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College student interest in personal finance education

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Abstract

This study investigates demand for investing in financial literacy while in college using survey responses from a cross-section of students at a medium-size, private university. Results indicate that student interest in personal finance education is largely a function of perceived return, time cost, financial independence, and gender where female students have relatively more interest. Income, patience in consumption, credit experience, numerical ability, and other factors are not consistently significant to demand. The results support offering learning opportunities for individual personal finance topics in addition to a personal finance course. © 2016 Academy of Financial Services. All rights reserved.

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1. Introduction

Financial education has long been thought to improve financial outcomes. Efforts to educate U.S. youth in primary and secondary schools resurged in the 1970s after falling out of favor (e.g., Bernheim, Garrett, and Maki, 2001). However, U.S. state-mandated personal finance education in grades K-12 is unevenly applied (Council for Economic Education, 2014), and its efficacy on financial outcomes is mixed (e.g., Hastings, Madrian, and Skimmyhorn, 2013).

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College may be one of the last opportunities to help the young become more financially knowledgeable and confident. However, personal finance education is voluntary for many college students. The challenge is to increase student participation, but little is known about the drivers of student interest in personal finance education. For example, Lyons (2004) finds that financially at-risk students are relatively more interested in campus-provided money management information. More recently, Beierlein and Neverett (2013) examine the characteristics of students who take a personal finance course and find that gender, major, verbal SAT score, and high school GPA influence enrollments.

This study examines undergraduate college student demand for personal finance education using classic determinants of demand and gender to gain insights into increasing student participation in financial education. The sample is from a medium-size, private university that does not require personal finance as part of the curriculum. The campus has a small but emerging financial literacy program limited to Salt, a one-week speaker series each semester, and individual counseling from the financial aid office and the wellness center. Because of these limited opportunities for students, we characterize demand as stated interest in personal finance education.

Based on the theory of investment in financial literacy in Jappelli and Padula (2013), we model college student demand for personal finance education (the general body of knowledge) as a function of income, patience in consumption, time or effort cost as a price variable, initial stock of financial literacy, perceived return on financial literacy, and financial independence. Gender is added as an experimental variable. We also examine the demand for learning about specific topics within personal finance that are likely to benefit college students such as personal budgeting, credit cards, student loans, and an "other topics" category to capture interest in learning about retirement planning, leasing versus buying, and so forth.[1]

Prior studies indicate that numerical ability is associated with patience in consumption, the cost of acquiring financial literacy, and the initial stock of financial literacy (e.g., Agarwal and Mazumder, 2013; Bansak and Starr, 2010; Cole, Paulson, and Shastry, 2016; Jappelli and Padula, 2013). We explore the influence of math ability on demand for personal finance education by using a student's self-reported math ability, highest level of math course completed, and score on a five-question numeracy quiz based on Banks and Oldfield (2007).

We survey students and find that perceived return and time cost explain most of the variation in the demand for personal finance education while in college. These results are robust to alternative models and empirically support the theory in Jappelli and Padula (2013). However, student characteristics have varying influences on demand for specific topics within personal finance. For example, financial independence is positively and significantly related to all topics except credit cards. Students without student loans are relatively uninterested in learning about student loans. Self-reported math ability positively influences the demand for learning about personal budgeting and topics within the "other" category.

Gender has independent and robust explanatory power for interest in all personal finance topics except the "other" category. However, the significance of gender is reduced when math ability is included in regressions. On average, sample females self-report lower math ability and achieve lower scores on the numeracy quiz compared to males. Sample females are more likely to work part time, have student loans, and are significantly more interested

in personal finance education. Our gender results conflict with the findings in Chen and Volpe (2002) and Beierlein and Neverett (2013).

This study contributes to understanding the demand for personal finance education and is conducted in the spirit of increasing college student participation. We use a theory-based approach to investigate student interest in personal finance education and provide an empirical test of the investment function in Jappelli and Padula (2013). We also add to the literature on the influence of gender and numerical ability on interest in financial education.

Our study is similar to Chen and Volpe (2002) and Beierlein and Neverett (2013). Chen and Volpe collect gender, student income, and other attributes to examine college student personal financial knowledge and perceptions of the importance of financial knowledge. Beierlein and Neverett examine characteristics of students who enroll in a personal finance course including gender, race, age, standardized test scores, major, and other attributes. Our study attempts to discover factors that drive interest in specific personal finance topics that are likely to benefit college students. Many campuses are implementing financial literacy programs that include workshops and peer mentoring. Our study supports the idea of offering opportunities for students to learn about individual personal finance topics through various delivery methods in addition to a more comprehensive personal finance course. The findings in our study may help to target specific types of students and increase participation in financial literacy programs and services.

We acknowledge the limitations of this study. We sample from a single, private university largely attended by 18- to 22-year-old students, and our results may not apply to a more diverse student population. We also characterize demand as stated interest in personal finance education. However, utilization of personal finance education resources may be a more precise measure of demand. Some measures of variables used to test demand are compromises rather than ideals. For example, we include a single measure of patience in consumption. This attribute may be better measured by creating an index from responses related to patience in consumption. However, we opt for a single question about patience in consumption for survey brevity. We also do not include parental income as an explanatory variable because of concern about reporting accuracy. Finally, the inclusion of math ability as an explanatory variable for interest in personal finance education ignores the possibility that the subject may be presented in a way that minimizes math.

The article continues as follows: Section 2 discusses the literature related to college student demand for personal finance education and states hypotheses. Section 3 describes the survey used to collect data for hypotheses tests. The sample is described in Section 4. In Section 5, we present the empirical methods used to test the hypotheses. Empirical results are discussed in Section 6, and Section 7 concludes.

2. Literature review and hypotheses

Jappelli and Padula (2013) present an intertemporal consumption model in which an individual chooses retirement savings and financial literacy investment given an initial stock of financial literacy and other parameters. Initial financial literacy is characterized as financial knowledge before entering the labor market that Jappelli and Padula suggest is

related to schooling and parental background. Financial literacy is treated as human capital and is assumed to increase asset returns at a decreasing rate. Consumers may choose to purchase additional financial literacy at a cost of money, time, or effort. Financial literacy and savings are jointly determined and positively correlated over the life cycle. Optimal investment in financial literacy is a function of income, patience in consumption, monetary and time/effort cost, the initial stock of financial literacy, and the return on financial literacy. Investment in financial literacy increases in income, patience in consumption, and the return on financial literacy and decreases in the initial stock of financial knowledge and cost. The generosity of a financial safety net (such as Social Security) lowers the need to accumulate wealth and invest in financial literacy.

The predictions in Jappelli and Padula (2013) form the basis of our hypotheses related to student demand for financial education while in college. Below, we relate each variable in the model of financial literacy investment—income, patience in consumption, cost, the initial stock of financial literacy, return on financial literacy, and a safety net—to proposed measures that may explain college student demand for personal finance education and state empirical hypotheses.

2.1. Income

Income is a conventional determinant of demand and is predicted to positively influence investment in financial literacy in Jappelli and Padula (2013). Sources of income for college students may include labor income, gifts, savings, or scholarships. However, some students may trade off employment for studying and work part-time (if at all). An alternative view of income is to classify students as working or not. The timing of full-time labor force entry may influence the choice to invest in financial education while in school. For example, most college seniors expect to earn full-time income within one year, whereas full-time labor force entry is not imminent for most freshmen. Other things constant, year in school may approximate the role of income in the decision to invest in financial literacy. We hypothesize that income (alternatively measured as current income, employment status, and year in school) is positively and independently associated with interest in personal finance education while in college.

2.2. Patience in consumption

Jappelli and Padula (2013) predict that patience in consumption drives investment in financial literacy. Their empirical results support this prediction where more patient consumers choose to invest in financial literacy and accumulate relatively more wealth. Meier and Sprenger (2013) also support this notion in a study of low-income individuals who are offered a free credit counseling session as a complementary service to the Volunteer Income Tax Assistance (VITA) program. Empirical results suggest that VITA customers who opt for credit counseling are more patient in consumption. Based on the theory in Jappelli and Padula and prior empirical results, we predict that patience in consumption will positively influence student interest in personal finance education while in college.

2.3. Cost of financial education

Jappelli and Padula (2013) suggest that the cost of investing in financial literacy is related to money, time, or effort. For college students, we assume that the marginal monetary cost is relatively low if a personal finance course is taken as a nonoverload elective or the student uses a campus-provided personal finance resource (counseling, workshop, web site, etc.). However, acquiring financial education by taking a personal finance course, attending a free campus counseling session, workshop, or using online resources requires time and effort. Because the monetary cost is likely low for college students, we focus on time and effort costs of acquiring financial literacy while in college. We predict that higher perceived time and effort costs will reduce the demand for personal finance education.

2.4. Initial stock of financial literacy

The model in Jappelli and Padula (2013) predicts that a higher initial stock of financial literacy reduces investment in financial literacy. The initial stock of financial literacy may result from prior personal finance education while in high school, from parents, or other sources. While many U.S. college students are exposed to formal training in personal finance in grades K–12, the state-mandated depth and quantity of the exposure may vary greatly. According to the 2014 Survey of the States conducted by the Council for Economic Education, 43 states include personal finance in the K–12 education standards. Of these 43 states, only 19 require a stand-alone personal finance course to be offered in high school, and 17 of the 19 states require the course as part of the curriculum. States that require personal finance in high school change from year to year. For example, New York drops and Florida adds the requirement between 2011 and 2014 (Council for Economic Education, 2014).

The uneven state mandates for personal finance education in grades K–12 may endow the typical high school graduate with a small stock of financial literacy (e.g., Chen and Volpe, 1998; Cummins, Haskell, and Jenkins, 2009). Mandell and Klein (2009) find no significant difference in the spending and saving habits of individuals who receive personal finance education while in high school compared with a control sample. In Chen and Volpe (2002), most students do not recognize personal finance education in high school as a source of financial education and instead indicate parents or prior financial mistakes as the leading sources of financial education. However, prior financial education may increase interest in acquiring additional financial education (Goetz, Cude, Nielsen, Chatterjee, and Mimura, 2011).

Experience with debt may contribute to the initial stock of financial literacy. Students who are responsible for paying credit card bills or have other personal loans may have relatively more financial knowledge gained through experience with debt products. A student with accumulated debt may be interested in financial education as a way to improve debt management. Lyons (2004) finds that students who are delinquent on credit card payments have the highest demand for financial education. However, Meier and Sprenger (2013) do not find that prior financial experience and knowledge influence demand for additional financial education in the form of credit counseling.

In summary, prior studies suggest two measures of the initial stock of financial literacy: prior financial education and debt experience. However, empirical results for these measures do not clearly support the Jappelli-Padula model prediction that the initial stock of financial literacy reduces the incentive to invest in financial literacy. Therefore, the influence of prior financial education and debt experience on interest in investing in personal finance education while in college is ambiguous.

2.5. Numerical ability

Prior studies suggest that numerical ability may summarize patience in consumption and time or effort cost. For example, Agarwal and Mazumder (2013) find that patience in consumption is strongly correlated with math ability. Students with low actual or perceived numerical ability are generally turned off by subjects thought to involve math (e.g., Bansak and Starr, 2010). However, Beierlein and Neverett (2013) find that math SAT scores do not influence college student enrollment in an elective personal finance course.

Numerical ability is also associated with the initial stock of financial literacy in prior studies. Jappelli and Padula (2013) find that math and reading skills at the age of 10 are strong predictors of current financial literacy. Results from the 2012 OECD Programme for International Student Assessment (PISA) show a strong positive correlation between financial literacy and math and reading skills for 15-year-old students (OECD, 2014). Cole et al. (2016) present large-sample evidence that math ability and not exposure to personal finance education in high school matters to financial outcomes. The authors compare financial outcomes for pre- and post-mandated changes in financial education and math education programs in high schools. State mandated personal finance courses do not influence financial outcomes measured as the likelihood of having investments, level of investment income, credit score, credit card delinquency, and probability of bankruptcy or foreclosure. State requirements that high school students take additional math courses are associated with increased asset accumulation, reduced credit card delinquency, and reduced probability of foreclosure. Gerardi, Goette, and Meier (2013) find a strong inverse relationship between numerical ability and mortgage default, independent of cognitive ability and financial literacy.

Based on the theory in Jappelli and Padula (2013), demand for financial education is expected to increase in patience in consumption and decrease in the cost of acquiring the education and the initial stock of financial literacy. If numerical ability suffices for these three determinants of demand, then its influence is a priori ambiguous. Further, the mixed empirical results do not suggest a distinct influence of numerical ability on the demand for financial education. Therefore, we do not make a prediction about the influence of numerical ability on student interest in personal finance education.

2.6. Return on financial literacy

The return on financial literacy positively influences investment in financial literacy in Jappelli and Padula (2013). We approximate the return on financial literacy by measuring college students' perceptions of the return on financial education. Chen and Volpe (2002)

support the idea of a perceived return by asking students to rate the importance of a menu of college courses. The majority of students view a course in personal finance as either very or somewhat important to improving the quality of their lives. We predict that a student's perception of the benefits of financial literacy is positively associated with the demand for personal finance education.

2.7. Financial safety net

Jappelli and Padula (2013) predict and find that the generosity of a financial safety net (e.g., Social Security) reduces both investment in financial literacy and wealth accumulation. A parent or other source of nonlabor income may provide a financial cushion, causing students to effectively defer financial responsibility. Therefore, a student who is relatively financially dependent may not view financial education as relevant. Prior studies do not suggest a consistent relationship between financial independence and interest in personal finance education (Goetz et al., 2011; Lyons, 2004). Because the empirical evidence is mixed, we defer to the Jappelli-Padula model and predict that the incentive to invest in financial literacy while in school is positively associated with the student's degree of financial independence.

In summary, we predict that college student willingness to invest in financial education while in school is positively related to income, patience in consumption, perceived return on financial education, financial independence, and inversely related to time cost. The influence of the initial stock of financial literacy and numerical ability on interest in acquiring financial education is ambiguous. These variables are constructed from survey results, described next.

3. Survey

3.1. Survey questions

We survey college students at a private, midsize university to measure demand for personal finance education as a function of the variables associated with optimal investment in financial literacy from Jappelli and Padula (2013) and related studies. Demand is measured by asking students to use a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree) to rate interest in learning about all personal finance topics (collectively) while in college. We also measure interest in learning about specific topics within personal finance that may appeal to college students including budgeting, credit cards, student loans, and a group of "other" topics (leasing vs. buying, retirement planning, etc.). The individual topics are chosen from the introductory personal finance textbook by Kapoor, Dlabay, and Hughes (2013).

Alternative measures of income include annual income, employment status, and year in school. The survey asks students to indicate annual income with a 5-category range from $10,000 or less to $25,000 and over. Students are asked to identify employment status (full-time, part-time, or not working) and year in school (freshman, sophomore, etc.).

Patience in consumption is measured by an implied discount rate following Agarwal and Mazumder (2013) and Meier and Sprenger (2013). Our survey includes the open-ended question, "You win a prize. You have the choice to either receive $100 today or to wait 1 year and receive a larger prize. What is the smallest prize amount that would convince you to wait 1 year to collect your winnings?" This question is a simplification of the 2006 National Longitudinal Survey of Youth (NLSY) survey question (Bureau of Labor Statistics, 2006). The NLSY question wording is complex and uses a larger dollar amount ($1,000). Agarwal and Mazumder (2013, online Appendix, p. 1) find that "many respondents provided answers that were clearly unreasonable, with absurdly high implied discount rates." The discount rates may reflect the large dollar amount used in the question, math skills, or the ability to correctly read and understand the question.

Time and effort cost is measured by asking students to identify the number of hours per week they are willing to spend learning about personal finance with a scale of 0, 0.5, 1, 2, on up to 5-plus hours. Lower response values indicate a higher time or effort cost of investing in personal finance education.

The initial stock of financial literacy has two alternative measures: prior financial education and having other debt excluding student loans (e.g., credit card or car loan). Prior financial education is measured by the yes/no response to a question about personal finance education in high school, the military, or the workplace. We focus on nonstudent loan debt as an indicator of the initial stock of financial literacy because student loan payments are deferred. Having nonstudent loan debt is the yes/no response to the question, "I have other, nonstudent loan debt (e.g., credit card, car loan, etc.)." We recognize that many students may not have a credit card because of current credit card laws that may prevent students under the age of 21 from obtaining a credit card without a cosigner.

Perceived return on financial literacy is measured by the response to the question, "Learning about personal finance topics while in college will improve my ability to make good financial decisions in the future." The responses follow a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree).

The degree of financial independence is measured by asking students to identify the percentage of self-paid living expenses using the examples of food, housing, and so forth. The survey question has five response categories (0%, <50%, 50%, >50%, and 100%) ranked as 0% = 1 to 100% = 5.

The survey includes three measures of numerical ability for robustness: self-perception of math ability, self-reported highest level of completed math course, and a rank based on the number of correct responses to a 5-question quiz modeled after Banks and Oldfield (2007). For the first measure, each student rates her/his mathematical ability compared with the average peer following the 5-point rating scheme in Bansak and Starr (2010) (bottom 10%, below average, average, above average, and top 10%). Bansak and Starr find that student perception of math ability closely corresponds to self-reported college entrance exam scores. The second measure is the self-reported, highest-level math course completed. Cole et al., (2016) find that more math education predicts better financial outcomes. We provide a checklist of typical college math courses and a write-in response for other math courses completed including advanced placement courses.

The five questions from Banks and Oldfield (2007) are open-ended and students are not permitted to use a calculator to answer the questions. Because we use paper surveys and cannot control the order in which the questions are answered, we omit the first question in Banks and Oldfield that is offered only in the event that a survey participant incorrectly answers the subsequent three questions. Survey questions are ordered by difficulty and labeled q1-q5. Individual numerical ability is classified into four groups based on Banks and Oldfield. Group 1 displays the lowest numerical ability and either incorrectly answers q1-q3, or correctly answers q1 with incorrect answers for q2-q4. Group 2 has at least one correct answer to q2-q4. Group 3 correctly answers q1-q4 with q5 incorrect. Group 4 correctly answers q1-q5.

To analyze interest in student loans and credit cards, we ask if students have a student loan (yes/no) and a credit card (yes/no). Having a student loan may drive interest in learning about student loans. Having a credit card in combination with financial responsibility for paying the credit card bill may be helpful to understand student interest in learning about credit cards. Financial responsibility for a credit card is measured by asking students to identify the percentage of the credit card bill paid by themselves (0%, <50%, 50%, >50%, and 100%).

We also collect gender. Gender may capture inherent interest in personal finance. For example, Beierlein and Neverett (2013) find that males are more likely to enroll in a personal finance course. Chen and Volpe (2002) find gender differences among college students related to the perception of personal finance, where male students rank personal finance courses as relatively more important.

3.2. Survey protocol

This research involving human subjects is approved by the University's Institutional Review Board. The survey is offered to undergraduate students across the University during Spring 2015 and is administered in paper form by the authors or other faculty members on their behalf to achieve a fair representation across majors, year in school, and gender. The survey does not ask for personally identifying information such as name, address, or student identification number. Participants are asked to sign and date an informed consent form that describes the purpose of the research, its benefits and risks, and that participation is voluntary. Each completed survey is assigned a number that is recorded on both the informed consent form and the survey form. The anonymity of the respondents is maintained by separating the informed consent form from the completed survey. Survey responses for each student are recorded using only the assigned number as the observation identifier.

4. Sample description

In total, 546 students have completed the survey. Three participants are dropped from the sample either because the participant is under 18 years old or a graduate student. Another 47 participants do not fully complete the survey and are dropped from the sample. The final sample contains 496 observations and represents around 7% of undergraduate students across

the four colleges of the University. Although not tabulated, the sample proportions from each college are similar to the percentage of undergraduates enrolled in each college.

Table 1 displays the mean interest in personal finance education measured on five dimensions (learning about budgeting, credit cards, student loans, other topics, and all topics) for each sample attribute (gender, income, etc.). Survey participants are 56% female and 44% male. On average, female students have relatively more interest in learning about student loans while in college (t statistic is 2.72), but average demand for learning about budgeting, credit cards, other, and all topics is not statistically different between female and male students.

Mean demand by income range is reported in Panel A of Table 1. Because most students (80.6%) report income of $10,000 or less, we redefine income categories as income ≤$10,000 and income >$10,000. The mean interest in personal finance topics is not statistically different between the two income groups. Regarding employment status, 47.2% of students report working part time, 2.8% work full time, and 50% are not working. Students who work part-time are significantly more interested in learning about student loans compared to students who are not working (t statistic is 5.46). All other differences in means are not significant. The final income measure is level in college. The sample consists of 25.4% freshmen, 24% sophomores, 30% juniors, and 20.6% seniors. No college level is statistically more interested in learning about personal finance.

The survey response for patience in consumption is open ended and therefore continuous. Responses for the least amount of money students would accept to wait one year to receive $100 range from $0 to $1,000,000. Implied discount rates range from −100% to 999,900% with a mean of 13,891% and median of 400%. These results are similar to Agarwal and Mazumder (2013, online Appendix) who also find high discount rates. We dichotomize the results as 0–1 by classifying responses as "more patience" (=1) if the discount rate is below the median and "less patience" otherwise. Mean interest in personal finance education by patience in consumption is displayed in Panel A of Table 1. Patience in consumption does not matter to interest in personal finance education with the exception of learning about topics in the other category. Students classified as more patient are significantly more interested in learning about leasing v. buying, and so forth (t statistic is 2.90).

The time and effort cost survey question contains seven possible responses for the hours per week that students are willing spend learning about personal finance topics. In Panel A of Table 1, responses are grouped into 0–1 hour, 2–3 hour, and 4–5+ hours. Students willing to spend the most time have the highest interest in learning about all personal finance topics except for student loans. These results are supported by t tests between the 0–1 and 4–5+ hours groups.

The initial stock of financial literacy is approximated by the student having nonstudent loan debt and alternatively as having prior financial education. In Panel A of Table 1, 24% of students have nonstudent loan debt. On average, these students are significantly more interested in learning about all personal finance topics but with no statistical difference for learning about specific topics. Only 27.8% of sampled students report having prior financial education, but this exposure does not result in a statistically different interest in learning about personal finance.

Table 1 Mean demand for personal finance education while in college by student attribute
Panel A

$N = 496$	*n/N%*	Dbudget	Dcard	Dsloan	Dother	Dall
Female	56.0%	5.69	5.25	4.97	5.67	5.72
Male	44.0%	5.61	5.00	4.52	5.83	5.68
t test (female-male)		0.68	1.95	2.72	−1.32	0.28
Income > $10,000	19.4%	5.73	5.21	4.67	5.78	5.82
Income ≤ $10,000	80.6%	5.64	5.13	4.80	5.73	5.67
t test (higher-lower)		0.59	0.48	−0.64	0.33	0.95
Work part-time	47.2%	5.71	5.23	5.24	5.85	5.79
Work full time	2.8%	5.71	5.57	4.71	5.86	6.07
Not working	50.0%	5.61	5.04	4.35	5.63	5.60
t test (part time-not)		0.86	1.53	5.46	1.79	1.67
Freshman	25.4%	5.65	5.02	4.63	5.63	5.61
Sophomore	24.0%	5.55	4.95	4.92	5.66	5.64
Junior	30.0%	5.70	5.26	4.73	5.85	5.70
Senior	20.6%	5.74	5.34	4.85	5.80	5.89
t test (freshman-senior)		−0.53	−1.77	−0.94	−1.03	−1.72
More patience	49.8%	5.70	5.19	4.81	5.91	5.78
Less patience	50.2%	5.61	5.10	4.75	5.57	5.62
t test (more-less)		0.85	0.75	0.36	2.90	1.39
Time spent 0–1 hour	47.8%	5.33	4.81	4.55	5.38	5.32
Time spent 2–3 hour	40.5%	5.85	5.40	5.01	5.95	5.93
Time spent 4–5+ hours	11.7%	6.33	5.64	4.88	6.45	6.48
t test (most-least)		5.33	3.90	1.18	5.32	6.23
Has nonstudent loan debt	24.0%	5.62	5.31	5.03	5.90	5.94
No nonstudent loan debt	76.0%	5.67	5.09	4.70	5.69	5.63
t test (has-no)		−0.34	1.46	1.70	1.52	2.37
Has prior financial education	27.8%	5.64	5.02	4.70	5.64	5.70
No prior financial education	72.2%	5.66	5.19	4.80	5.77	5.70
t test (has-has not)		−0.22	−1.21	−0.55	−0.97	−0.06
Low return (1–5)	14.5%	4.39	4.26	3.88	4.32	4.32
High return (6–7)	85.5%	5.87	5.29	4.93	5.98	5.94
t test (high-low)		7.95	5.35	4.66	8.26	8.55
Return = 6	36.7%	5.47	4.86	4.58	5.45	5.45
Return = 7	48.8%	6.17	5.62	5.19	6.38	6.30
t test (7–6)		7.34	6.18	3.54	8.91	8.83
Living expenses = 0%	28.8%	5.53	5.15	4.36	5.68	5.57
Living expenses < 50%	35.1%	5.53	5.14	4.90	5.64	5.70
Living expenses = 50%	12.7%	5.49	4.92	4.60	5.51	5.44
Living expenses > 50%	12.3%	6.20	5.28	5.28	6.08	6.05
Living expenses = 100%	11.1%	5.98	5.24	5.13	6.09	5.96
t test (100% to 0%)		2.03	0.38	2.51	1.99	1.82

Panel B

$N = 496$	*n/N%*	Dbudget	Dcard	Dsloan	Dother	Dall
Has credit card	59.3%	5.67	5.15	4.73	5.79	5.75
No credit card	40.7%	5.64	5.14	4.84	5.66	5.63
t test (has-has not)		0.28	0.06	−0.61	1.03	0.97
Pays credit card = 0%	29.2%	5.52	4.97	4.40	5.64	5.57
Pays credit card < 50%	9.7%	5.58	5.38	4.81	5.90	5.94
Pays credit card = 50%	4.2%	5.29	4.48	3.90	5.62	5.33
Pays credit card > 50%	3.6%	5.56	5.17	4.56	5.72	5.50
Pays credit card = 100%	19.8%	5.82	5.40	5.22	5.93	5.93

Table 1 (Continued)

$N = 496$	*n/N%*	Dbudget	Dcard	Dsloan	Dother	Dall
Pays credit card N/A	33.5%	5.76	5.16	4.96	5.68	5.68
t test (100% to 0%)		1.66	2.29	3.41	1.60	2.06
Has student loan	56.0%	5.70	5.19	5.62	5.70	5.78
No student loan	44.0%	5.60	5.09	3.71	5.79	5.60
t test (has-has not)		0.89	0.79	13.04	−0.76	1.57
Ability ≤ average	55.6%	5.54	5.08	4.86	5.57	5.65
Ability > average	44.4%	5.81	5.23	4.67	5.95	5.77
t test (lower-higher)		−2.46	−1.20	1.12	−3.27	−1.04
Highest math is algebra	65.9%	5.61	5.07	4.77	5.61	5.64
Highest math ≥ calculus	34.1%	5.74	5.29	4.79	5.98	5.82
t test (algebra-calculus)		−1.07	−1.69	−0.15	−2.96	−1.45
Math quiz group 1	2.6%	5.38	4.38	4.92	5.69	5.31
Math quiz group 2	40.7%	5.70	5.25	4.65	5.60	5.67
Math quiz group 3	33.9%	5.60	5.20	5.10	5.79	5.79
Math quiz group 4	22.8%	5.71	4.96	4.50	5.92	5.67
t test (group 2-group 4)		−0.07	1.84	0.65	−2.03	0.00

Notes: Dbudget, Dcard, Dsloan, Dother, and Dall represent demand for learning about personal budgeting, credit cards, student loans, other personal finance topics, and all personal finance topics, respectively. Time spent is the number of hours per week the student is willing commit to personal finance education. Return is the perceived return from personal finance education. Living expenses is the percentage of living expenses paid by the student. Ability is self-reported math ability. Highest math is the highest level of math course completed. Group is the rank based on a 5-question numeracy quiz score.

In Panel A of Table 1, 85.5% of students sampled either agree or strongly agree that learning about personal finance topics while in college will improve their ability to make good financial decisions in the future. Therefore, we display descriptive statistics for this variable as high perceived return on financial literacy corresponding to a response of agree or strongly agree (Likert scale response of 6 or 7), and low perceived return for all other responses. Students with a high perceived return have higher interest in every personal finance topic. We test for differences in interest among the agree and strongly agree responses. Students who strongly agree have a statistically significant higher interest compared with students who agree.

Panel A of Table 1 shows mean responses by percentage of living expenses paid by the student as an approximation of a financial safety net. Around 29% of students pay 0% of living expenses and 11% of surveyed students fully support themselves. Students who fully pay their living expenses are significantly more interested in learning about budgeting, student loans, and topics in the other category.

Statistics on having credit cards, paying credit card bills, and having student loans are in Panel B of Table 1. Around 59% of sampled students report having a credit card, but only 19.8% report paying 100% of their credit card bills. Having a credit card does not matter to interest in personal finance education. Students responsible for paying 100% of their credit card bills are statistically more interested in learning about credit cards, student loans, and all personal finance topics. Of the students surveyed, 56% have student loans. These students are significantly more interested in learning about student loans while in college.

Table 2 Correlations between numeracy measures

	Ability	Math level	Group	Patience	Cost	Fined
Ability	1.00	0.43 (<.0001)	0.33 (<.0001)	0.13 (0.0046)	0.04 (0.3716)	−0.06 (0.1928)
Math level		1.00	0.19 (<.0001)	0.16 (0.0004)	0.08 (0.0814)	−0.01 (0.8056)
Group			1.00	0.10 (0.0211)	0.01 (0.8318)	−0.02 (0.7177)
Patience				1.00	0.11 (0.0178)	−0.01 (0.7983)
Cost					1.00	−0.02 (0.6480)
Fined						1.00

Note: Pearson correlation coefficients (*p* values) are presented in the table. Ability is self-reported math ability measured on a 5-point scale (1 = bottom 10%, 5 = top 10%). Math level is the highest level of math course completed. Group is the group based on the score on a numeracy quiz (1 = lowest, 4 = highest). Patience is a 0–1 indicator of the rate of time preference above (=0) or below the median (=1) based on responses to the corresponding survey question. Cost is an indicator of the hours the student is willing to commit to personal finance education while in college based on a 7-point scale (1 = 0, 7 = 5+). Fined is a 0–1 indicator of prior financial education (1 = no).

Panel B of Table 1 shows statistics for the measures of numerical ability. Most students report their ability as average (48%) or above average (38.5%) with very few students reporting ability as below average (6.7%), bottom 10% (1%), or top 10% (5.8%). Therefore, we display self-reported mathematical ability as average or below and above average in Panel B of Table 1. Self-reported highest level of completed math course has a similar distribution. Thirty students (6.1%) have yet to complete a college level math course. The majority of these students are freshmen (not tabulated). For students who have completed college math courses, the highest level is lower-level algebra for 12.5% and higher-level algebra for 53.4% of the sample. The first calculus course is the highest level for 29.2%, and 4.8% of students have completed the second calculus course or higher. Given the smaller proportions of the sample at the extremes of this distribution, math level is dichotomized as the highest level is any algebra course (65.9%) and highest level is the first calculus course and above (34.1%). Based on the results from the 5-question math quiz, 2.6% of students are ranked as Group 1, 40.7% as Group 2, 33.9% as Group 3, and 22.8% as Group 4. Regardless of measurement, students with higher numerical ability are statistically more interested in other personal finance topics. Only students who self-report high math ability are relatively more interested in learning about personal budgeting.

Table 2 presents correlations between the measures of numerical ability, patience in consumption, time cost, and prior financial education. The correlation coefficients for self-reported ability and highest math course completed, self-reported ability and Group, and highest math course completed and Group are 0.43, 0.33, and 0.19, respectively (p values $<$ 0.0001). The three measures of math ability share weaker correlations with the dichotomized expression of patience in consumption (1 = more patient). The self-reported highest math course completed is most strongly correlated with patience in consumption (p value = 0.0004) and the group ranking based on the math quiz score is least correlated with patience

(p value = 0.0211). The numerical ability measures, time cost, and prior financial education are not correlated with each other.

In untabulated results, the alternate measures of income are significantly correlated. Income is positively associated with working and college level. Working is also significantly positively correlated with having a credit card and nonstudent loan debt as well as paying a higher percentage of living expenses. The correlations also indicate gender differences with respect to income, time cost, prior financial education, and math ability. Females are more likely to work part time, have lower income, and have student loans. Males are willing to spend more time investing in personal finance education and have more prior financial education. Males also have higher math ability as measured by self-reported ability and the score on the math quiz.

5. Empirical method

Following Jappelli and Padula (2013), we model college student demand (d) for personal finance education as a function of income, patience in consumption (patience), cost of acquiring financial education (cost), the initial stock of financial literacy (stock), perceived return on financial education (return), and the existence of a financial safety net (net). Gender (gen) is included as an experimental variable. The regression function is:

$$d_j = b_0 + b_1\,\text{income}_j + b_2\,\text{patience}_j + b_3\,\text{cost}_j + b_4\,\text{stock}_j + b_5\,\text{return}_j + b_6\,\text{net}_j + b_7\,\text{gen}_j + e_j \quad (1)$$

We first examine student demand for learning about all personal finance topics (collectively) while in college as the response on a 7-point scale (1 = strongly disagree, 7 = strongly agree). Income is measured as the student's stated income range because this is the most direct measure of income from the survey. Employment status (part-time, full-time, and not working) and college level are used for robustness. Patience in consumption is the 0–1 variable created to represent discount rates above (=0) and below the median (=1), where 1 represents relatively more patience in consumption. Cost is measured as the time the student is willing to spend to learn about personal finance topics, where a low number represents a high time cost. The initial stock of financial literacy is an indicator of having nonstudent loan debt (=1, 0 otherwise). For robustness, prior financial education is the alternative measure of the initial stock of financial literacy. Because the majority of students in the sample do not have prior financial education, this variable equals one if the student does not have prior financial education. Return is the response to the perceived return to studying personal finance while in college, where higher responses indicate greater perceived returns. The financial safety net is measured as a categorical variable corresponding to the percentage of living expenses paid by the student and represents the degree of financial responsibility. Gender is equal to 1 if the student is female.

As defined in Eq. (1), the demand for learning about personal finance topics is expected to increase in income, patience in consumption, time the student is willing to spend, perceived return, and the percentage of living expenses paid by the student. The relationship

between demand and the initial stock of financial literacy is a priori ambiguous. Prior studies indicate that gender is correlated with interest in financial education. However, we do not have a theoretical basis for expecting gender to influence demand in any way and therefore do not make a prediction for this variable.

Numerical ability is hypothesized to be correlated with patience in consumption, cost of acquiring financial literacy, and the initial stock of financial literacy. We test this hypothesis by substituting a measure of math ability for these variables. However, the expected influence of math ability is a priori ambiguous given the predicted signs for patience, cost, and stock. The regression function is:

$$d_j = b_0 + b_1\,\text{income}_j + b_2\,\text{return}_j + b_3\,\text{net}_j + b_4\,\text{gen}_j + b_5\,\text{math}_j + e_j \quad (2)$$

Because the dependent variables are categorical in Eqs. (1) and (2), coefficient estimates are calculated via logistic regressions of demand on the hypothesized explanatory variables. Estimates are with respect to the highest response measure (strongly agree), capturing the influence of the explanatory variables on being highly interested in personal finance education while in college.

6. Results

6.1. Demand for all personal finance topics

Regression results for interest in learning about all personal finance topics are in Table 3. The results from estimating Eq. (1) are in Model 1 with a pseudo R^2 of 39%. Income and patience in consumption are statistically insignificant. Time cost is highly significant with the predicted sign (p value < 0.0001), supporting the hypothesis that students with a higher perceived time cost will have lower demand for personal finance education. The initial stock of financial literacy (measured by having nonstudent loan debt) is positively related but marginally significant to demand (p value $= 0.0231$). The coefficient estimate for return is positive and highly significant (p value < 0.0001), supporting the idea that students with a higher perceived return from financial education demand more financial education. Financial independence is positive and significant as predicted (p value < 0.0048). Finally, gender contributes a small amount of explanatory power to demand (p value $= 0.0129$), where female students are marginally more interested in all personal finance topics while in college.

Eq. (1) is estimated using alternative explanatory variable definitions where available (not tabulated). Income is alternatively defined as employment status and level in college. Neither alternative income measure is significant to the demand for all personal finance topics while in college. The income measures are correlated with the percentage of living expenses paid by the student. Dropping an income measure (however defined) from the regression does not change the statistical significance of the financial independence variable. Prior financial education is an alternate measure of the initial stock of financial literacy but is not significant to the demand for all personal finance topics. We also drop the dichotomous definition of patience in consumption and use its continuous version but this variable remains insignificant.

Table 3 Demand for learning about all personal finance topics while in college

	(1)		(2)		(3)	
	Estimate	*p* value	Estimate	*p* value	Estimate	*p* value
Intercept	−10.47	<0.0001	−10.63	<0.0001	−9.83	<0.0001
Intercept	−8.45	<0.0001	−8.60	<0.0001	−7.97	<0.0001
Intercept	−6.95	<0.0001	−7.10	<0.0001	−6.57	<0.0001
Intercept	−5.22	<0.0001	−5.39	<0.0001	−4.90	<0.0001
Intercept	−4.66	<0.0001			−4.34	<0.0001
Intercept	−4.05	<0.0001			−3.70	<0.0001
Income	−0.06	0.6032	−0.05	0.6540	0.05	0.6518
Patience	0.08	0.6408	0.09	0.6182		
Cost	0.59	<0.0001	0.60	<0.0001		
Stock	0.47	0.0231	0.48	0.0208		
Return	1.18	<0.0001	1.20	<0.0001	1.31	<0.0001
Net	0.19	0.0048	0.19	0.0055	0.17	0.0093
Gender	0.44	0.0129	0.43	0.0155	0.16	0.3600
Math					−0.02	0.8420
Psuedo R^2		0.39		0.40		0.31

Note: The dependent variable is interest in learning about all personal finance topics while in college measured on a 7-point scale (1 = strongly disagree, 7 = strongly agree). Model (1) is the estimation of Eq. (1). Model (2) is the estimation of Eq. (1) combining the lowest two response categories for the dependent variable. Model (3) contains estimates from Eq. (2). The results are maximum likelihood estimates with the highest value of the dependent variable [=7 in (1) and (3), =5 in (2)] as the reference. The intercepts reference the lower values for the dependent variable. The *p* values are for Wald χ^2 statistics.

Sample results for the dependent variable in Eq. (1) have relatively few responses for the strongly disagree and disagree categories. These responses are collapsed into a single category and Eq. (1) is re-estimated as a robustness check. The results, represented as Model 2 in Table 3, suggest that the estimates are not sensitive to the inclusion of relatively few responses for the two categories.

Model 3 in Table 3 gives the regression results for Eq. (2). Demand for all personal finance topics is regressed on each alternative measure of math ability (self-reported ability, highest level of math course completed, and the score from the numeracy quiz). The results using self-report math ability are shown in the table. None of the math ability measures is significant to demand for all personal finance topics. Further, the results from Eq. (1) are not sensitive to the substitution of math ability for patience in consumption, cost, and the initial stock of financial literacy except for gender. Gender in Eq. (2) is insignificant to the demand for all personal finance topics.

6.2. Demand for topics within personal finance education

Results from investigating demand for specific topics within personal finance are in Tables 4 through 7. Demand for learning about personal budgeting is regressed on the variables as defined in Eq. (1) and the results are shown in Model 1 in Table 4. The pseudo R^2 is 35%. Cost, perceived return, and financial independence are all significant with the expected signs (*p* values range from <0.0001 to 0.0002). Gender is also significant to interest in learning

Table 4 Demand for learning about personal budgeting while in college

	(1)		(2)		(3)	
	Estimate	p value	Estimate	p value	Estimate	p value
Intercept	−10.08	<0.0001	−10.29	<0.0001	−10.97	<0.0001
Intercept	−8.01	<0.0001	−8.33	<0.0001	−8.89	<0.0001
Intercept	−6.46	<0.0001	−6.84	<0.0001	−7.33	<0.0001
Intercept	−4.91	<0.0001	−5.32	<0.0001	−5.77	<0.0001
Intercept	−4.08	<0.0001	−4.49	<0.0001	−4.93	<0.0001
Intercept	−3.34	<0.0001	−3.71	<0.0001	−4.18	<0.0001
Income	0.04	0.7052	0.07	0.5171	0.04	0.6935
Patience	0.08	0.6250			0.05	0.7724
Cost	0.46	<0.0001			0.47	<0.0001
Stock	−0.22	0.2739			−0.26	0.2005
Return	1.11	<0.0001	1.19	<0.0001	1.10	<0.0001
Net	0.25	0.0002	0.20	0.0018	0.24	0.0003
Gender	0.46	0.0093	0.27	0.1141	0.51	0.0039
Math			0.22	0.0510	0.27	0.0201
Psuedo R^2		0.35		0.30		0.36

Note: The dependent variable is interest in learning about personal budgeting while in college measured on a 7-point scale (1 = strongly disagree, 7 = strongly agree). Model (1) is the estimation of Eq. (1). Model (2) is the estimation of Eq. (2). Model (3) contains estimates from Eq. (1) also including numerical ability. The results are maximum likelihood estimates with the highest value of the dependent variable (=7) as the reference. The intercepts reference the lower values for the dependent variable. The p values are for Wald χ^2 statistics.

about personal budgeting (p value = 0.0093), where females are relatively more interested than males. Income, patience in consumption, and the initial stock of financial literacy are not significant in Model 1. The alternate measures of income and the stock of financial literacy are all insignificant when included in Model 1 (untabulated). Model 2 displays the results from estimating Eq. (2). Self-reported math ability is positive and marginally significant as a summary measure for patience in consumption, cost, and the initial stock of financial literacy (p value = 0.0510). Perceived return remains highly significant but the statistical significance of gender is sensitive to the inclusion of self-reported math ability. The alternate measures of math ability are insignificant in Eq. (2). Model 3 adds self-reported math ability to Eq. (1). Cost, perceived return, financial independence, and gender remain highly significant as in Model 1, yet math ability has independent explanatory power.

Table 5 displays estimates for interest in learning about credit cards while in college. The results in Model 1 are from estimating Eq. (1). The pseudo R^2 is 21%. Cost, return, and gender are significant with females having relatively more interest in this topic (p values range from <0.0001 to 0.0012). Having nonstudent loan debt is positive and marginally significant to interest in learning about credit cards (p value = 0.0614). Income range, patience in consumption, and financial independence are insignificant. Income range is alternatively replaced with employment status and college level in Eq. (1) (not tabulated). College level is marginally significant to interest in learning about credit cards and employment status is not significant. We also replace nonstudent loan debt with prior financial education but this variable remains insignificant. In Model 2 college level approximates expected income for estimating the coefficients in Eq. (2). College level is significant as are

Table 5 Demand for learning about credit cards while in college

	(1)		(2)		(3)	
	Estimate	*p* value	Estimate	*p* value	Estimate	*p* value
Intercept	−7.53	<0.0001	−8.13	<0.0001	−7.93	<0.0001
Intercept	−5.76	<0.0001	−6.41	<0.0001	−6.14	<0.0001
Intercept	−4.57	<0.0001	−5.27	<0.0001	−4.95	<0.0001
Intercept	−2.98	<0.0001	−3.71	<0.0001	−3.34	<0.0001
Intercept	−2.49	<0.0001	−3.22	<0.0001	−2.85	<0.0001
Intercept	−1.25	0.0471	−1.94	0.0069	−1.60	0.0218
Income	−0.02	0.8778	0.20	0.0084	0.15	0.0605
Patience	0.12	0.4603			0.12	0.4789
Cost	0.38	<0.0001			0.37	<0.0001
Stock	0.37	0.0614			0.25	0.2127
Return	0.72	<0.0001	0.84	<0.0001	0.74	<0.0001
Net	−0.03	0.6666	−0.05	0.3924		
Gender	0.55	0.0012	0.40	0.0167	0.56	0.0011
Math			0.11	0.3034		
Has card					−0.30	0.4150
Pays card					−0.01	0.7914
Has x pays					0.07	0.2950
Psuedo R^2		0.21		0.17		0.22

Note: The dependent variable is interest in learning about credit cards while in college measured on a 7-point scale (1 = strongly disagree, 7 = strongly agree). Model (1) is the estimation of Eq. (1). Model (2) is the estimation of Eq. (2) with college level approximating expected income. Model (3) contains estimates from Eq. (1) with college level for income, has card as an indicator that the student has a credit card (=1), pays card as the percentage of the credit card bill paid by the student measured on a 5-point scale (1 = 0%, 5 = 100%), and has x pays as an interaction term for has credit card and pays credit card. The results are maximum likelihood estimates with the highest value of the dependent variable (=7) as the reference. The intercepts reference the lower values for the dependent variable. The *p* values are for Wald χ^2 statistics.

perceived return and gender (*p* values range from <0.0001 to 0.0167), but any measure of math ability is insignificant. In Model 3 we augment Eq. (1) with college level as the proxy for income, include indicators of having a credit card (=1), responsibility for paying a credit card bill (=1), and an interaction term that equals one if the student has and pays a credit card. None of these indicators is significant to interest in learning about credit cards while in college.

Table 6 shows results for estimating the demand for learning about student loans while in college. The pseudo R^2 from estimating Eq. (1) in Model 1 is 15%. Both income range and employment status are positive and significant (*p* values are 0.0001 and 0.0025, respectively), but college level is not significant when used as an alternate measure of income. Time cost is marginally significant (*p* value = 0.0678) and perceived return, financial independence and gender are highly significant (*p* values range from <0.0001 to 0.0006) with females relatively more interested in this topic. Having nonstudent loan debt and the alternate measure of prior financial education are insignificant to demand for learning about student loans. Because few students are employed full time, we collapse employment status into an indicator of working (=1) or not as a measure of income and estimate Eq. (2). The results are displayed in Model 2. The working indicator is positive and highly significant (*p* value < 0.0001) but reduces the significance of financial independence and gender. The alternate

Table 6 Demand for learning about student loans while in college

	(1)		(2)		(3)	
	Estimate	p value	Estimate	p value	Estimate	p value
Intercept	−5.68	<0.0001	−5.47	<0.0001	−7.86	<0.0001
Intercept	−4.50	<0.0001	−4.27	<0.0001	−6.45	<0.0001
Intercept	−3.69	<0.0001	−3.46	<0.0001	−5.43	<0.0001
Intercept	−2.69	<0.0001	−2.45	0.0002	−4.21	<0.0001
Intercept	−2.46	<0.0001	−2.23	0.0008	−3.95	<0.0001
Intercept	−1.27	0.0324	−1.04	0.1164	−2.64	<0.0001
Income	−0.30	0.0025	0.65	<0.0001	0.23	0.1928
Patience	0.06	0.6901			0.04	0.7905
Cost	0.13	0.0678			0.11	0.1126
Stock	0.31	0.1070			−0.48	0.0161
Return	0.54	<0.0001	0.58	<0.0001	0.67	<0.0001
Net	0.23	0.0002	0.15	0.0174	0.02	0.7268
Gender	0.57	0.0006	0.42	0.0112	0.41	0.0173
Math			−0.17	0.1244		
Loan					2.25	<0.0001
Psuedo R^2		0.15		0.16		0.37

Note: The dependent variable is interest in learning about student loans while in college measured on a 7-point scale (1 = strongly disagree, 7 = strongly agree). Model (1) is the estimation of Eq. (1). Model (2) is the estimation of Eq. (2) with working as the income variable, an indicator equal to 1 if the student is employed, 0 otherwise. Model (3) contains estimates from Eq. (1) with working as the income variable and loan as an indicator equal to 1 if the student has a student loan, 0 otherwise. The results are maximum likelihood estimates with the highest value of the dependent variable (=7) as the reference. The intercepts reference the lower values for the dependent variable. The p values are for Wald χ^2 statistics.

math ability measures are not significant. We retain the working indicator for income in Model 3 and add an indicator for having a student loan (=1). The student loan indicator is highly significant (p value < 0.0001) and dominates the significance of working and financial independence.

Results from estimating the demand for learning about other personal finance topics (leasing, retirement planning, etc.) are displayed in Table 7. The results from estimating Eq. (1) are in Model 1 with a pseudo R^2 of 36%. Cost, perceived return, and financial independence are positive and significant (p values range from <0.0001 to 0.0033). Patience in consumption is marginally significant (p value = 0.0275) with the predicted sign. Income, nonstudent loan debt as the stock variable, and gender are insignificant. In untabulated results, Eq. (1) is estimated with the alternative measures of income and prior financial education as a proxy for the initial stock of financial literacy. Prior financial education is positive and marginally significant indicating that students without prior financial education are marginally more interested in learning about other personal finance topics. In Model 2, self-reported math ability is positive and marginally significant when this variable replaces cost, patience in consumption, and the stock of financial literacy (p value = 0.0846). The other numeracy variables are insignificant. Model 3 is the reconfiguration of Eq. (1) with prior financial education approximating the stock variable and self-reported math ability as an additional variable. Self-reported math ability is marginally significant (p value = 0.0572)

Table 7 Demand for learning about other personal finance topics while in college

	(1)		(2)		(3)	
	Estimate	*p* value	Estimate	*p* value	Estimate	*p* value
Intercept	−9.86	<0.0001	−10.03	<0.0001	−10.43	<0.0001
Intercept	−7.98	<0.0001	−8.24	<0.0001	−8.52	<0.0001
Intercept	−6.86	<0.0001	−7.17	<0.0001	−7.40	<0.0001
Intercept	−5.26	<0.0001	−5.59	<0.0001	−5.79	<0.0001
Intercept	−4.53	<0.0001	−4.85	<0.0001	−5.06	<0.0001
Intercept	−3.53	<0.0001	−3.80	<0.0001	−4.07	<0.0001
Income	−0.10	0.3684	−0.04	0.6943	−0.06	0.5522
Patience	0.38	0.0275			0.34	0.0462
Cost	0.41	<0.0001			0.41	<0.0001
Stock	0.26	0.2058			0.42	0.0262
Return	1.20	<0.0001	1.30	<0.0001	1.19	<0.0001
Net	0.20	0.0033	0.17	0.0093	0.20	0.0031
Gender	0.04	0.8276	−0.10	0.5676	0.03	0.8451
Math			0.20	0.0846	0.22	0.0572
Psuedo R^2		0.36		0.31		0.37

Note: The dependent variable is interest in learning about other personal finance topics while in college measured on a 7-point scale (1 = strongly disagree, 7 = strongly agree). Model (1) is the estimation of Eq. (1). Model (2) is the estimation of Eq. (2). Model (3) contains estimates from Eq. (1) also including numerical ability and the initial stock of financial literacy (stock) as an indicator of prior financial education (0 = yes, 1 = no). The results are maximum likelihood estimates with the highest value of the dependent variable (=7) as the reference. The intercepts reference the lower values for the dependent variable. The *p* values are for Wald χ^2 statistics.

as is initial stock (*p* value = 0.0262), where the significance of patience in consumption, cost, return, financial independence, and gender is relatively unaffected.

Prior research indicates that business majors are relatively more knowledgeable about personal finance (e.g., Chen and Volpe, 1998). Regarding interest in personal finance education, Beierlein and Neverett (2013) find that business majors (as well as human ecology and social science majors) are relatively more likely to complete a personal finance course. To test if being a business student influences demand for personal finance education, we include an indicator variable for business majors in all of the regressions. However, this indicator is only marginally significant to interest in learning about student loans and is insignificant to all other dependent variables. We find that business students are relatively less interested in learning about student loans compared to nonbusiness majors.

7. Conclusion

This study employs the Jappelli and Padula (2013) model of investment in financial literacy to examine student interest in personal finance education while in college. Although we find some support for this model, our results suggest that students are not uniformly interested in every personal finance topic.

In our study, perceived return and time cost are key drivers of interest in personal finance education. Student interest in specific personal finance topics is associated with circum-

stances or characteristics. For example, female students who pay their living expenses are relatively more interested in learning about budgeting. Upper-level students with nonstudent loan debt are relatively more interested in learning about credit cards. Students with existing student loans are highly interested in learning more about these loans.

While a traditional personal finance course offers a broad base of knowledge, some students may not view all topics as relevant and other students may not have time for a 3-credit-hour course. Designing a financial education program as a menu of personal finance learning opportunities allows students to self-select interests and time commitments.

To provide students with control over their time commitment, the menu might include multiple education delivery options for each topic such as individual counseling, workshops, web resources and videos, reduced credit hour courses, and a traditional course. Individual counseling may appeal to students who prefer private instruction. Periodic workshops on specific topics may attract students who prefer brief, face-to-face, hands-on instruction. Workshops are also an opportunity to partner with the local business community. For students who prefer Internet delivery, the institution could offer a web page containing links to topic-focused articles, videos, and tools such as student loan calculators. Articles, videos, and tools provide instruction and application that may better accommodate student schedules. Reduced credit-hour courses that cover a related set of topics may appeal to specific students and may not impact tuition. Finally, a traditional course may appeal to students who are willing to commit larger amounts of time and wish to learn about a broader range of topics.

Increasing participation in personal finance education may also involve outreach to specific groups of students. As an example, we find that financial independence influences interest in learning about budgeting. An attention-grabbing message such as, "Supporting yourself while in school? Budgeting makes it easier to balance school and work!" may attract students with these characteristics. Including a link to a short video on budgeting in the message may stimulate interest in attending a workshop or visiting a web site containing budgeting resources (e.g., apps, articles, etc.).

Because personal finance education is voluntary for most college students, designing campus offerings around student characteristics and preferences may increase participation while in college. Future research may examine the effectiveness of this approach in increasing college student financial self-efficacy and literacy.

Note

1 We intentionally omit investing as a candidate topic. In the authors' prior experience with surveying students about interest in personal finance education, investing is the most popular choice. Our intention with the current survey is to understand interest in subjects that may benefit students during the college experience.

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