the fact that individuals often self-select into these courses. The current study considers a one-credit financial life skills course for undergraduates at a major Midwestern university. We are primarily interested in how students who select the course might differ from those who do not take the course, and further explore potential course impacts on financial well-being, stress, attitudes, and student loan debt awareness.

For the present study, we conduct a broad survey of undergraduates, half of whom opted to take the financial life skills course as freshmen or sophomores, and the other half who did not elect to take the course. Whereas this course does not allow us to determine causal impacts of course exposure, we can explore population differences by comparing students who opted to take the course with those who had no course exposure. Areas of particular interest include financial literacy, well-being, stress, attitudes, and behavior. Another aspect of concern involves student awareness of their existing debt load and potential future balance. Previous studies suggest that college students often lack awareness of this critical information (Akers & Chingos, 2014; Andruska et al., 2014). For this study, we explore whether course exposure has any impact on student debt awareness. We do this by comparing existing administrative data to students' self-reported debt holdings among a sub-sample of participants who grant permissions for data access.

Background

The financial marketplace is necessarily complex and in the United States consumers are largely responsible for their own financial security. Advances in technology have hastened the process of financial innovation, increasing the complexity of financial products (Awrey, 2012; Judge, 2012). Consumers have more options to choose from and are increasingly asked to make tough decisions about savings, debt management, retirement planning and protecting their assets. The 2008 financial crisis showcased consumers' vulnerability, as many Americans faced daunting challenges related to liquidity constraints, diversification

concerns, and housing security among other issues.This crisis prompted some to call for a simplification of financial products and the market to help consumers better navigate these challenging decisions (Awrey, 2012; Judge, 2012; Willis, 2008, 2011). There are two reasons why this might be an unrealistic solution and an oversimplification. First, financial regulations can be inconsistent and fluctuate (often changing based on the current political climate). In the aftermath of the 2008 financial crisis, the United States saw a tightening of financial regulations and the creation of an entirely new oversight body in the Consumer Financial Protection Bureau (CFPB). However, recent years have seen a significant shift towards deregulation of financial markets, with many changes to the CFPB and challenges to its authority (Peterson, 2019). The constantly changing nature of the U.S. regulatory environment suggests that simplification of the marketplaces is unlikely to be a reasonable solution. Second, it is reasonable to consider that consumers might seek help from professional financial advisors as a solution. However, this is unrealistic for most people. Data suggest that roughly 20-30 percent of Americans sometimes seek professional help with financial matters (Cliffs & Mateo, 2019). In some cases, the barriers are financial in nature, but there are also severe limitations in terms of the number of professional financial advisors and diversity among the profession.

More recently, the COVID-19 pandemic has highlighted significant inequalities in our financial marketplace, many of which are likely exacerbated by inequalities in financial literacy (Schwab-Pomerantz, 2020). The challenges presented by COVID-19, along with past financial crises, have led many have advocated for more systematic financial education to help everyday consumers. Financial education provides a cost-effective solution to many unique financial problems that consumers face. Over the last decade, researchers have provided increasing evidence of financial education's effectiveness. Studies have shown that financial education impacts consumers' financial well-being through augmented financial knowledge and improved financial behaviors(Chan et al., 2012; Gutter & Copur, 2011; Harvey, 2019; Kaiser et al., 2020; Postmus et al., 2015; Robb & Woodyard, 2011; Stoddard & Urban, 2020). In recent years, largely spurred on by concerns about student loan debt burdens, an increasing number of postsecondary institutions have shown interest in financial education programs. In many cases, these education programs are supported by government agencies like the CFPB, whose core mission is to help consumers acquire financial capability through, "researching, developing, promoting, and implementing financial literacy programs and activities" (Bureau, 2015, p. 4). The education commission also published a report calling for more support and effort from postsecondary education institutions to increase their engagement and commitment toward financial education(Education Commission, 2015). An earlier report by Boston College indicated that there were more than 100 colleges and universities in the United States that provided a personal finance course to their students (Blanton, 2011). All together, these data suggest a degree of commitment to financial education at the college and university levels, but there is not a lot of detailed information about what impact these education programs are having on their recipients.

Financial Education on Financial Knowledge and Behaviors

Researchers have established a clear, positive relationship between financial education and financial knowledge (Borden et al., 2008; LaBorde & Mottner, 2016; Popovich et al., 2020). And increasingly, research supports the argument that improved financial knowledge leads to better financial behavior (Harvey, 2019; Kaiser et al., 2020; Mangrum, 2019; Stoddard & Urban, 2020; Urban et al., 2018). Many states require the integration of some personal finance coursework at the high school level. In some cases this involves the integration of personal finance concepts to an existing course, whereas some states have mandated a standalone course. Today, thirty-three states have state-mandated personal finance curriculum (Urban, 2020). Many states have had programs dating back to 1998, so the long existence of such courses has been a great source of data in evaluating the effectiveness of financial education. A few recent studies have examined the effects of state-mandated financial education on young people's borrowing behaviors. The results revealed the positive link between financial education and students' responsible borrowing behaviors such as avoiding payday loan, using credit cards to finance college education, and repayment of student loans (Harvey, 2019; Mangrum, 2019; Stoddard & Urban, 2020). Many earlier studies, including one meta-analysis, have consistently found that financial education positively influenced students' financial behaviors usually through an increase in financial literacy (Kaiser & Menkhoff, 2017; Mandell & Hanson, 2009; Peng et al., 2007). One of the strongest arguments to date in favor of education having an impact on behavior is presented in a working paper by Kaiser et al. (2020). The authors conducted a meta-analysis of 76 randomized experiments. This meta-analysis provided causal evidence of positive effects of financial education programs on financial knowledge and subsequent financial behaviors (Kaiser et al., 2020). This literature provides important groundwork for our analysis of the effectiveness of postsecondary personal finance education.

Despite the fact that several colleges and universities have provided personal financial education in some form, little research has evaluated the impacts of college-level financial education on students' financial knowledge, well-being, behaviors, and attitudes. The reason is understandable. Unlike, state-mandated financial education programs that might be universally applied to a group of students, college-level financial education is often elective, presenting significant bias in the form of self-selection. Similar to the state mandated high school programs, there is also a lack in uniformity among college courses in personal finance. They vary in length, content, breadth and depth (Education Commission, 2015). Whereas one university might offer a 3-credit hour entry level course, others might only have a 1-credit option or more limited engagements. This not only makes it harder for researchers and educators to evaluate program impacts at a given institution, but it also makes it difficult to know whether the results of other studies could be applied to their institutions' programs. Nevertheless, evaluations of such courses still provide us with some understandings on effective course components and effective methods of delivery (Goetz et al., 2011; Jobst, 2015).

Prior evaluations of the effectiveness of college-level financial education indicated a positive link between financial education and financial knowledge and behaviors. For instance, Popovich and colleagues (2020) found that community college students exhibited increased financial knowledge and changes in financial attitudes and behaviors after the students followed a series of online self-study modules with digital learning objectives. Another study revealed that students participating in a financial education course showed increased financial knowledge, increased responsible attitudes about credit cards, and improved financial behaviors (Borden et al., 2008). Additionally, evaluation of elective but full personal finance courses in universities noted a positive correlation between those courses and responsible financial behaviors (Jobst, 2014; Wann, 2016). One evaluation discovered that enrolling in a personal finance course in college increased students' overall financial knowledge which helped eliminate the disparity in financial literacy between genders and age groups (LaBorde & Mottner, 2016). These studies demonstrate clear positive correlations between financial education, financial knowledge, and financial behavior. Considering the current status of student loan debt, the next appropriate question is whether these financial education courses also contribute to student loan debt literacy.

Financial Education and Student Loan Debt Literacy

Student loan debt, and consumer debt in general, has been consistently increasing over the last few years. The New York Federal Reserve reported that more than 44 million Americans have student loans, and the total amount was $1.5 trillion at end of 2019 (Fed, 2020). 34 percent of student loan debt holders were young adults age 18 – 29 (Cilluffo, 2019). Large debt levels can be a serious problem for young adults who are entering the labor force and looking at other major life transitions such as home ownership, marriage or family formation. Previous research has highlighted the impact that heavy student loan burdens after graduation can have on young adults' life choices (Anderson, 2015; Lanza, 2016; Robb et al., 2020). Consequently, researchers and educators have been looking at ways to tackle the issue of consumer debt, and student loan debt in particular. It is reasonable to consider education (specifics about products, services and best practices) as one approach. Our previous discussion highlighted correlations between education, knowledge and behavior, but in the case of student loan debt we can consider more specific aspects of debt awareness and literacy. Some studies have begun to explore these relationships in more detail. Lee and Mueller (2014) considered student loan debt literacy, defined as "the ability to identify, understand, interpret, and navigate student loan options, principles, and practices associated with responsible borrowing and debt management" (Lee & Mueller, 2014, p. 714). The study found that continuing-generation college students were more knowledgeable and had stronger consideration around the decision to take on student loan debt than first-generation students did. In addition, Markle (2019) revealed that undergraduate students tend to have moderate levels of financial knowledge and moderate awareness of student loan debt. The author also reported a positive correlation between higher level of financial literacy and more favorable attitudes toward student loan debt (Markle, 2019).

This is an important result but having awareness and having actual understanding of one's own debt are distinctly different. If students only have a vague sense of their existing debt burden, making decisions about future repayments or even additional debt can be a challenge. Because student loan borrowing is typically incremental, one semester or academic year at a time, the burden is on the borrower to consider the long-term implications. A general lack of awareness might cause a student to borrow more than they need resulting in challenges in the repayment process. By linking administrative data and student surveys, Andruska and colleagues (2014) were able to showcase this problem. They found that while most of the students exhibited some awareness of their student loans, only few could accurately report the amount they currently owed. Some even reported no debt while holding a loan on their accounts. Additionally, they found more than 25 percent of the students underestimated their loan amount by less than $10,000 and nearly 10 percent underestimated by more than $10,000 (Andruska et al., 2014). Akers and Chingos (2014) presented similar results based on their study at a different university. The authors noted that slightly more than half of the survey respondents were able to accurately report the cost of their first year of college, with about 25% underestimating the cost of borrowing for college (Akers & Chingos, 2014). Even in cases where students are generally aware of their own debts, they may struggle to accurately report how much they owe, and there may be concerns about how well they understand the long-term implications of their debt.

Financial Education, Student Loan Debt and Well-Being

In recent years, more attention has been given to the concept of financial well-being. Whereas financial well-being has been studied under various names and in various contexts over the years, the Consumer Financial Protection Bureau (CFPB) recently took significant steps to provide an explicit definition and method of measurement for this concept (Bureau, 2015). The CFPB listed four main criteria of financial well-being: 1) having control over day-to-day, month-to-month finances, 2) having the capacity to handle a financial shock, 3) following through with individual's financial goals, and 4) having the financial freedom to make decisions that allow you to enjoy life. The report also provided lists of hypothesized financial behaviors, knowledge, and personal traits that drive financial well-being. This report laid out the foundations for how financial well-being could be measured, as well as, how to test whether someone possess the key behaviors, knowledge, and personal characteristics, which influence financial well-being. The underlying work of the report is to encourage researchers and educations to include financial well-being as a key measure and the goal of effective financial education.

Morris and Lown (1991) presented one of the first studies that evaluate a college-level personal finance course by relating it to financial behavior, financial satisfaction and confidence (Morris & Lown, 1991). Based on data from 316 students, the authors noted significant associations between financial practices with satisfaction and confidence. Shim et al. (2009) demonstrated that among other things, formal financial education may be an important factor by which young adults learned about financial matter and developed

attitudes and behavioral intentions. This is believed to ultimately have an impact on their financial well-being (Shim et al., 2009). Data from a large online survey of 15,797 college students age 18 and over in the U.S. suggested a significant relationship between financial behavior and financial well-being when controlling for demographic information, financial characteristics, financial education, and financial dispositions (Gutter & Copur, 2011). In Hong Kong, a study of 802 university students revealed that adoption of good money management is related to better financial well-being among college students (Chan et al., 2012). Another international study conducted in Malaysia, also found that financial literacy has the biggest impact on financial behaviors, specifically financial management skills. This in turn increased the perceived level of financial well-being among students (Sabri & Falahati, 2012). Robb (2017) evaluated students' financial stress and found that students' financial self-efficacy was positively related to students' subjective well-being (Robb, 2017).

Whereas the previous studies point to important associations between financial education and well-being, the general relationship remains unclear. Further, continued growth of student loan debt, accompanied by increasingly pessimistic coverage of this debt in the media, make this an important area of focus. Recent studies have identified student loan debt as one of the biggest stressors for college students (Baker & Montalto, 2019; Britt et al., 2017; Tran et al., 2018). Student loan debt is a source of both financial and psychological stress, and consequently impact students' health and academic performance (Baker & Montalto, 2019; Poplaski et al., 2019; Robb et al., 2012; Zhang & Kim, 2019).

Data and Methodology

The current study is based on a student survey administered via a campus survey center to students currently attending a large Midwestern university. A sample of 1,872 of students were recruited via an email with information about the purpose of the study. To encourage participation, students were given $10 incentive and a chance to win a tablet. The sample of students was selected in coordination with the Registrar's office. The Registrar identified a random selection of students based on the Financial Life Skills (FLS) course completion criteria. Half of the sample had completed the FLS course in a previous semester and the other half were never enrolled in the FLS course. FLS is a one-credit, elective course available to all undergraduate students. From the initial sample of 1,872, 370 (19.7%) students responded. The sample was cleaned to limit the analysis to cases with no missing data, resulting in a final sample of 358 students, with approximately half of the sample (N = 171) having taken the personal finance course.

The survey questionnaire is a compilation of questions based on several separate measurement scales (See Figure 1 for a summary of scale items). The first set of questions of the survey is the CFPB's Financial Well-Being scale (FWB) (Bureau, 2015). The CFPB's FWB is a validated measure created by experts in the field and was tested to ensure quality and reliability. This measure consists of 10 statements about students' financial situations. Each statement was scored on a 5-point Likert-type scale, with 0 indicating "Completely"

and 4 indicating "Not at all". The response scores are then summed to find a total score and finally matched with a corresponding financial well-being score for self-administered questions and by respondents aged $18-61$. Some items on the scale required reverse coding so that higher scores indicated greater level of financial well-being. FWB's items demonstrated high reliability (Cronbach's alpha = 0.851). The second scale is the Financial Stress Scale-College Version (FSS-CV), which consists of 17 questions asking students about how often they think of various financial events (Northern et al., 2010). Each statement was scored on a 1 to 4 scale, with 1 indicating "Never" and 4 indicating "All of the time". The FSS-CV was developed to reflect the financial challenges college students might face such as worrying about being behind on payments or having a large debt burden (Cronbach's alpha = 0.883). Subjective Well-Being (SWB) was measured using the Satisfaction with Life Scale (Pavot & Diener, 1993), which consists of five statements about students' overall life satisfaction. Next, students' Financial Self-Efficacy (FSE) was measured using four statements about students' belief in their own ability to perform financial behaviors within the next week. Each statement in both the SWB and FSE scales was scored on a 5 point-Likert scale with 1 indicating "Strongly disagree" to 5 "Strongly agree". FSE scale demonstrated high reliability with Cronbach's alpha = 0.837. SWB and FSE scales were structured such that higher scores indicated higher level of subjective well-being and self-efficacy, respectively. Students were also measured on their objective and subjective financial knowledge. Objective Financial Knowledge was based on responses to 10 questions about financial assets and investments (Knoll & Houts, 2012). The final score of objective financial knowledge is the total sum of all correct answers. Subjective Financial Knowledge was measured as a single item measure of student's perception about their own financial knowledge.

[Figure 1]

Family Socialization is seven questions related to family financial socialization. In this measure, students were asked while they were growing if their family talked to them about financial matter, the importance of saving, establish good credit rating, be a smart shopper, that actions determine success in life as well as whether they were given regular allowance and savings account. Each item were coded 1 for Yes and 0 for otherwise. These items were then summed to get a total score. The scale showed high reliability with Cronbach's alpha = 0.650. Peer Socialization is a single item measure asking student how often they discuss financial with friends. Students rated on a scale from 1 "Almost never" to 5 "Almost always". Financial Strain is another single item measure asking students in a typical month, how difficult is it for them to cover their expenses and pay all your bills. It was scored a 5 point-Likert type scale, where 1 indicated "Not at all difficult" and 5 indicated "Extremely difficult". The last measurement scale is the Financial Behavior scale, which consists of 10 questions but one question about paying off credit card was excluded due to almost half the sample responded, "Not applicable". This measure asked students about how they performed financial behaviors in the last six months questions (Cronbach's alpha = 0.745). The survey also asked students about their financial education history, student loan status

and payment amounts, and demographic information. Table 1 shows descriptive statistics for our sample.

The questionnaire also collected information on student loan debt. First, students were asked whether they had borrowed any federal and/or private student loan. Students who answered yes on either question were coded 1 and 0 for answering no. Next, students were asked to provide an estimated amount for each or both loans they had borrowed. The remaining questions of the survey collected data on students' financial education history and demographic information. For example, one of the questions asked whether a student had taken a financial literacy course in high school. For demographic information, students answered questions about their gender, racial/ethnic identity, and parent's education. Gender was coded 1 for female and 0 for male. Race/ethnicity variable were categorized as followings. Students who answer yes on White and no on all other race/ethnicity questions were coded 1 as Non-Hispanic Whites. Asian or Asian American students were coded 2, and Black or African American students were coded 3. Because the number of students who reported other race/ethnic identities including multiracial individuals were small, they were combined into one category called Other, and was coded 4. Lastly, Parent's Education was also a categorical variable, where parents with high school degree or less were coded 1, some college was coded 2, bachelor's degree was coded 3, and graduate's degree or higher was coded 4.

Data Analyses and Results

Sample descriptive statistics are presented in Table 1. A review of this table suggests that FLS and non-FLS students are not that different from one another. This was further tested via a series of t-tests which are presented in Table 2. In Table 2, there are a few notable differences among our sample respondents. Students who took the FLS course have statistically higher scores on the FWB, subjective knowledge, financial behavior, and financial self-efficacy measures. Additionally, the FLS sample has slightly low scores on the FSS measure. There are a few other details worth considering from Table 1. About 40 percent of the sample respondents reported having a student loan. Student loan borrowers reported holding an average of $15,000 in federal loans. Student loan borrowers also had lower scores on FWB and higher scores on the FSS.

A majority of our sample are female (N = 221) and White (N = 272). Both of these numbers are proportionally similar to the University's student population. Male and Female students were quite similar across all measures except for FWB, where female students reported slightly lower score on average than male students. Most of the students in the sample came from highly-educated household with 81 percent reported having a parent with at least a college degree or more. Parental education appears to be another significant differentiator, as students from households where a parent has a college degree or more reported substantially higher FWB and lower scores on the FSS when compared to students who reported parents with a high school diploma or less. Almost all of the undergraduate

students were between the ages of 18 and 21 years old.

[Table 1]

[Table 2]

Table 3 provides a summary of descriptive statistics for student loan borrowers in our sample. There were 140 students reported holding either federal student loans, private student loans, or both. Among the 83 students who only held federal loans, the average reported amount was $15,805. Only 6 students had only private loans, and they reported holding an average of $21,667 in student loan debt. Additionally, there were 33 students who reported holding both federal and private student loans, and their average reported debt amount was $30,032. Additionally, for those students who provided the necessary permissions, administrative loan data were matched to students' survey responses of self-reported debt amounts. The data show that on average, FLS students were more likely to underestimate their debts (Mean = -$3,856) whereas non-FLS students tend to overestimate their debt amount (Mean = $5,164). It should be noted that differences between reported debt and actual debt were not statistically significant when comparing FLS students and non-FLS students.

[Table 3]

OLS Regression

Differences in FWB and FSS were further explored in a series of OLS regression analyses. In Model 1, FWB was estimated on two dummy variables of interest (i.e., FLS course completion status and student loan status), the measurement scales of objective and subjective financial knowledge, financial stress, financial strain, financial socialization, peer socialization, financial behavior, and financial efficacy, and controls on all demographic information including gender, race, and parent education. Since many students did not provided information on parent's income, parent's education was used as a proxy for individual's socioeconomic background. Parent's education is one of the three core components for measuring socioeconomic status (for Education Statistics, 2012). The model was significant [$F(19, 338) = 13.04$, $p < .0000$], explaining 42% of the variation in FWB. Demographic controls were mostly not significantly associated with FWB, except for gender and other race. Female students, on average, scored 0.93 percentage point lower than male students on FWB scale. FLS course exposure did not have a statistically significant effect on FWB in the OLS regression model. Similarly, student loan status showed a negative but insignificant effect on FWB. FSS and the single item measure of financial strain were both significant and negatively associated with FWB. A one-point increase in Financial Stress reduced FWB by an average of 0.20 percentage points. Self-reported financial behavior, and financial self-efficacy were both positively associated with FWB.

In Model 2, we estimated FSS using the same two key dummy variables, objective and subjective knowledge, family and peer financial socializations measures, and controlled for

gender, race, and parent's education. The model was significant [$F_{(15, 342)} = 5.93$, $p <$ .0000], explaining 21% of the variation in FSS. Similar to Model 1, the FLS course measure was not significantly related to FSS. However, the presence of student loans was a significant factor, as the possession of student loans was associated with higher levels of stress (higher FSS). Having student loan was associated with a 4.34 percentage point increase on average in financial stress. Financial socialization was the other notable factor in predicting stress, although effects differed based on the type of interactions. Having more financial discussions within the household (family financial socialization) was associated with lower stress levels, whereas having more conversations with peers was associated with higher levels of stress. From the demographic controls, having parents who completed a bachelor's degree or higher level of education was negatively associated with Financial Stress as compared to students whose parents had a high school degree or less. Other demographic controls were not significant in Model 2.

[Table 4]

Summary and Discussions

The current study explored differences between students who opted to complete an FLS course and those who did not, with an emphasis on financial well-being (FWB) and financial stress (FSS). Whereas sample differences are evident from the simple t-tests, regression analysis suggests that those who took the FLS course did not report higher financial well-being or lower financial stress that those who did not take the course. In the regression models, most of the predictive power lies in factors like financial stressors and financial behavior (FWB) or financial socialization (FSS) and student loan debt. Although, we were anticipating an effect of the FLS course exposure, it is not surprising that there are statistically insignificant effects on both FWB and the FSS score. First, FLS is a one-credit course. Previous studies demonstrating significant impacts of post-secondary personal finances courses were based on courses with at least two-credit hours (Jobst, 2014). Secondly, FLS is an elective course, thus there is an issue of self-selection bias. In addition, there are inconsistencies in timing related to when the course was taken and when survey completion might have occurred across our observations.

Although the FLS measure did not appear to have much predictive power in either of the two core models, there are a number of interesting significant findings from the survey data. First, our findings on FWB reinforced previous work indicating the importance of financial self-efficacy and behavior (Robb, 2017). The existence of financial stressors was also a significant predictor for FWB. Altogether, these findings further reinforce the complicated nature of FWB, and suggest that education programs are simply a piece in the puzzle of helping consumers manage their finances effectively. Prior studies of student loan debt among U.S. adults indicated that FWB or financial satisfaction was not adversely impacted by possession of debt (Robb et al., 2019). The present results suggest that this may be changing as student loan debt is not only associated with lower FWB but also higher scores

on the FSS.

In exploring the financial stress scale, the findings around financial socialization are particularly notable. Whereas family financial socialization (FFS) was associated with lower scores on the stress scale, peer socialization was associated with higher scores on the FSS. These findings are supportive of earlier work on financial socialization and well-being (Ammerman & Stueve, 2019; Fan & Park, 2021). The role of family is also reinforced by the findings around parental education, as students from more educated household reported less stressors than students whose parents never went to college. There are certainly potential resource effects at work here given the association between income and education. As noted above, those students who held student loans reported higher levels of financial stress. Whereas student loans provide opportunities for students who might not otherwise be able to afford to attend college, it is increasingly important to consider possible negative impacts of high levels of borrowing at a young age on mental health and financial well-being.

Limitations

There are several significant limitations to our study worth discussing. First, the findings are not generalizable to other settings. Our study sample has 76 percent of non-Hispanic White students, which is similar to the institution's population but not at all to the general student population in the United States. The specific nature of the FLS course materials and teaching methods further limit generalizability. Second, these data are cross-sectional in nature and do not allow us to explore possible differences between those who self-select into the course. The data also limit our ability to explore timing of course exposure, as respondents may have just completed the course or may be a few years removed from it.

There were a few challenges in the sampling process that severely limited our ability to discuss student loan debt in more detail. Although we had an agreement with the Office of Student Financial Aid for data linkages, those linkages were dependent upon written student consent. The survey itself was administered online due to the campus being closed for Covid-19. Thus, the research team had to send individual mailings to students who completed the online survey. These mailings provided a pre-paid return envelope and a permission form. This complicated process greatly reduced the number of respondents completing all phases on the study, and the data received in this process are extremely limited.

Table & Figure

Figure 1. Outcome Measurement Scales

Financial Well-Being (14-86)	Subjective Financial Knowledge (1–7)
Financial Stress Scale-College Version (14–56)	Family Socialization (0-7)
Subjective Well-Being (1–25)	Peer Socialization (1–5)
Financial Self-Efficacy (1–20)	Financial Strain (1–5)
Objective Financial Knowledge (0–10)	Financial Behavior (1–45)

Table 1. Descriptive Statistics

	Financial Well-Being	Subjective Well-Being	Objective Knowledge	Subjective Knowledge	Financial Stress	Financial Strain	Family Socialization	Peer Socialization	Financial Behavior	Financial Efficacy	N
Full Sample N = 358											
FLS Completion											
Yes	30.19	17.88	7.15	4.87	25.52	1.57	4.96	2.81	32.75	14.89	171
	(6.18)	(3.76)	(1.61)	(1.16)	(7.28)	(0.79)	(1.77)	(0.84)	(6.17)	(3.22)	
No	28.56	17.49	6.96	4.09	26.59	1.76	5.17	2.72	31.29	14.29	187
	(6.55)	(3.75)	(1.75)	(1.33)	(7.63)	(0.87)	(1.47)	(0.89)	(6.32)	(3.17)	
Student Loan Status											
Yes	26.55	16.60	6.88	4.36	29.13	1.94	4.60	2.69	31.46	14.28	140
	(6.50)	(3.72)	(1.61)	(1.35)	(7.97)	(0.89)	(1.72)	(0.84)	(6.17)	(2.93)	
No	31.13	18.36	7.16	4.52	24.12	1.49	5.38	2.80	32.33	14.77	218
	(5.70)	(3.62)	(1.73)	(1.29)	(6.44)	(0.76)	(1.48)	(0.88)	(6.35)	(3.36)	

Table 1. Continued

	Financial Well-Being	Subjective Well-Being	Objective Knowledge	Subjective Knowledge	Financial Stress	Financial Strain	Family Socialization	Peer Socialization	Financial Behavior	Financial Efficacy	N
Full Sample N = 358											
Gender											
Male	30.88	17.76	7.82	4.96	25.09	1.54	5.31	2.89	32.53	15.21	137
	(6.38)	(3.95)	(1.53)	(1.18)	(7.32)	(0.75)	(1.55)	(0.87)	(6.81)	(3.25)	
Female	28.38	17.62	6.57	4.14	26.69	1.75	4.93	2.68	31.65	14.18	221
	(6.27)	(3.63)	(1.60)	(1.29)	(7.53)	(0.88)	(1.66)	(0.85)	(5.93)	(3.12)	
Race											
Non-Hispanic White	29.46	18.04	7.25	4.53	25.81	1.68	5.21	2.82	32.00	14.76	272
	(6.26)	(3.75)	(1.64)	(1.27)	(7.19)	(0.84)	(1.50)	(0.82)	(6.34)	(3.09)	
Asian/Asian American	29.04	16.63	6.19	3.96	26.73	1.62	4.81	2.44	32.35	13.79	52
	(6.69)	(3.40)	(1.63)	(1.36)	(7.95)	(0.82)	(1.84)	(0.94)	(6.27)	(3.54)	
Black/African American	30.00	16.30	6.65	4.65	26.85	1.60	4.15	2.65	30.60	14.70	20
	(8.63)	(4.47)	(1.73)	(1.27)	(9.13)	(0.82)	(2.25)	(1.04)	(7.40)	(3.51)	
Other	27.14	16.43	6.86	4.64	27.86	1.71	4.71	2.86	32.43	13.71	14
	(4.85)	(2.90)	(1.79)	(1.60)	(8.91)	(1.00)	(1.64)	(0.86)	(3.13)	(3.50)	
Parent's Education											
High School or Less	25.52	15.52	6.48	4.48	32.17	1.91	3.04	2.78	29.91	13.22	23
	(8.21)	(4.22)	(2.00)	(1.53)	(11.00)	(0.90)	(1.94)	(1.00)	(7.67)	(3.30)	
Some college	25.98	16.49	6.67	4.31	28.96	1.84	4.64	2.64	32.60	13.80	45
	(6.82)	(4.02)	(1.57)	(1.33)	(8.85)	(1.02)	(1.73)	(0.86)	(5.35)	(3.07)	
Bachelor's	29.44	17.95	7.08	4.50	25.73	1.70	5.29	2.78	31.67	14.77	133
	(6.07)	(3.63)	(1.61)	(1.25)	(7.19)	(0.82)	(1.47)	(0.82)	(6.83)	(3.38)	
Graduate or Higher	30.77	18.09	7.21	4.46	24.66	1.55	5.31	2.77	32.38	14.83	157
	(5.74)	(3.57)	(1.72)	(1.33)	(5.92)	(0.76)	(1.44)	(0.88)	(5.79)	(3.01)	
Age											
18 - 21	29.29	17.69	7.00	4.44	25.92	1.67	5.12	2.76	31.95	14.66	308
	(6.41)	(3.77)	(1.63)	(1.28)	(7.23)	(0.83)	(1.57)	(0.88)	(6.16)	(3.10)	
22 and Older	29.64	17.56	7.32	4.54	27.08	1.68	4.76	2.76	32.20	14.08	50
	(6.54)	(3.67)	(1.99)	(1.49)	(8.87)	(0.87)	(4.76)	(0.77)	(7.09)	(3.81)	

Table 2. Sample Statistics Comparing FLS and Non-FLS Students (Sample T-tests)

Variables	FLS (171)	Non-FLS (187)	P-value
FWB	50.99	50.03	0.06
FSS-CV	25.52	26.59	0.18
SWB	17.88	17.49	0.33
Financial Self-Efficacy	14.89	14.29	0.08
Objective Knowledge	7.15	6.96	0.29
Subjective Knowledge	4.87	4.09	0.00
Family Socialization	4.96	5.17	0.23
Peer Socialization	2.81	2.72	0.32
Financial Strain	1.57	1.76	0.03
Financial Behavior	32.75	31.29	0.03

Table 3. Descriptive Statistics - Student Loan

Student Loan Status	Mean	SD	Min.	Max.	N
Any Loan					140
Only Federal Loan	$15,805	$17,275	$1,000	$100,000	83
Only Private Loan	$21,667	$26,364	$5,000	$75,000	6
Both Loans	$30,032	$19,054	$3,000	$80,000	33

Table 4. OLS Regression Results

	Financial Well-Being	Financial Stress
FLS Course	0.104	-0.939
	(0.436)	(0.773)
Have Student Loan	-0.839	4.156***
	(0.465)	(0.794)
Subjective Knowledge	0.372	-0.229
	(0.196)	(0.321)
Objective Knowledge	0.100	-0.011
	(0.137)	(0.243)
Financial Stress	-0.200***	
	(0.036)	
Financial Strain	-0.707*	
	(0.305)	
Family Socialization	0.205	-0.552*
	(0.142)	(0.250)
Peer Socialization	0.122	0.959*
	(0.252)	(0.438)
Financial Behavior	0.075*	
	(0.037)	
Financial Efficacy	0.176*	
	(0.073)	
Controls		
Female	-0.916*	0.731
	(0.464)	(0.821)
Race/Ethnicity		
Asian/Asian American	0.855	0.484
	(0.615)	(1.087)
Black/African American	0.700	0.376
	(0.946)	(1.679)
Other	-2.491*	0.735
	(1.072)	(1.902)
Parent's Education		
Some College	0.798	-2.185
	(1.039)	(1.837)
Bachelor's	1.639	-4.951**
	(0.966)	(1.688)
Graduate or Higher	1.886*	-5.301**
	(0.956)	(1.668)
Constant	47.428***	30.021***
	(2.086)	(2.970)
Observations	358	358
R-squared	0.407	0.196

Standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05

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