Student Loan Decision Making: Experience as an Anchor

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Abstract

The purpose of study is to examine the association between one's past borrowing experience and borrowing decisions in a hypothetical survey scenario. A total of 1928 responses from an online survey panel were analyzed, with a built-in anchoring question. Using the concept of anchoring bias as a reference point, survey participants were shown a hypothetical scenario regarding college attendance and asked two relevant questions: is it wise to attend college and how much student loans one should take out to attend college. Results indicated that the more one borrowed personally, the more one is likely to think a higher amount being borrowed by a hypothetical high-school graduate is prudent. This connection between experience and present advice can be described as a novel anchoring effect.

Keywords Student loans · Anchoring · Judgement and decision making · College attendance

Introduction

Anchoring effects have been a mainstay in lab experiments in economics and psychology since first theorized by Tversky and Kahneman (1974). Anchoring is a type of cognitive bias where people adjust future choices based on the initial reference point—the anchor. Anchoring effects happen when the subject uses a familiar reference point to judge the current task at hand or estimate choices.

Although lab results have been consistent in showing significant anchoring effects to certain types of valuation such as auctions (Hong et al., 2015), negotiations (Phillips & Menkhaus, 2010), and pricing of goods (Simonson & Drolet, 2004), there is still considerable discussion about how those effects translate to real world situations. The present study

examines anchoring in a real-life situation by prompting participants to recall their student loan experience or lack thereof before offering advice to a potential college attendee. We examine two questions regarding college attendance—is it wise to attend college? and how much student loans should one take out to attend college?—in association with the respondent's own student loan anchor.

A college education, like other types of schooling/training, has been characterized as an investment in human capital (Becker, 1962). As such, the decision to attend college would be based on the benefits and costs of obtaining a degree. One of the crucial benefits is the higher earning potential compared to high school graduates. When putting a price tag on obtaining a degree, college tuition and related expenses are the main drivers, in addition to foregone earnings during the schooling years and other indirect costs.

The dramatic increase in tuition costs in the last few decades has diminished the return on the human capital investment. Yet, recent income data showed that earnings for those with a college degree still outpaced earnings from those with only a high school diploma by roughly \$400 per week (Bureau of Labor Statistics, U.S., 2020). Based solely on earnings differences by education attainment, an investment in postsecondary education still yields a positive return at a low risk for most graduates; this is known to vary by major, career choices, and economic conditions over time.

With over half of young adults with college experiences taking on some debt to finance their education, student

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loans are the main source to afford college (U. S. Federal Reserve Board, 2017). According to the Federal Reserve (2017), student loans are by far the most common form of debt used to pay for college, held by 94% of those with their own education debt outstanding.

This study explored a possibility of an anchor effect in student loan borrowing decisions, one that is absent from current student loan literature utilizing behavioral economics framework. We used a unique online survey developed by a consortium of researchers from 18 land grant universities. The survey included a set of hypothetical scenarios combined with participants' personal information to explore the possible role of anchoring. This study also demonstrates a venue to assess concepts typically tested in lab experiments but in a survey setting.

Background

Student Loan Borrowing

The value of college education has been consistently evident in the statistics of income and education. In 2017, full-time workers with a bachelor's degree earned \$1173 per week, while those with a high school degree and no college education had weekly earnings of \$712 (Bureau of Labor Statistics, 2020). At the same time, the perceptions or beliefs about the economic value of education has led more Americans to borrow significantly for higher education (Newport & Busteed, 2013). According to a Federal Reserve report, in the US, there are 44 million individuals who hold student loan debt, amounting to more than 1.5 trillion dollars of total student loan debt (U.S. Federal Reserve Board, 2017).

The student loan borrowing decision has been identified as a two-step process: "should I borrow?" and "how much should I borrow?". Individual characteristics coupled with uncertainty regarding the return on this investment led to many students borrowing suboptimal amounts (Avery & Turner, 2012). Despite the difficulties in borrowing the right amount, student loan debt did not appear to be associated with lower levels of financial satisfaction (Robb et al., 2019) while its effects on life satisfaction were moderated by income (Tay et al., 2017). In addition to better earnings potential, compared their non-college educated peers, college graduates were more financially independent (Xiao et al., 2014), found their lives more meaningful (Nikolaev, 2018) and reported higher life satisfaction (Oreopoulos, 2007). The current study included questions on both steps of paying for college: should an individual borrow to attend college and, if so, how much should be borrowed.

Anchoring Effect

Since the 1980s, behavioral economics has been used repeatedly to aid researchers in understanding human economic decision making. In their seminal paper, "Judgment Under Uncertainty", Tversky and Kahneman (1974) proposed several heuristics, or rules of thumb, that are prevalent and persistent in human judgment and decision making. The anchoring-and-adjustment heuristic refers to the tendency for judgment or valuation of an object or a situation influenced by arbitrary and irrelevant information presented. Exposure to an arbitrary and exogenously provided numeric value serves as a reference point in subsequent judgment.

The prevalence of an anchoring effect in a multitude of human decision-making contexts has been evidenced by numerous studies. Ariely et al. (2003) showed that valuations of familiar market goods are strongly influenced by anchors, questioning the economic assumption of market valuation based on one's willingness to pay. Holst et al. (2015) noticed that previous bids affected subsequent bids in an auction experiment even when the odds of success remained static. The initial anchoring, it seems, quickly superseded more "rational" attributes such as how much the good is actually worth and the likelihood to obtain a good deal.

In the present study, survey participants drew from their own experience while making the hypothetical decision to recommend student loans and amount for future students. In this scenario, the anchoring was less arbitrary and potentially relevant to the task in hand. The amount of loans recommended was a form of willingness-to-pay (WTP) which has been shown to be influenced by realistic references (Sugden et al., 2013) but not affected by an exogenous anchoring point (Alevy et al., 2015).

Social Learning

Social Learning Theory (Bandura, 1977) has been widely adopted to explain individual behaviors shaped by modeling and observing others. A wealth of previous studies document financial socialization, or the process of learning financial norms, attitudes, and behaviors through norm-deriving agents, such as family (Churchill & Moschis, 1979; Danes, 1994; Gutter et al., 2010; Shim et al., 2009). Although originally developed to explain young learners' behavior, literature around financial socialization has expanded to adulthood. For example, Gutter et al. (2010) found that financial behaviors of college students were linked to the social learning opportunities they had in previous years, especially from parents, with respect to issues

like credit and savings. In the same vein, the current study incorporates parental education achievement in the analysis to test if this form of social learning is related to the decision to take student loans.

In a study on consumer satisfaction, Woodruff et al. (1983) suggested that one's prior experience with a brand or product would shape the norms and thus operate as a reference point. According to their conceptual model, consumer satisfaction was a result of perceived brand performance, which was driven by the consumer's prior experience with the product or brand. From this perspective, prior experience would not only shape performance norms/standards but also attitudes and expectations.

Expanding upon this mechanism of experience-based norms, this study tested the hypothesis that those with prior experiences with student loans would recognize the value of taking out the same type of loan, and subsequently they would expect others to take out the student loan. Furthermore, we predicted that the higher one's amount of student loans, the higher the student loan amount participants would have recommended to others. The main hypothesis guiding this study is that survey participants will judge the decision to take student loans based on an anchoring effect due to their personal experiences. We tested the following three hypotheses.

Hypothesis 1 Participants who had taken out student loans would be more likely to perceive the decision to take out student loans as wise than those without student loan.

Hypothesis 2 Participants with higher amounts of student loans would be more likely to perceive the decision to take out student loans as wise than those with lower amount of student loans.

Hypothesis 3 Participants who had taken out student loans would recommend higher amounts of student loans than those without student loans.

Hypothesis 4 Participants with higher amounts of student loans would recommend higher amounts of student loans than those with lower amount of student loans.

Methodology

Data

This study was an output of the NC-2172 multi-state research project, "Behavioral economics and financial decision-making and information management across the lifespan". Data were collected using an online survey panel in September 2014 after receiving the necessary IRB

approvals. The panel collection was conducted by Survey Sampling International, a firm with a strong reputation for panel studies. A total of 1928 participants between the ages of 18 and 64 were surveyed and paid a small financial incentive for their participation. Survey participants fell within three main categories of interest in this study: those without a college degree, those with a college degree and no student loans, and those with a college degree and student loan. For more details on the survey methodology and experimental design, see Cho et al. (2016).

Dependent Variables

Participants' recommendations about student loans were the focal point of this study. Survey participants were initially presented with a short scenario where the character was making choices about college attendance. In the survey scenario, the fictional character (male or female, randomly assigned) was about to graduate high school and had been accepted to the state university three hours away from their residence. Our fictional character was trying to decide between pursuing a career straight out of high school or taking out student loans to attend college.

Next, participants were asked the following two questions: "Do you think it is wise for this person to take student loans in order to pursue a college degree?" and "How much in total should this person take in student loans in order to pursue this degree?". The participants answered on scales that ranged from 1 (*Not Wise*) to 5 (*Very Wise*) for the first question and an ordered categorical scale for the loan amount question, consisting of 1 = \$0, 2 = \$1–\$9999, 3 = \$10,000–\$19,999, 4 = \$20,000–\$29,999, 5 = \$30,000–\$39,999, and 6 = \$40,000 or more. These two questions were then referred to as *Wise to Take Loans* and *Recommended Loan Amount* in the analysis, representing the dependent variables of interest.

Anchoring and Control Variables

Prior to the hypothetical scenario, we presented participants with several questions including our proposed anchor trigger. Participants were asked the original amount of their student loan with possible choices ranging from less than \$10,000 to over \$50,000. First, participants were asked how recently the loan was taken out with options ranging from this year to over 20 years ago, with 5-year increments in between. Next, participants were asked to report their current loan balance categorically using increments of \$10,000 ranging from zero to \$50,000 and over. Respondents' student loan experience—initial and current balance—were used as values to test for the anchor effect. The recency of the student loan disbursement was added to control for a potential time confound because recent

anchors have been found to have stronger effects on the considered outcome (Cen et al., 2013).

A series of survey questions were added to the analysis to take into consideration survey participants' preferences and experiences with student loans. To account for participants' college experience, a binary indicator of completion of college degree was included (Yes = 1, conditional upon having a student loan). To find a baseline for their preferences for a college education, the question "how important is a college degree?" was included with answers ranging from 1 (Not Important) to 5 (Very Important). Lastly, a survey item was included measuring how satisfied the participant was with their student loan amount with responses ranging from 1 (*very dissatisfied*) to 5 (*very satisfied*). Satisfaction with the loan choice would help reveal respondents' preferences for recommending student loans to others.

Several independent variables were added as controls based on previous literature. The demographic factors selected for this study included age group (18–24, 25–34, 35–44, or 45–64 years); gender (male or female); race (White or non-White); marital status (living with or without partner); children in house (having children or not); and household income. Further, controls for parental educational achievement used a dichotomous variable (1 = if father or mother are college graduates, 0 = if none) and for the cost of attending college by state at the time of survey availability were also incorporated in the analysis. The cost of college attendance was based on the in-state resident tuition to attend the flagship public university at the specific state during the time of survey collection. While this was not a precise indicator of true cost of postsecondary education at each state, it provided a proxy comparison as to where student loans might be more needed. It is expected that states with higher college costs would have led to higher loan amount recommendations regardless of respondent's individual preferences or experience.

Lastly, we extended this analysis by investigating not just the full sample of all survey participants but also three sub-groups of student loan holders. The three subgroups were divided into who took out the student loan and who is responsible to pay for it: took own loan, someone else took out loan, and took own loan and someone else took out loan. The creation of subgroups allowed for further exploration of variations in the anchoring effect based on who is the payor and who is beneficiary from the student loan. For example, a borrower who is responsible for paying the loan may perceive the loan experience more vividly than the counterpart, which in turn affect the perceived value of college education. We are interested if this is manifested in the recommendations in hypothetical scenarios.

Estimation Strategy

The analysis was primarily focused on exploring the relationship between participants' student loan experiences and their responses to the borrowing by hypothetical students. The two main variables of interest ("is it wise for the person in the scenario to borrow for their education?" and "what amount would be appropriate to borrow?") were defined using scales of increasing magnitude. Consequently, these variables were discrete ordered and were analyzed using Ordered Logistic Regression models reporting odds ratio. To better understand the characteristics of the survey respondents, descriptive statistics have been presented to compare those with and without a student loan, those with and without a college degree, and the four potential student loan payment choices included in the survey (no student loan, paying for own loan, paying for somebody else's loan, and paying for both own and somebody else's). Differences between and within groups were examined using paired *t*-tests and MANOVA.

Results

Descriptive Statistics

The summary statistics and *t*-tests between those with and without student loan experience are presented in Tables 1 and 2. Table 1 compared borrowers to non-borrowers. The Student Loan column (1) includes participants who have taken a student loan regardless of who pays for the loan. In column (2), we display the means to participants without student loan experience. The table shows that those who have taken out student loans were more likely to agree that taking out student loans is a wise choice and were also more likely to recommend a higher student loan amount. Regarding the participants' characteristics, those who have taken out a student loan were wealthier, valued the importance of a college degree more and lived in states with higher college costs. In addition, those whose parents graduated from college were more likely to have student loans than first-generation college students (those whose parents did not attend college). Since the table represents the full sample, participants who did not finish college and who had taken out a loan for somebody else were included.

Table 2 is limited to college graduates only. The pattern of results is qualitatively similar to the previous table in that the student loan experience is correlated with providing positive advice about taking a loan. College graduates with a student loan were more likely to recommend higher student loan amounts and considered taking out student loans a wiser decision than college graduates without a student loan. In both tables, we found that participants with at least

Table 1 Comparison, full sample by student loan experience

	Student loans		No student loans		p-value of t-test
	(1) Mean	SD	(2) Mean	SD	Unequal variances
Respondent characteristics					
Age					
18–24	0.18	0.39	0.15	0.36	0.115
25–34	0.28	0.45	0.39	0.49	0.000
35–44	0.25	0.43	0.27	0.44	0.226
45–64	0.29	0.46	0.19	0.39	0.000
Parental education (0–1)	0.59	0.80	0.53	0.79	0.104
College graduate (Yes = 1)	0.51	0.50	0.31	0.46	0.000
Household income					
\$0–\$29,999	0.21	0.41	0.31	0.46	0.000
\$30,000–\$69,999	0.42	0.49	0.38	0.49	0.057
Over \$70,000	0.36	0.48	0.32	0.47	0.028
Unemployed (Yes = 1)	0.23	0.42	0.22	0.41	0.454
Importance of a degree (1–7)	4.37	0.84	4.00	1.12	0.000
State Annual college costs					
\$1–\$19,999	0.34	0.47	0.45	0.50	0.000
\$20,000–\$39,999	0.42	0.49	0.36	0.48	0.007
Over \$40,000	0.24	0.43	0.19	0.39	0.010
Survey scenario					
Wise to take loans (1–7)	3.79	0.97	3.45	1.09	0.000
Loan amount recommended (1–7)	3.93	1.25	3.70	1.43	0.000
N	1133		795		1928

Source: Student Loan Survey

one parent with a college degree were more likely to have a student loan.

Summary data for the four student loan choices are shown on Table 3. A separate one-way MANOVA (results *HERE*) was performed to examine differences among the four loan choices. There was a statistically significant difference between the four student loan choices and the combined dependent variables (Roy's Largest Root = 0.028, $F(3, 1910) = 18.15$, $p = 0.000$) where those who had never taken student loans showed lower averages on the two loan questions than the other three groups of student loan holders.

Regressions

In the first multivariate analysis addressing Hypothesis 1, the results of the logistic regression are shown on Table 4 and odds ratios are reported. The dependent variable focused on perceived wisdom or prudence of taking out a student loan. Table 4 shows that those who placed greater value on college degrees and those who were more satisfied with their own student loans were more likely to advise that student loans are a wise decision. Column (1) includes the full sample of participants with or without a college education. In this

column, participants who have student loans have greater odds of saying the loans are wise to take out by 1.45, supporting an anchoring effect based on their own experience. Columns (2) to (4) contain only participants who have student loan experience with the possible payment schemes. We found further evidence that participants appeared to be using their own loan experience—satisfied with amount of loans taken—when recommending student loans as a wise choice to others.

Both the full sample and sub-samples showed the importance of a degree with the wisdom of taking out student loans. For the full sample, parental education, having dependents and age were all associated with a greater perception of it being wise to take a loan. Household income was a significant factor for all four where higher incomes were related to a more favorable view of taking out student loans.

Hypothesis 2 was partially confirmed by the results in Table 4. Among the three groups with student loan experience paid by themselves or others (columns 2 to 4), the amount of the initial student loan or the current balance left on the loan was not correlated with considering it wise to take out student loans when advising the survey

Table 2 Comparison, student loan experience by College Graduate participants only

	Student loans		No student loans		p-value of
	Mean	SD	Mean	SD	t-test of unequal variances
Respondent characteristics					
Age					
18–24	0.082	0.27	0.23	0.42	0.000
25–34	0.41	0.49	0.37	0.48	0.137
35–44	0.31	0.46	0.23	0.42	0.001
45–64	0.20	0.40	0.18	0.38	0.410
Parental education (0–1)	0.77	0.86	0.41	0.69	0.000
Household income					
\$0–\$29,999	0.12	0.33	0.31	0.46	0.000
\$30,000–\$69,999	0.35	0.48	0.50	0.50	0.000
Over \$70,000	0.53	0.50	0.19	0.39	0.000
Unemployed (Yes = 1)	3.51	1.55	3.19	1.47	0.001
Importance of a degree (1–7)	4.42	0.76	4.32	0.92	0.030
State College costs					
\$1–\$19,999	0.32	0.47	0.35	0.48	0.215
\$20,000–\$39,999	0.40	0.49	0.45	0.50	0.090
Over \$40,000	0.28	0.45	0.20	0.40	0.001
Survey scenario					
Wise to take loans (1–7)	3.93	0.95	3.66	0.98	0.000
Loan amount recommended (1–7)	4.12	1.29	3.74	1.19	0.000
N	575		558		1133

Source: Student Loan Survey

scenarios. This provided support that the value anchor of the student loan balance had no effect on the qualitative answer of it being wise to take loans. Upon reflection, this is not surprising as anchoring is historically associated with numerical values. While a reference point might be present for those with previous student loan experience based on their satisfaction, an anchoring effect was not found when actual figures were incorporated in the model.

Table 5 addresses Hypotheses 3 and 4 where the recommended loan amount was the dependent variable in all regressions. There was evidence of an anchoring relationship tied to the respondents' initial loan amount. The initial loan amount on the sub-samples of participants with student loan experience (columns 2–4) was a significant predictor supporting the hypothesis that the loan amount experience matters on the amount recommended. This is supportive of the idea of an anchor effect. Furthermore, participants who were fully responsible for their own loans (column 2) anchored their student loan amount recommendation on both their initial and current loan values, and their satisfaction with the loan taken. Together, we found evidence that participants were using the information from their own loan experiences to anchor their recommendations.

Conclusion and Implications

This research contributes to the existing literature by showing that survey participants are influenced by their own postsecondary experience (or lack thereof) to determine if and how much student loans young adults in the hypothetical scenario should take. Following previous research, we identified this finding as an anchoring effect as it is in line with how this bias is described: reliance on an initial reference point when making choices under uncertainty. Although many other factors exist related to the demand for a college education, our results also suggest that survey participants base their advice on their student loan experience, while seemingly indifferent to other characteristics of their college experience. These results are of particular importance at the current time where the value of a college education is being questioned by many and a great number of colleges is struggling financially due to the changes brought forth by COVID-19. The anchoring effect found here seems to point out that more transparent information about the actual cost and benefits of college (including the role of student loans) might help many realize the positive return of their investment. This is consistent with the findings by Evans and Boatman (2019)

Table 3 All student loan choices

	No student loan		Paid for own loan		Somebody else paid for It		Own and somebody else	
	Mean	sd	Mean	sd	Mean	sd	Mean	sd
Respondent characteristics								
Age								
18–24	0.18	0.39	0.14	0.35	0.23	0.42	0.19	0.40
25–34	0.28	0.45	0.39	0.49	0.35	0.48	0.41	0.49
35–44	0.25	0.43	0.27	0.44	0.29	0.45	0.28	0.45
45–64	0.29	0.46	0.20	0.40	0.14	0.34	0.12	0.33
Parental education (0–1)	0.53	0.79	0.56	0.79	0.76	0.88	0.71	0.80
College graduate (Yes = 1)	0.31	0.46	0.50	0.50	0.55	0.50	0.58	0.50
Household income								
\$0–\$29,999	0.34	0.31	0.23	0.42	0.18	0.39	0.13	0.34
\$30,000–\$69,999	0.50	0.38	0.42	0.49	0.38	0.49	0.49	0.50
Over \$70,000	0.49	0.31	0.35	0.48	0.44	0.50	0.37	0.49
Unemployed (Yes = 1)	0.23	0.42	0.21	0.41	0.22	0.41	0.22	0.41
Importance of a degree	4.00	1.12	4.40	0.82	4.29	0.89	4.12	0.94
State College costs								
\$1–\$19,999	0.44	0.50	0.35	0.48	0.29	0.45	0.28	0.45
\$20,000–\$39,999	0.36	0.48	0.42	0.49	0.43	0.50	0.43	0.50
Over \$40,000	0.19	0.39	0.23	0.42	0.29	0.45	0.29	0.46
Survey scenario								
Wise to take loans	3.45	1.09	3.80	0.99	3.84	0.86	3.67	0.94
Loan amount recommended	3.70	1.43	3.92	1.24	4.05	1.25	3.86	1.34
N	795		917		133		83	

Source: Student Loan Survey.

that information about loans reduces loan aversion and improves college enrollment among high school seniors.

The results of this study suggest what influences perception about how much one should borrow to finance education. The more one borrowed personally, the more one is likely to think a higher amount being borrowed by a hypothetical high school graduate is prudent. The anchoring bias seems to be tied to specific recommended loan values, with participants suggesting higher values for others based on their previous borrowing. However, the anchor does not influence whether one feels it was wise to borrow at all. This seems to match the idea that the anchor effect is associated with the numerical values being set and inquired about. The anchor effect, if persistent in this area, could shape how individuals view levels of student debt. In other words, what seems reasonable to borrow would vary by what one's own experience has been with borrowing. Thus, those who did not borrow at all may not have a frame of reference for this or may have a lower anchor. Those who went to more expensive schools may have a higher than appropriate view of what is reasonable to borrow. Both scenarios are in line with Avery and

Turner's (2012) findings on the optimal amount of student loan borrowing.

The current paper also explores different sources of the anchor bias and the timing of the anchor (i.e., is the primacy effect or recency effect more dominant). Our results suggest that the prompted question about how much one borrowed prior to the question about the appropriate amount may serve as an anchor. In judgement and decision-making literature, this is conceptualized as salience, or how vivid the memory is. How influential the anchor is on the subsequent decisions is well established (Dougal et al., 2015). Future studies should isolate this possibility and further test the role that anchoring may play in similar types of survey instruments. Any systematic cognitive bias may skew results of any such instruments. Policymakers and researchers should be aware of this potential bias and design instruments (surveys, experiments, and interventions) with items aimed to better uncover potential hidden anchors.

Findings are largely consistent with previous literature, especially literature on the basic anchoring effect (Wilson et al., 1996), where responses are subject to unintentional anchor. In our case, subjects we are not asked to judge the hypothetical person's loan amount based on their own

Table 4 Ordered logit, reporting odds ratio, wise to take student loans as DV

	(1) Full sample Wise to take loans for educa- tion Odds	(2) Took out own loan Wise to take loans for education Odds	(3) Someone else took loan Wise to take loans for education Odds	(4) Own loan and somebody else Wise to take loans for education Odds
Degree important	2.2176*** (0.098)	2.1894*** (0.167)	5.9332*** (1.521)	4.7328** (2.352)
Some College	0.7685* (0.084)	0.9212 (0.270)	0.4364 (0.380)	0.1163 (0.150)
College	0.8933 (0.112)	1.0470 (0.393)	0.3472 (0.309)	0.1396 (0.183)
White	1.2039* (0.093)	1.4761*** (0.166)	1.4045 (0.595)	0.3551* (0.184)
Unmarried man	0.9690 (0.132)	0.8424 (0.124)	0.7429 (0.626)	1.4241 (1.165)
Unmarried woman	1.0621 (0.147)	1.2831 (0.268)	0.3890 (0.426)	0.6261 (0.514)
Parental education (0–1)	1.1580* (0.072)	1.0695 (0.080)	0.9598 (0.155)	1.8396 (0.581)
Dependents	1.2573** (0.104)	1.1933 (0.151)	1.5541 (0.889)	0.3546 (0.222)
Unemployed	1.0897 (0.104)	1.2369 (0.161)	1.5339 (0.886)	1.1110 (0.793)
Cost of state attendance (ref: less than \$20,000)				
\$20,000–\$39,999	1.1058 (0.118)	1.0743 (0.117)	0.4914 (0.338)	0.9147 (0.596)
Over \$40,000	1.1278 (0.139)	0.8561 (0.137)	0.3025 (0.191)	0.4300 (0.462)
HH income (ref: less than \$30,000)				
\$30,000–\$69,999	1.3727** (0.162)	1.3275 (0.260)	3.0965 (2.150)	2.9442 (1.629)
\$70,000 and above	2.0343*** (0.253)	1.6451* (0.349)	4.7575* (3.271)	7.1789* (6.449)
Age (ref: 18–24)				
25–34	1.0488 (0.134)	0.7498 (0.130)	2.6515 (2.527)	1.4446 (1.624)
35–44	1.1439 (0.152)	0.7820 (0.149)	3.2018 (2.774)	2.5381 (2.761)
45–64	1.4581** (0.175)	1.1510 (0.287)	2.3130 (3.148)	0.5577 (0.712)
Have student loan (Yes = 1)	1.4532*** (0.134)			
Did not complete degree		1.0198 (0.160)	0.7945 (0.411)	1.3793 (0.734)
Initial loan amount		1.0704 (0.069)	1.2604 (0.234)	1.1402 (0.192)
Current loan balance		1.0536 (0.053)	1.0207 (0.124)	0.9789 (0.150)
Loan time		1.0153	1.2280	0.9763

Table 4 (continued)

	(1) Full sample Wise to take loans for educa- tion	(2) Took out own loan Wise to take loans for education	(3) Someone else took loan Wise to take loans for education	(4) Own loan and somebody else Wise to take loans for education
	Odds	Odds	Odds	Odds
(1 = this year, 6 = more than 20 years)		(0.044)	(0.305)	(0.214)
Satisfied with loan amount		1.8783*** (0.125)	1.5783** (0.255)	2.1156* (0.675)
Pseudo r ²	0.0864	0.1309	0.2973	0.2773
Log likelihood	– 2415.9303	– 1055.0267	– 114.1245	– 78.6491
N	1917	915	133	83

Significant variables of interest marked in bold

Exponentiated coefficients

Student Loan Survey

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

experience. However, own loan amount and other demographic questions were asked before the scenario was given, and subsequent questions on their perception of the prudence of loan decision, as well as amount acceptable followed. This bears significant real-life implications, where a society with a large student loan take-up rate and high average amount of student debt will subsequently carry similar behavioral norms to the general public. Perhaps, a policy limiting the student debt amount as a percentage of one's household income could serve as a meaningful anchor. For example, Abraham et al. (2020) recently offered how the design of income-driven student loan repayment plans increased the take-up rates. Similarly, a recent look at such regulatory effect in Israeli mortgage market has been documented in Mugerman and Ofir (2018), where imposed limits on payment-to-income rate and adjustable rate served as an anchor to the borrowers.

The present research helps explain one of barriers first generation college bound students might encounter. When no one in their immediate family has had the college and student loan experience, those young adults might be deprived of the necessary support to enroll in college and finance at least part of their own education. Their family and support circle might not recommend attending college by taking student loans despite the still strong return on investment of a college degree. In this study, participants with parents with a college education showed a more positive view of taking students loans and attending college. This is consistent with economic socialization (e.g., Gutter et al., 2010) and likely shows a learned value of education. Despite recent gains, first generation students are less likely to attend a 4-year college than the overall population and are more likely to stop their studies at the

associate degree level (Smith, 2015). Similar evidence is found in Boatman et al. (2017), where parental college experience was negatively associated with level of loan aversion among high school seniors and community college students. A lack of parental college experience can lead to a lower perceived benefit of college and thus making borrowing even less attractive, therefore, this may require greater outreach to the first-generation students to provide different options and views of the benefit education might provide.

This study used a cross-sectional, self-reported survey instrument with a hypothetical scenario to explore the anchoring effects as a possible determinant in student loan decisions. While our results have shown that past experiences served as an anchor in decision making, there may be other factors not included in the survey affecting the judgment of the student loan situation. For example, the recent media attention on high student debt may serve as unintentional bias in respondents' decision, as well as the extent of educational value that the subject had been instilled by family and friends. There exist a wide range of potential returns on educational investment based on major, career and state of the economy; however, our study design did not account for this. Future studies exploring a multitude of anchoring effects on student loan contexts such as choice of major (Kim et al., 2015), family attributes and source of funding (Quadlin, 2017), and the effect of macroeconomics changes (Long, 2014) would be valuable.

It is also worth noting that without having asked survey participants about their personal student loan experience in the first place, we would have failed to reveal an anchoring effect on student loan recommendations. While our results make no claim of causality as in typical lab experiments, the

Table 5 Ordered logit, reporting odds ratio, recommended loan amount as DV

	(1) Full sample Recommended loan amount	(2) Took out own loan Recommended loan amount	(3) Someone else took loan Recommended loan amount	(4) Own loan and somebody else Recommended loan amount
	Odds	Odds	Odds	Odds
Degree important	1.2976*** (0.067)	1.1264 (0.072)	1.3743 (0.365)	1.7049 (0.508)
Some College	0.8750 (0.112)	0.9157 (0.212)	0.6951 (0.407)	0.3304 (0.305)
College	1.0045 (0.115)	0.7526 (0.169)	0.2798* (0.171)	0.4316 (0.391)
White	1.3166*** (0.098)	1.3377* (0.177)	0.7933 (0.317)	1.8837 (1.170)
Unmarried man	1.0814 (0.117)	1.1915 (0.165)	0.8497 (0.607)	1.2197 (0.972)
Unmarried woman	1.1310 (0.140)	1.5700** (0.267)	1.8157 (1.414)	2.0394 (1.629)
Parental education (0–1)	1.0589 (0.069)	0.9845 (0.091)	1.2677 (0.259)	1.0170 (0.450)
Dependents	1.1474 (0.090)	1.0963 (0.147)	1.5350 (0.925)	2.1597 (1.336)
Unemployed	0.8839 (0.084)	0.8796 (0.138)	2.2018 (0.993)	0.5533 (0.353)
Cost of state attendance (ref: less than \$20,000)				
\$20,000–\$39,999	1.7506*** (0.162)	1.6553*** (0.213)	1.2845 (0.603)	1.7545 (1.312)
Over \$40,000	3.4472*** (0.496)	2.9940*** (0.603)	0.9454 (0.766)	2.3646 (1.680)
HH income (ref: less than \$30,000)				
\$30,000–\$69,999	1.4426** (0.166)	1.2965 (0.242)	7.0089** (4.398)	2.6685 (1.903)
\$70,000 and above	2.3508*** (0.267)	2.3733*** (0.519)	11.4235** (9.207)	3.1810 (3.095)
Age (ref: 18–24)				
25–34	1.4314* (0.228)	0.9915 (0.219)	1.1209 (0.951)	0.8798 (0.731)
35–44	1.4053 (0.251)	0.9575 (0.240)	1.0719 (1.005)	1.3980 (1.173)
45–64	1.2578 (0.187)	0.7867 (0.184)	0.5207 (0.568)	0.5825 (0.849)
Have student loan (Yes = 1)	1.1232 (0.105)			
Did not complete degree		1.0252 (0.129)	0.7304 (0.290)	1.0688 (0.821)
Initial loan amount		1.3039*** (0.068)	1.9103*** (0.295)	1.4791* (0.291)
Current loan balance		1.1844* (0.080)	1.0235 (0.111)	1.2709 (0.231)
Loan time		1.2030**	1.3285	1.5521

Table 5 (continued)

	(1) Full sample Recommended loan amount	(2) Took out own loan Recommended loan amount	(3) Someone else took loan Recommended loan amount	(4) Own loan and somebody else Recommended loan amount
	Odds	Odds	Odds	Odds
(1 = this year, 6 = more than 20 years)		(0.072)	(0.288)	(0.442)
Satisfied with loan amount		1.5879*** (0.093)	0.9220 (0.152)	1.4360 (0.362)
Pseudo r ²	0.0521	0.1026	0.1616	0.1905
Log likelihood	−2903.5592	−1265.3822	−174.2193	−106.6234
N	1914	914	133	83

Significant variables of interest marked in bold

Exponentiated coefficients

Student Loan Survey

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

choices included in the survey are based on real life experiences and scenarios. When designing future experiments, surveys and interventions, researchers need to better understand how an anchor can influence results and adjust their instruments accordingly.

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Declarations

Conflict of interest The authors declare that they have no conflicts of interest.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants involved in the study.

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