

# **The Impact of Regulated Loan Accessibility on Predatory Lending Susceptibility**

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## **Abstract**

In the United States, there are over 200,000 unresolved claims against predatory student lenders. Due to structural barriers in access to regulated loans, a majority of the complaints are filed by for-profit and community college students. Current policies and recommendations attribute predatory lending to individuals' financial literacy levels. However, this thesis argues that regarding financial illiteracy as the primary driver of predatory lending obfuscates the structural origins of the crisis. The impact of regulated loan accessibility on susceptibility to predatory lending has yet to be established. I devise an experiment to show that access to better loan options gives participants the necessary context to identify predatory loans, a type of savvy financial decision-making attributed to high financial literacy. In the experiment, the treatment group is presented with a regulated and a predatory loan, while the control group is assigned only a predatory loan. Participants rate the predatory loan on a 10-point scale and choose whether or not to recommend it to a student. I hypothesize that those presented with the context of the regulated loan rate the predatory loan lower and are less likely to recommend it to a student.

The main finding is that the treatment group has a 78.97% reduction in the odds of recommending the predatory loan compared to the control group. A one point increase in financial literacy score is associated with a 54.39% reduction in the odds of recommending the predatory loan. Both of these results are statistically significant at the 5% level. A series of more complex logit models including control variables provide evidence that treatment is associated with a larger reduction in relative risk than having high financial literacy. Using OLS regressions, no significant difference is found in the rating individuals give the predatory loan rating across treatment groups and financial literacy levels. The results suggest that structural changes to the predatory lending market, in addition to individual-based solutions, may help students avoid predatory loans and make better financial decisions. Thus, more attention should be paid to accessibility concerns of regulated loans, particularly for students with restricted access to regulated and federal loans.

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## **1. Introduction**

### *1.1. Context*

Students of low socioeconomic status are overrepresented at community and for-profit colleges, causing them to be disproportionately impacted by predatory student loans. To illustrate, community colleges often opt out of the Stafford Federal Loan Program to avoid complete discontinuation of federal funding (Wiederspan 2016; Wiederspan 2015; Dunlop 2013). Because tightly-regulated federal loans are often unavailable, low-income students and students of color become the central targets of predatory lenders (Boandies et al. 2018). Moreover, for-profit institutions push students to take out exploitative loans that they cannot afford with the promise of high earnings after graduation (Boandies et al. 2018). Instead of providing a path to economic opportunity, over 70% of all African American students borrowing loans to attend for-profit colleges default within ten years and end up doing worse in the labor market than they would with just a high school diploma (Scott-Clayton 2018). Predatory lending institutions prey on students of low socioeconomic status with the promise of expanding educational equity and future wealth but put them at significant risk of financial distress, default, and excessive debt levels.

Many policymakers embrace individual financial education as an effective solution to curb predatory lending, foreclosures, scams, debt burdens, and more (Willis 2008; Schlumpf 2021; Sole 2014; Bel & Eberlein 2015). A 2019 government report on financial education suggests that colleges should mandate financial literacy courses in order to encourage students to graduate on time and to safeguard them against defaulting on their student loans (U.S. Financial Literacy and Education Commission 2019). Systematizing financial literacy as the primary solution for predatory lending places undue blame on individuals and deliberately overlooks

structural factors contributing to the predatory lending crisis (Gross 2005). Although financial education gives individuals agency in their financial decisions, it seems to be over-emphasized as a solution to predatory lending.

## *1.2. Central Questions*

This thesis builds on arguments from economics, sociology, and related fields to demonstrate why regarding financial literacy as the primary driver of the predatory lending crisis is obfuscating the structural and systemic causes of the crisis. I explore questions including if consumers have access to regulated loans to compare predatory loans to, does that make them more likely to recognize that a loan is indeed predatory? and what are the relative effects of financial literacy and access to regulated loans on one's susceptibility to predatory lending? I focus on understanding the micro-level-behavioral effects produced by a policy that excludes many low-income, and disproportionately non-white, borrowers from regulated aid options. Not only does having fewer options make students worse off, but not being able to compare terms across loans eliminates context and pushes them towards accepting predatory loans. I aim to identify the significance of these structural features in shaping borrower choice when compared with how much of it could be attributed to financial literacy levels.

I investigate the theory that when consumers are given the context of what non-exploitative lending looks like via regulated loans, they are less susceptible to predatory lending. I also highlight Hamilton & Darity's (2017) argument regarding structural economics to say that predatory lending is structurally created and maintained and has nothing to do with individual choices. I hypothesize that financial literacy is less determinant of whether an individual recommends a predatory loan given a larger menu of loan options. Ultimately, people

make better financial decisions when presented with better financial choices – and that, in addition to financial literacy, should be proposed to inform better public policy on this issue.

### *1.3. Experimental Design Overview*

To test the theory that the lack of regulated loan accessibility is a crucial mechanism by which individuals fall victim to predatory lending, I run an experiment that assesses the predatory lending susceptibility of college students. I employ a within-experiment design to identify differences between treatment groups. All students answer five questions from Lusardi and Mitchell's financial literacy questionnaire used by the U.S. National Financial Capability Study. These questions proxy students' financial literacy levels (Lusardi & Mitchell 2011). Only the first three are used in the subsequent analysis, as is conventional in existing literature (West & Zwann 2020).

The experimental design, in brief, is as follows. Students are randomly assigned to one of two groups: the control group or the treatment group. The control group is presented with only a predatory loan, while the treatment group is presented with two loans: a predatory loan and a regulated one. The loans reflect what students on partial (~50%) financial aid need to borrow for four years of undergrad at Amherst College, using average private student loan interest rates. Students are told to imagine that they are a financial advisor to a first-generation college student seeking private loans to pay the remaining tuition not covered by financial aid. After being given time to review the details of the loan(s), students are asked to rate the quality of the loan and whether they would recommend that the student take the loan. The experiment is designed to test the relative effectiveness of financial literacy and access to regulated loans in influencing the savviness of consumers in financial decisions.

#### *1.4. Econometric Analysis*

I hypothesize that students who are given the context of a regulated loan are less likely to recommend a predatory loan. I also expect that financial literacy is less significant in determining this likelihood in the treatment group. I use both logit and probit models to assess the probability that a participant in either the treatment group or the control group recommends the predatory loan to the student in the scenario. The probability model includes additional variables found significant by previous literature. An interaction term between financial literacy and treatment is used in some models due to expectations that treated individuals with high financial literacy may be better able to recognize predatory loans. If the probability that a student recommends a predatory loan is significantly larger for the control group than the treatment group, it is likely that when participants are shown better options, then that gives them the context to identify predatory loans. The increase in the loan options menu is beneficial to the consumer, but I expect that it is the context of the regulated loan that helps individuals behave more sophisticatedly.

I also use ordinary least squares regressions for the score the participants gave the predatory loan on financial literacy, including similar parameters as the probit model. I aim to show that financial literacy has a less significant relationship in the treatment group than in the control group, thereby suggesting that having the context of regulated loans is an essential contributor to one's susceptibility to predatory lending. Individuals in the control group likely base their rating of the predatory loan on existing personal beliefs about quality and experience with loans, while individuals in the treatment group may rely more on comparison between the loan options they have been given in the experiment. To understand the role of financial literacy within the treatment group itself, I compare the difference in mean predatory loan ratings



between individuals with high financial literacy and low financial literacy. A statistically significant difference between predatory loan scores indicates that financial literacy is a likely predictor of predatory lending susceptibility.

### *1.5. Results and Conclusions*

A simple logit regression predicts that the treatment group has a 78.97% reduction in the odds of recommending the predatory loan compared to the control group. A one point increase in financial literacy score is associated with a 54.39% reduction in the odds of recommending the predatory loan. Both of these results are statistically significant at the 5% level. For robustness, a probit model was also used to estimate the effects of treatment and financial literacy on the likelihood of recommending the predatory loan. For this model, being in the treatment group decreases the z-score by 0.797, while having high financial literacy decreases the z-score by 0.543. Thus, for individuals with high financial literacy, the predicted probability that an individual in the treatment group recommends the predatory loan is 4.4%, while this probability for the control group is 18.2%.

The logit models predict that having high financial literacy decreases the likelihood that individuals recommend the predatory loan. The relative magnitude of the coefficients on treatment and financial literacy supports the broader thesis that financial literacy is less impactful than treatment in predicting the likelihood of recommendation. For control variables included in the model, high risk aversion predicts a decrease in the likelihood that an individual recommends the predatory loan while having high financial planning confidence, a quantitative major, and having student loans predict an increase. Out of these, only the coefficient on risk aversion is significant in any of the models. This could suggest that more risk-averse individuals are less likely to recommend the loan, but it is important to note that this may be the result of the

significant difference in risk aversion between the groups. This is presumably due to sample size limitations. In terms of demographic control variables, Asians are predicted to have a lower likelihood of recommendation than white respondents, and the other race/ethnicity groups are found to have higher likelihood of recommendation. In general, the model predicts a larger decrease in the likelihood of recommendation in the lower-income bins than higher-income bins.

Across financial literacy levels, a simple OLS regression model predicts a 1.5% decline in predatory loan rating from the treatment group to the control group, but this result lacks statistical significance. The coefficients on treatment are all negative, as expected, meaning that treatment is associated with a lower predicted rating. The model also predicts that financial literacy level decreases the rating individuals gave the predatory loan by approximately 0.6%. In terms of control variables, the model predicts that risk aversion, financial planning confidence, and having student loans are associated with predicted decreases in rating, while having a quantitative major is associated with an increase. For the demographic control variables, in general, higher-income bins and Hispanic/Latino individuals are predicted to have higher predatory loan ratings than white respondents while lower-income bins, African Americans, Asians, and having multiple races/ethnicities are predicted to rate the loan lower than the omitted category. All coefficients for controls are statistically insignificant.

The findings suggest that the context of the regulated loan likely decreases predatory lending susceptibility. Individual factors, including financial literacy, seem to have lower-magnitude effects on predatory lending susceptibility. As policymakers continue to address the predatory lending crisis, structural changes, such as expanding access to federal and regulated loans, should likely be implemented in addition to individual-level changes.

## *1.6. Paper Overview*

The remainder of the paper proceeds as follows. Section Two outlines the relevant literature on predatory lending, financial literacy, and context effects. Section Three discusses the motivation for the experimental design and specifies the features of the experiment designed to test the effect of regulated loan accessibility on predatory lending susceptibility, including a detailed description of the participants, experimental treatments and conditions, and empirical strategy. Section Four details the results of the experiment and empirical analysis; I provide an overview of the main findings across treatment groups for both the OLS and probit regression models. Section Five concludes, and Section Six includes relevant appendices.

## **2. Overview of Related Literature**

### *2.1. Student Debt Crisis, Loan Accessibility, and Targets of Predatory Lending*

The importance of a college education for economic mobility and its respective costs have increased exponentially throughout the last few decades (Jackson 2017; Marshall 2021). U.S. borrowers currently owe over \$1.7 trillion in student loans. These loans are often seen as "good debt" because college education is the "great equalizer" to economic opportunity and wealth (Student Borrower Protection Center Report 2021). Lending institutions have capitalized on this narrative by exploiting vulnerable borrowers with abusive loan servicing practices that disproportionately disadvantage Black, Latino, and low-income borrowers, who face systemic barriers to both taking out and repaying loans (Jackson 2017; Student Borrower Protection Center Report 2021). Despite promises of higher education, Goodman et al. (2017) provide evidence that student loans severely damage the financial future of low-income students and

students of color. Furthermore, Jackson (2017) cites evidence that excessive student debt negatively affects the economy by encouraging students to delay purchasing a house, car, or saving for retirement either because they cannot afford it or they desperately want to get out of debt. The high level of student debt, especially for those of lower socioeconomic status, is seen as an individual choice or shortcoming rather than a systemic institutional failure reflecting and perpetuating the persistent racial wealth gap.

Regulated loans are not equitably available to all students. Wiederspan (2015) finds that some community colleges opt out of the Stafford federal loan program rendering their students ineligible for affordable, tightly regulated loans. Many colleges choose to opt out of this program to avoid sanctions due to a high cohort default rate (CDR): the rate of default on student loans for students attending the college calculated by the Department of Education. If a college's CDR exceeds 30 percent for three consecutive years, the college is prohibited from offering any federal financial aid, including the Pell grant and other education grants. Students are also not guaranteed any other type of aid by the college to replace the amount they could have borrowed with federal loans (Wiederspan 2015). When community colleges elect to opt out of this program, students are forced to seek alternative loan options from private loan companies, including ill-regulated lenders.

Private lending institutions can capitalize on the gap created by community colleges that opt out of the federal loan program; however, several cases have proven that they intentionally exploit vulnerable borrowers. A recent suit against Navient, one of the largest private student loan servicers in the country (formerly Sallie Mae), "improperly charged struggling student loan borrowers with late fees that they did not have to pay — and deceived them into paying the late fees over and over again," (Minsky 2020). Navient also used deceptive fee structures to trick

low-income borrowers into intentionally paying significantly more than necessary. The Consumer Financial Protection Bureau sued Navient in 2017 for failing student loan borrowers "at every stage of repayment." Navient forced student loan borrowers into forbearance instead of legal income-based repayment plans (Minsky 2017).

Loan accessibility is also an issue for those who attend for-profit colleges. Bonadies et al. (2018) find that for-profit colleges target low-income students and students of color by disproportionately pushing them into unfavorable student loan agreements. For example, a recent suit against Ashford University, a for-profit college, revealed that they used "deceptive practices [that] left students with overwhelming debt, weak career prospects, valueless degrees, or no degree at all." The lenders intentionally misled low-income borrowers, many of whom were students of color, about financial aid availability to get them to take out student loans with abusive conditions to enroll. Moreover, they used illegal debt collection methods to extract more profit from borrowers (Minsky 2020; *The People of the State of California v. Ashford University* 2017). Cases such as *Britt v. Florida Career College* and *Colon v. Devos* (The Project on Predatory Student Lending) make it explicitly clear that for-profit colleges and some private lending institutions systematically target people of color and low-income individuals while engaging in illegal and deceptive practices (*Britt et al. v. International Education Corporation*; *Britt & Laurence v. International Education Corporation*). Ultimately, lending under conditions in which regulated loans are not equitably accessible to borrowers can be classified as predatory lending because the lenders actively harm and destroy the financial future of borrowers for profits.

## 2.2. *Defining & Regulating Predatory Lending*

Defining predatory lending can be tricky due to the constantly evolving nature of deceptive and abusive tactics. Carr & Kolluri (2001) characterize predatory loans as "excessively high interest rates or fees, and abusive or unnecessary provisions that do not benefit the borrower, including balloon payments or single premium credit life insurance, large prepayment penalties, and underwriting that ignores a borrower's repayment ability." Engel & McCoy (2002) define predatory lending as exploitative high-cost loans to naive borrowers. Agarwal et al. (2014) model predatory lending as a situation in which lenders have information about borrowers' future ability to repay loans and encourage loans with terms that borrowers cannot afford. Sarra & Wade (2020) define predatory lenders as those who engage in fraudulent or misleading conduct. These include charging excessively high interest rates, high-pressure sales tactics, unnecessarily harsh prepayment penalties, distorted loan structures, and other abusive fee structures. This thesis focuses on specific predatory practices encompassed by these definitions: unnecessary fees, high prepayment penalties, equity-stripping bankruptcy clauses, and excessively high interest rates. See Section 6.2 for the loans used in this experiment.

Several efforts have been made to create legislation to protect borrowers against predatory lending; however, with a changing political environment and constantly evolving predatory practices, such efforts have had minimal effects. After the Great Recession in 2008, Congress successfully passed the Dodd-Frank Wall Street Reform and Consumer Protection Act to regulate loan providers and improve the stability of the economy (Dodd-Frank Act). The legislation established the Consumer Financial Protection Bureau in order to prevent predatory lending, especially because predatory lending was a leading cause of the recession. A significant portion of the law was repealed in 2018 by Donald Trump with the Economic Growth,

Regulatory Relief, and Consumer Protection Act which significantly reduced regulations on banks and lenders, allowing them to provide riskier loans and investments to consumers. Since then, numerous predatory lending lawsuits have rendered the Dodd-Frank act ineffective (The Project on Predatory Student Lending). Some legislation inadvertently makes it easier for lenders to take advantage of financially vulnerable populations, including contract and consumer protection laws (Washington 2020). Many states have passed laws with interest rate caps to curb predatory lending but omit regulations for other exploitative lending practices (National Consumer Law Center 2021). In 2020, the Office of the Comptroller of the Currency put the True Lender Rule into effect, declaring that federally chartered banks do not need to abide by these interest rate caps (Odayappan 2022).

The problem with regulating predatory lending with legislation is that "any list of predatory practices is destined to be incomplete because bad actors are constantly developing new abusive practices, sometimes to evade government regulation" (HUD/Treasury Report). The report elaborates that while some predatory practices may be deemed abusive in all situations, others depend on the context, including the borrower's position and whether they were misled or deceived (HUD/Treasury Report). While predatory lending legislation is necessary, there are systemic problems that legislation cannot solve. As Sarra & Wade (2020) conclude, the lack of attention to dismantling the structures enabling predatory lending safeguards its persistence in the market.

### *2.3. Financial Literacy as a Solution to the Predatory Lending Crisis*

Financial literacy is often seen as a primary solution to the predatory lending crisis as it claims to help borrowers make more informed economic decisions. Lusardi & Mitchell (2011) define financial literacy as comprehending basic economic concepts and doing simple financial

calculations. A 2020 report by the U.S. Financial Literacy and Education Commission declares that financial literacy is "especially valuable for the most financially fragile Americans" and helps individuals effectively choose, manage, and repay student loans. The report underscores that financial literacy is vital to help consumers, specifically African American and Hispanic adults, avoid frauds/scams and report them. Numerous publications support the claim that financial literacy can prevent or solve the student debt crisis (Brownlee 2021; Jeon 2022; Bean et al. 2014). Through a review of the research on financial literacy programs, Todd (2002) argues that increasing financial education levels will make borrowers less susceptible to predatory lending. Moore (2004) finds that victims of predatory lending were less financially literate than the general population, and Xiao et al. (2014) find that there are positive associations between financial satisfaction, financial literacy, and positive financial decision-making. Financial education seems to be most effective at improving financial decision-making when it is customized and specific to the student's identity and delivered close to the time of the financial decision (Lusardi 2008; Lusardi and Mitchell 2007; Tisdell et al. 2013).

While financial education has been shown to improve financial decision-making behavior in areas such as savings behavior and satisfaction, Kaiser & Menkhoff (2017) note a diminished effect on the handling of debt. A meta-analysis of financial education studies by Miller et al. (2015) supports this argument, finding that financial education does not reduce loan defaults. Alsemgeest (2018) evaluates the pros and cons of financial education as the answer to the personal financial crisis and concludes that financial illiteracy should not be presented as the sole culprit of matters such as predatory lending. Furthermore, she suggests that specialist areas such as investments and retirement planning should be left to professionals and not individuals. Malhotra & Baag (2021) conclude that "mere financial knowledge is not sufficient to generate



financial behavior." Thus, focusing on financial literacy as the primary solution to predatory lending will likely not ameliorate predatory lending practices and inherently underemphasizes structural problems (Beeman et al. 2010). In this thesis, I build on the idea that institutional reform is necessary to combat predatory lending.

Financial education is focused on changing individuals, which ignores the larger structures enabling predatory lending to occur. Benton et al. (2007) stress that a significant portion of financial literacy education is voluntary. They find that individuals that choose to educate themselves are already more informed about financial matters and in a better financial state. Kaiser and Menkhoff (2017) conclude that low-income individuals "benefit significantly less from financial education" and are "are more difficult to educate in general" likely due to a lack of funding or understanding of how to educate effectively. Matthews (2020) suggests that "financial literacy may not have the same benefits across all demographics due to unequal pay and student debt outcomes." Thus, he indicates that focusing on general financial literacy and not the very institutions enabling predatory lending may not be an equitable solution. For instance, in an investigation of U.S. mortgage data, Beeman et al. (2010) reveal compelling evidence of racism in the predatory lending market. They find that African Americans and low-income communities are significantly more likely to receive predatory loans than European Americans. Consequently, financial literacy seems to be an inequitable and inefficient solution to the predatory lending crisis, particularly for economically and systemically disadvantaged populations.

#### *2.4. Predatory Lending is a Systemic Problem: Investigating the Role of Context Effects with Regulated Loans*

People of color are frequently exploited with predatory loans even if they qualify for higher-quality, better-regulated loans (Hardin & Towns 2019). Through investigations of Wells Fargo mortgages, Rugh et al. (2015) and Marte (2017) found that Black and Latino loan recipients paid more and had higher default and foreclosure rates than white borrowers with similar financial profiles due to intentional exploitation by predatory lenders. Research at the Federal Reserve revealed that people of color are more likely to be offered predatory loans than white applicants, even after controlling for credit and individual characteristics (Servon 2017).

Financial illiteracy is cited as a reason why people of color are often "victims of predatory lending... [and end up in] bankruptcy or foreclosure" and ascribes most blame to individuals for being irrational or uneducated (Zucchi 2022). Hamilton and Darity (2017) detail the structural barriers faced by people of color and argue that the historically entrenched racial wealth gap, not financial literacy, is to blame for financial crises, including the predatory lending crisis. They emphasize that the source of inequality is not behavioral. Instead, they suggest that the intergenerational racial wealth gap is structurally created and has nothing to do with individual choices. Therefore, structural economics arguments imply that financial literacy may be ineffective at ameliorating institutionalized problems within the lending market, such as redlining, differential access to loans, and unequal education funding (Hardin & Towns 2017). Predatory student loans reproduce the economic inequality they stem from, and financial literacy seems to be a relatively ineffective antidote (Seamster & Charron-Chénier 2017).

Research on context effects such as the asymmetric dominance effect and the compromise effect demonstrate that alternatives in the choice set have substantial effects on the

options chosen (Huber et al. 1982; Simonson & Tversky 1992). Community and for-profit college students face structural barriers restricting their access to federally-regulated loans and are intentionally targeted by predatory lenders. The relationship between loan accessibility and predatory lending has yet to be examined. I conduct an experiment examining the role of context effects in predatory lending susceptibility.

I hypothesize that given the context of a regulated loan, individuals are less likely to recommend a predatory loan to a student than individuals only presented with a predatory loan. The treatment group is presented with both a predatory and a regulated loan, while the control group is only presented with a predatory loan. I compare the rating individuals in both groups gave the predatory loan, the likelihood that the individuals would recommend the loan to a first-generation college student, and examine the role of financial literacy in these measures of predatory lending susceptibility. I hypothesize that regardless of financial literacy levels, the context the regulated loan gives the treatment group makes them less likely to recommend the predatory loan than the control group. The control group, who does not have the context of the regulated loan, must rely on only the predatory loan and personal knowledge to determine if the loan is worth recommending. I expect financial literacy to have less of an effect on predatory lending susceptibility than the treatment.

The experimental design gives insight into how structural factors (via a larger choice set of loans) shape borrower choice compared to how much predatory lending susceptibility could be attributed to financial illiteracy. Having fewer options makes borrowers worse off, and the context effects that regulated loans provide push consumers to accept predatory loans. I expect that the context the regulated loan provides consumers is what induces more savvy financial decision-making, something currently attributed to higher financial literacy. Policies

and attention should likely focus more on giving all individuals the opportunity to take out regulated loans such as federal student loans.

### **3. Experimental Methods**

#### *3.1. Motivation*

In this experiment, I use within-treatment variation to explore the micro-level behavioral effects of giving participants a predatory loan or both a predatory loan and a regulated loan. The experiment aims to show the difference between the treatment and control groups' predatory lending susceptibility and, ultimately, the role of context effects vis-à-vis the regulated loan in determining predatory lending susceptibility. The within-treatment variation aids in understanding the underlying role of access to regulated loans while maintaining simplicity for replication. I take inspiration from various studies that use this empirical strategy, such as Fox & Tversky's 1995 study on ambiguity aversion where participants stated their willingness to pay for certain and uncertain bets. The experimenters had half of the participants rate both the certain and uncertain bet and the other half rate either the certain or uncertain bet alone. They then compared mean willingness to pay for the bets across groups. Tversky & Kahneman's 1992 study on prospect theory uses within-experiment variation methods with two-outcome prospects. Some prospects are gains, some are losses, and some are a mix of the two. Within-treatment variation is also used by Niederle et al. (2008) to examine how competitive entry is affected by affirmative action, and Kahneman et al. (1990) to capture willingness to pay for mugs to test the endowment effect and Coase Theorem.

### 3.2. *Overview*

To test the significance of context effects and access to regulated loans to predatory lending susceptibility, I ran an experiment with 91 Amherst College undergraduate students. The study took approximately 15 minutes, and I offered several proctored sessions for students to attend. Each participant was compensated with a \$5 payment immediately upon completion of the study, and various snacks (chips, popcorn, cookies, candy, etc.) were available for students to take. The participants received printed copies of the loan(s). The surveys were created with Qualtrics and accessed through a QR code or link provided to participants on a cover sheet on the loan(s). Section 6.2 contains copies of the loan documents given to participants, and Section 6.3 contains screenshots of the survey interface and questions.

### 3.3. *Participants*

Participation was limited to current Amherst College undergraduate students. Participants were sourced via a Google Form sent through social media and email announcements only accessible by students with a college email address. All participants selected one of several dates and times to attend an in-person, proctored session. An email was sent to all respondents a day before the study confirming the location and time. All students were also required to be at least 18 years of age. There were no other disqualifying factors.

College students are often used for empirical research and have been the population of interest in prior economics theses at Amherst College (Kiernan 2021). In this case, college students are the subjects of interest because they are the primary recipients of student loans and will likely take out more high-cost loans after graduating. Existing predatory lending research focuses on mortgages, payday loans, and populations of older adults. With rising tuition costs

and record-level student borrowing, studying predatory lending at the student level may give insight into the mechanisms of susceptibility, which could also extend to other loan forms borrowers take out later in life. While only 28% of Amherst College students take out loans, for each graduating class, this debt collectively totals approximately \$3 million. Amherst College students are unlikely to have experience with predatory loans since the institution offers several forms of federal aid and scholarships. A financial literacy proxy is used to estimate financial literacy levels so an effect on predatory lending susceptibility can be estimated and compared to the treatment. Overall, I expect Amherst College students to be relatively susceptible to predatory lending due to inexperience with unregulated loan options.

#### *3.4. Treatment*

Participants are assigned to one of two treatment groups: 1) the control group, which receives only a predatory loan, or 2) the treatment group, which receives both a predatory and a regulated loan. Participants are presented with a physical packet containing the loans with a cover sheet including the QR code/link to the survey and spaces to write an email (for the debriefing sheet) and Venmo or mailbox (for payment). The covers separate identifying information from responses and intentionally hide the loan(s) from view, as participants are instructed not to look at the loan(s) before being told to do so.

The Consumer Finance Protection Bureau's H-23 Private Education Loan template is used as a model for both loans. (See Section 6.2 for the loan documents used in the experiment.) The loans reflect what students on partial (~50%) financial aid need to borrow for four years of undergrad at Amherst College. The regulated loan emulates current private student loan market conditions, such as interest rates and fees/charges, and follows all regulations set forth by the government, such as interest rate caps and transparency regarding fees and payment conditions.

The regulated loan precedes the predatory loan in the packet the treatment group received to provide context for when participants view the predatory loan. The predatory loan uses the same interest rate as the regulated loan but reflects many exploitative practices outlined in the literature. Specifically, the predatory loan, compared to the regulated loan, has high cancellation (\$1000), late charge (25%), and returned check fees (\$250+); other ambiguous fees (\$5000); illegal interest rate manipulation (at the discretion of lender); equity-stripping bankruptcy clauses (seizing assets as collateral); and a high prepayment penalty (25% of remaining interest). See Section 6.2 for more detailed loan terms.

I limit my experiment to two treatment groups to maximize the number of participants in each group and the power of the econometric analysis. However, more extensive and diverse samples would be more ideal in general. The simplicity of the experiment allows for a more precise identification of how the context of the regulated loan affects predatory lending susceptibility and is easily replicable.

### *3.5. Experiment*

Before each experiment session, participants are given a brief overview of how the study will proceed but are not told that they will be reviewing predatory loans. Next, loan packets are randomly distributed to the students. Students are instructed not to open the packet until directed but to fill out their information on the cover sheet. Once all participants have written in their contact and payment information, they are instructed to scan the QR code or enter the link to the first part of the survey.

The first survey includes a series of basic demographic questions, along with questions regarding one's risk aversion, financial planning confidence, if one has a quantitative major, and whether one has student loans. The last five questions are Lusardi and Mitchell's financial

literacy questionnaire (Lusardi & Mitchell 2011). These include mathematical, financial, and economic-based questions. The questionnaire is well-established in the literature, and the first three questions have been used to proxy financial literacy levels in several applications, including the U.S. National Financial Capability Study. Participants are given approximately seven minutes to complete this portion of the experiment.

Next, a prompt is read to students: "Imagine you are a financial advisor to a first-generation college student. The student received financial aid from the college but will need to take out private student loans in order to pay the remaining tuition balance. You will have three minutes to review the loan documents carefully." After the three minutes is up, participants are asked to complete the second part of the survey and told they could use the loans to help them. The first four questions ask about specific terms contained within the loan(s) to encourage the students to read the terms of the loan carefully. Participants are then asked to give a 1-10 quality score to the loans (1 representing low quality and 10 representing high quality) and whether they would recommend each loan to the student in the scenario. Participants in the treatment group can choose to recommend neither, one, or both of the loans since the questions for each loan are independent. Participants are given five minutes to complete the second half of the survey and instructed to close their packet when finished. The packets are then collected from students, and students are all sent \$5 via their preferred payment option. Sections 6.2 and 6.3 include the loan documents and screen captures from the survey questions.

### *3.6. Empirical Strategy*

The empirical strategy outlined below aims to answer the following questions: 1) Is the control group more likely than the treatment group to recommend the predatory loan, and does the probability of recommendation change if individuals have a high level of financial literacy?



and 2) What are the relative effects of treatment and financial literacy score on the mean rating given to the predatory loan?

To answer the first question, I report results from logit regression estimates to determine the effects of treatment on the probability of recommending the predatory loan. The following base equation is used:

$$Pr(RecPL_i = 1) = 1/(1 + e^{-z})$$

$$\text{where } z_i = \beta_0 + \beta_1 Treat_i + \beta_2 FlScore_i + \beta_3 X_i + \varepsilon_i$$

where  $i$  represents an individual respondent.  $RecPL_i$ , the outcome variable, is a binary indicator of whether or not an individual recommends the predatory loan. The variable  $Treat_i$  is a binary indicator of whether an individual was in the treatment group, and  $FlScore_i$  is a continuous variable of the score individuals received on the first three questions of the financial literacy proxy (ranges from 0 to 3). The vector of control variables,  $X_i$  includes binary indicator variables for non-male, high financial planning confidence, quantitative major, and whether or not the participant has student loans; and categorical variables for household income and race/ethnicity. I also include an interaction term between treatment and financial literacy in selected models.

The logit estimation described above allows for the significance of the treatment effect and financial literacy to be determined through post-estimation testing. The findings would support my hypothesis that the treatment is associated with a decrease in the probability of recommending the predatory loan if the coefficient on the treatment effect,  $\beta_1$ , is negative and statistically significant. In accordance with the broader thesis, my hypothesis is that financial literacy level has a relatively small impact in determining the score individuals gave the

predatory loan would be supported if the coefficient on financial literacy score,  $\beta_2$ , is small in magnitude and statistically insignificant. I also expect coefficients on other control variables to be smaller in magnitude than the treatment coefficient in support of the broader thesis and findings in the literature that stresses the importance of structural factors over individual factors (Hamilton & Darity 2017, Beeman et al. 2010).

To answer the second question, the following base OLS regression model is used:

$$RatePL_i = \beta_0 + \beta_1 Treat_i + \beta_2 FlScore_i + \beta_3 X_i + \varepsilon_i$$

where  $i$  represents an individual respondent.  $RatePL_i$ , the outcome variable, is a categorical variable representing the score individuals gave the predatory loan. The remaining predictor variables are identical to those in the logit model. I hypothesize that the treatment predicts a decrease in the loan rating. The findings would support this with a negative, statistically significant  $\beta_1$  coefficient. I also hypothesize that financial literacy holds less predictive ability than treatment, which would be supported if  $\beta_2 < \beta_1$ . Similar to the logit model, I expect the control variables to be relatively insignificant predictors of loan rating.

In terms of predatory lending susceptibility in aggregate, I expect coefficients on the control variables in both the logit and OLS models to be in the same direction. Risk aversion, financial planning confidence, quantitative majors, and having loans are hypothesized to have negative but insignificant coefficients. Based on the findings of previous literature regarding financial decision-making, I expect non-males, lower-income, and non-white individuals to be somewhat more susceptible to predatory lending than males, higher-income, and white

individuals (Odayappan 2022, Beeman et al. 2010, Washington 2020, Bonadies et al. 2018).

Ultimately, I aim to discover the relative impacts of individual characteristics, financial literacy, and the treatment effect as predictors of predatory lending susceptibility.

## **4. Results and Discussion**

### *4.1. Summary Statistics*

Summary statistics for the participants in the experiment are presented in Table 1. A total of 91 participants attempted and completed the experiment; no observations needed to be dropped. There were 39 participants in the treatment group and 52 in the control group. This difference may be due to participant or survey errors such as failure to submit the survey after completion, closing the browser window before completion, or failure to complete the study in its entirety. These behaviors may decrease the sample size in either group but seem to have a disproportionate impact on the sample size in the treatment group. The mean rating of the predatory loan for the control group is 3.019 (s.e. (0.215)), and the mean rating of the predatory loan for the treatment group is 2.974 (s.e. (0.209)). The mean rating of the regulated loan in the treatment group is 5.718 (s.e. (1.959)). A simple t-test for the difference in the treatment group's mean ratings of the regular and predatory loans allows for the rejection of the null hypothesis that the mean ratings are equal.

The average participant from the sample is more non-male and wealthier than the average college student in the United States. The gender composition of the sample is 62.6% non-male (female, non-binary, or self-described) and 37.4% male. The income composition of the sample is 14% with less than \$30,000, 14% between \$30,000 and \$59,999, 19% between \$60,000 and \$89,999, and 53% with more than \$90,000. The race/ethnicity composition of the sample is 45%

white, 7% African American/Black, 31% Asian, 4% Hispanic/Latino, and 13% multiple races/ethnicities/self-described. The average class year is roughly a sophomore. The average participant is approximately 20 years old. The average participant in the experiment is relatively risk-neutral, confident in making financial decisions and paying off loans, and has at least one quantitative major. Approximately 13% of participants have student loans, which is slightly less than the Amherst College student population as a whole.

Column (3) of Table 1 shows results for pairwise t-tests of the summary statistics. There is a statistically significant difference in the average likelihood of recommending the predatory loan: the control group has a higher predicted likelihood of recommending the loan than the treatment group, as hypothesized. There is also a significant difference in the level of risk aversion between the two groups, with the control group having higher levels of risk aversion. This is likely random and an implication of having a small sample size. A t-test between the rating given to the predatory loan and the rating given to the regulated loan within the treatment group points to a highly statistically significant difference in ratings across loan types, as expected ((mean regulated score)-(mean predatory score)=2.745,  $\alpha < 0.01$ ). A t-test comparing the likelihood of recommending the regulated loan to the predatory loan points to a highly statistically significant difference in the likelihood of recommendation by type of loan, as expected ((mean regulated recommendation loan likelihood)-(mean predatory loan recommendation likelihood)=0.538,  $\alpha < 0.01$ ).

Table 1: Summary Statistics Across Treatment Groups

	Control (Predatory Loan Only)	Treatment (Regulated and Predatory Loan)	T-Test For Difference in Means
	(1) Mean/SE	(2) Mean/SE	(3) (Control) - (Treatment)
N	52	39	91
<i>Demographic Variables</i>			
Age	19.731 [0.170]	20.256 [0.358]	-0.526
Non-Male	0.654 [0.067]	0.590 [0.080]	0.064
Non-White	1.500 [0.070]	0.549 [0.079]	0.115
Household Income	3.192 [0.148]	2.974 [0.189]	0.218
<i>Additional Characteristics</i>			
Risk Aversion	0.615 [0.068]	0.385 [0.079]	0.231**
Financial Planning Confidence	0.577 [0.069]	0.590 [0.080]	-0.012
Quantitative Majors	0.538 [0.070]	0.538 [0.081]	0.000
Has Student Loans	0.096 [0.041]	0.179 [0.054]	-0.083
<i>Financial Literacy</i>			
Financial Literacy Score	2.500 [0.118]	2.462 [0.112]	0.038
<i>Predatory Lending Susceptibility</i>			
Average Rating of Predatory Loan	3.019 [0.148]	2.974 [0.209]	0.045
Average Likelihood of Recommending Predatory Loan	0.250 [0.029]	0.077 [0.043]	0.173**

Note: This table reports mean values for selected variables across the treatment and control group in the experiment. Pairwise t-test values are in Column (3). Household income is categorical; 1 represents income under \$30,000, 2 represents \$30,000-\$59,999, 3 represents \$60,000-\$89,999, 4 represents \$90,000+. Risk Aversion is represented as a binary indicator; 0 represents low risk aversion (score below 5), 1 represents high risk aversion (score of 5 or above). Financial planning confidence is a self-reported binary measure of low (0) or high (1) confidence in one's ability to make financial decisions and pay off loans. Has student loans is a self-reported binary measure of whether a student does not have (0) or has (1) student loans. Financial literacy score is a continuous variable ranging from 0 to 3 depending on the number of questions each individual answered correctly. Average rating of predatory loan is a categorical variable; 1 represents low quality, and 10 represents high quality. Average likelihood of recommending predatory loan is a binary variable, with 0 representing not recommending the loan and 1 representing recommending the loan.

\*\*\*  $p < .01$ , \*\*  $p < .05$ , \*  $p < .1$

## 4.2. *Main Results*

### 4.2.1. *Logit Regression Model Results*

I estimate logit regressions to confirm the main analysis on the role of regulated loan accessibility on predatory lending susceptibility. As hypothesized, treatment has a large, statistically significant effect on the predicted likelihood of recommending the predatory loan. The dependent variable is the RecPL dummy, taking the value 1 if a participant recommended the predatory loan and 0 if they did not recommend it. Financial literacy is used as a continuous variable, having values from 0-3 based on participants' scores on the first three questions. Questions 4 and 5 were omitted due to lack of use in existing literature (West & Zwann 2020). Robust standard errors are in brackets. The corresponding results are presented in Table 2.

The logit regression analysis confirms the main findings that the treatment decreases the probability of recommending the predatory loan. In Model (1), the base model with variables for treatment and financial literacy score, the treatment indicator variable, taking a value of 1 if an individual was in the treatment group, is statistically significant at 5% level. Thus, this coefficient can be interpreted as the treatment group having a 78.97% reduction in the odds of recommending the predatory loan than the control group. The coefficient on financial literacy implies that a one point increase in financial literacy score is associated with a 54.39% reduction in the odds of recommending the predatory loan. While both coefficients are statistically significant at the 5% level, treatment decreases the likelihood of recommendation by 24.6 percentage points more. Model (2) adds a dummy variable to control risk aversion, which is statistically different between groups. The coefficients on treatment, financial literacy, and risk aversion are negative and statistically significant at the 5% level and can be interpreted using the equations modeled above as 86.7%, 54.4%, and 78.7% reductions in the odds of recommending

Table 2: Logit Regression Models - The Effect of Treatment and Financial Literacy Score on Likelihood of Predatory Loan Recommendation

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	RecPL	RecPL	RecPL	RecPL	RecPL	RecPL	RecPL
<i>VARIABLES</i>							
Treat	-1.559**	-2.014***	-2.284***	-2.406***	-2.416***	-2.501***	-0.303
	[0.641]	[0.650]	[0.746]	[0.792]	[0.753]	[0.798]	[1.830]
Financial Literacy Score	-.758**	-.785**	-.745*	-.9**	-.964**	-.975**	-0.292
	[0.382]	[0.349]	[0.400]	[0.412]	[0.392]	[0.410]	[0.568]
<i>Control Variables</i>							
Risk Aversion		-1.547**	-1.997**	-2.08***	-2.058***	-2.174***	-1.776**
		[-0.662]	[-0.779]	[-0.787]	[-0.773]	[-0.804]	[-0.773]
Income Bins							
2			-1.769	-1.877	-2.001	-1.949	-1.485
			[1.302]	[1.247]	[1.332]	[1.308]	[1.256]
3			-1.476	-1.305	-1.144	-1.440	-1.429
			[0.963]	[0.960]	[1.003]	[1.069]	[0.949]
4			-0.276	-0.214	-0.073	-0.114	-0.468
			[0.853]	[0.828]	[0.854]	[0.854]	[0.953]
Race/Ethnicity							
African American/Black			0.384	0.202	0.292	0.421	0.547
			[1.052]	[1.069]	[1.150]	[1.185]	[1.011]
Asian			-0.175	-0.091	-0.182	-0.176	-0.204
			[0.932]	[0.928]	[0.922]	[0.880]	[0.928]
Hispanic/Latino			0.569	0.774	0.814	0.666	0.720
			[1.204]	[1.247]	[1.257]	[1.203]	[1.300]
Multiple Races/Ethnicities			0.147	0.182	0.316	0.399	0.147
			[0.926]	[0.909]	[0.927]	[0.961]	[0.959]
Gender							
Non-Male			0.963	0.842	1.074	1.055	0.947
			[1.060]	[1.006]	[1.131]	[1.166]	[1.013]
Financial Planning							
Confidence				0.501	0.412	0.371	
				[0.791]	[0.747]	[0.788]	
Quantitative Major					0.671	0.585	
					[0.862]	[0.890]	
Have Student Loans						0.909	
						[1.054]	
<i>Interaction Term</i>							
Treat*Financial Literacy							
Score							-0.930
							[0.745]
Constant	0.737	1.616*	1.672	1.821	1.399	1.507	0.551
	[0.958]	[0.946]	[1.611]	[1.541]	[1.736]	[1.690]	[1.855]
Observations	91	91	91	91	91	91	91
Pseudo R2	0.113	0.186	0.242	0.247	0.255	0.263	0.256

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*Note: This table shows the results of regression estimations. The outcome variable is a binary indicator of whether or not an individual recommends the predatory loan. Robust standard errors are included in brackets. Financial literacy score is a continuous variable ranging from 0 to 3 depending on the number of questions each individual answered correctly. Risk aversion is a binary indicator; 0 represents low risk aversion (score below 5), 1 represents high risk aversion (score of 5 or above). Financial planning confidence, quantitative major, and having student loans are binary indicators; 0 represents having low confidence, no quantitative major, and no student loans; and 1 represents high confidence, a quantitative major, and having student loans. Each regression coefficient associated with a predictor variable can be interpreted as the expected change in log odds of having the outcome per unit change in the independent variable.*

*\*\*\*  $p < .01$ , \*\*  $p < .05$ , \*  $p < .1$*

the predatory loan, respectively. The coefficient on treatment is associated with the largest decline in odds of recommending the predatory loan, followed by risk aversion and then treatment. Model (3) adds in demographic control variables for income and race. The coefficients on treatment, financial literacy, and risk aversion remain negative and statistically significant at the 5% level. They represent decreases in odds of recommending the predatory loan by 89.8%, 52.5%, and 86.4%, respectively. Note that these percentage declines have increased both for treatment and risk aversion but decreased for financial literacy from Model (2). Across Models (4)-(6), the magnitudes of the percentage decrease in odds for treatment, financial literacy, and risk aversion all increase still with treatment associated with the greatest decrease in odds, followed by risk aversion and then financial literacy. As expected, all categories of income and race have statistically insignificant coefficients. The coefficients on income are all negative and decrease in magnitude as income level increases. So, higher levels of income are associated with lesser relative declines in odds of recommending the predatory loan than the omitted category. For race/ethnicity, the coefficient for Asians is negative or associated with decreases in odds of recommending the predatory loan than is belonging to the omitted category, while all others are positive or associated with increases in odds of recommending the predatory loan.

Models (4)-(6) add control variables for financial planning confidence, quantitative major, and having student loans, in order of magnitude of correlation with the dependent variable. The treatment and financial literacy coefficients are negative or correspond to decreases



in odds of recommending the predatory loan and are statistically significant at the 1% level. Risk aversion remains negative and statistically significant at the 5% level. Coefficients on all other control variables are statistically insignificant, as expected. While treatment and financial literacy are statistically significant, the coefficient on treatment is over double the magnitude of the coefficient on financial literacy in these models. Model (7) extends Model (1) through an interaction term for treatment and financial literacy. The coefficient on the interaction term is negative and statistically significant at the 10% level. The coefficient on treatment alone is positive and statistically insignificant, and the coefficient on financial literacy is negative and statistically insignificant. Appendix Table 1 incorporates this interaction term in Models (2) - (6).

#### *4.2.2. Ordinary Least Squares Regression Model Results*

I estimate OLS regressions to test the hypothesis that treatment is associated with a predicted decrease in predatory loan rating. The dependent variable is the continuous variable RatePL, taking values from 1 to 10, 1 meaning low quality and 10 meaning high quality. Financial literacy is used as a continuous variable, with specifications identical to the logit model. Robust standard errors are reported in brackets. Negative coefficients represent predicted decreases in predatory loan ratings, while positive coefficients represent predicted increases. The corresponding results are presented in Table 3.

The OLS regression analysis confirms the main findings that the treatment predicts a decrease in predatory loan rating. Although the coefficients on treatment in Models (1) - (6) are statistically insignificant, they are all negative and predict greater changes in recommendation likelihood than the coefficient on financial literacy. Model (1) is the base model with treatment and financial literacy score variables. Both coefficients are negative, implying that individuals in the treatment group and individuals with high financial literacy are predicted to rate the

Table 3: OLS Regression Models - The Effect of Treatment and Financial Literacy on Predatory Loan Rating

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	RatePL	RatePL	RatePL	RatePL	RatePL	RatePL	RatePL
<i>VARIABLES</i>							
Treat	-0.046 [0.304]	-0.112 [0.321]	-0.110 [0.308]	-0.090 [0.307]	-0.064 [0.305]	-0.049 [0.306]	0.637 [1.096]
Financial Literacy Score	-0.020 [0.185]	-0.019 [0.182]	-0.092 [0.259]	0.006 [0.273]	-0.037 [0.275]	-0.039 [0.278]	0.071 [0.410]
<i>Control Variables</i>							
Risk Aversion		-0.289 [0.325]	-0.388 [0.350]	-0.411 [0.343]	-0.361 [0.343]	-0.355 [0.347]	-0.366 [0.363]
Income Bins							
2			-0.306 [0.669]	-0.338 [0.691]	-0.400 [0.691]	-0.399 [0.692]	-0.264 [0.659]
3			0.668 [0.603]	0.555 [0.606]	0.643 [0.613]	0.687 [0.656]	0.622 [0.623]
4			0.345 [0.499]	0.320 [0.505]	0.361 [0.504]	0.365 [0.506]	0.311 [0.500]
Race/Ethnicity							
African American/Black			-0.195 [0.816]	-0.132 [0.830]	-0.076 [0.818]	-0.074 [0.826]	-0.126 [0.821]
Asian			-0.329 [0.353]	-0.402 [0.346]	-0.490 [0.350]	-0.492 [0.352]	-0.313 [0.357]
Hispanic/Latino			0.174 [0.724]	-0.012 [0.672]	0.108 [0.771]	0.119 [0.776]	0.228 [0.741]
Multiple Races/Ethnicities			-0.111 [0.480]	-0.167 [0.460]	-0.140 [0.436]	-0.152 [0.446]	-0.149 [0.474]
Gender							
Non-Male			-0.379 [0.375]	-0.354 [0.380]	-0.231 [0.378]	-0.228 [0.382]	-0.376 [0.378]
Financial Planning Confidence				-0.420 [0.316]	-0.445 [0.312]	-0.437 [0.317]	
Quantitative Major					0.528 [0.322]	0.546 [0.330]	
Have Student Loans						-0.132 [0.482]	
<i>Interaction Term</i>							
Treat*Financial Literacy Score							-0.297 -[0.428]
Constant	3.069*** [0.535]	3.245*** [0.597]	3.572*** [0.792]	3.634*** [0.809]	3.34*** [0.810]	3.329*** [0.814]	3.161*** [1.136]
Observations	91	91	91	91	91	91	91
Pseudo R2	0	0.01	0.077	0.093	0.119	0.119	0.083

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*Note: This table shows the results of regression estimations. The outcome variable is the rating given to the predatory loan (1-10). Robust standard errors are included in brackets. Financial literacy score is a continuous variable ranging from 0 to 3 depending on the number of questions each individual answered correctly. Risk aversion is a binary indicator; 0 represents low risk aversion (score below 5), 1 represents high risk aversion (score of 5 or above). Financial planning confidence, quantitative major, and having student loans are binary indicators; 0 represents having low confidence, no quantitative major, and no student loans; and 1 represents high confidence, a quantitative major, and having student loans. Each regression coefficient associated with a predictor variable can be interpreted as the expected change in the outcome per unit change in the independent variable.*

*\*\*\*  $p < .01$ , \*\*  $p < .05$ , \*  $p < .1$*

predatory loan 0.046 and 0.020 points lower, respectively. The coefficient on treatment is over double the magnitude of the coefficient on financial literacy, pointing to the greater importance of treatment than financial literacy in predicting rating. Model (2) adds a dummy variable to control for risk aversion, and the coefficients on treatment, financial literacy, and risk aversion are all statistically insignificant and negative, predicting respectively 0.122, 0.019, and 0.289 point associated decreases in predatory loan rating. Notably, the coefficient on risk aversion has the largest magnitude, followed by treatment and then financial literacy. Model (3) adds in demographic control variables for income and race. The treatment, financial literacy, and risk aversion coefficients remain negative and statistically insignificant. All coefficients on income levels and race/ethnicity are statistically insignificant. Contrary to expectations, the coefficients on income are all positive except for the lowest bin, which has a negative coefficient. This implies that lower income bins are predicted by the model to be associated with lower predatory loan ratings while higher income bins are associated with higher ratings. For race/ethnicity, those identifying as Hispanic/Latino rate the loan as more positive than white respondents, while all other ethnicities rate the loan more negatively.

Models (4)-(6) add control variables for financial planning confidence, quantitative major, and having student loans, in the same order as the logit models above. The coefficients on treatment remain negative and statistically insignificant. The positive coefficient on financial literacy in Model (4) implies that higher financial literacy is associated with higher predicted

predatory loan ratings. The coefficient on risk aversion remains negative but still insignificant. Coefficients on all other control variables are statistically insignificant, as expected. Financial planning confidence has negative coefficients in these models, implying that higher confidence is associated with lower predicted ratings. Contrary to expectations, the coefficient on quantitative major is positive in Models (5) and (6), implying that the model predicts individuals with quantitative majors to rate the predatory loan higher than non-quantitative majors. As expected, the coefficient on having student loans is negative, implying that having student loans is associated with lower ratings. Model (7) extends Model (1) through an interaction term for treatment and financial literacy. The interaction term has a negative but statistically insignificant coefficient, meaning treated individuals with high financial literacy are predicted to rate the loan 0.297 points less than individuals not in this group. The coefficient on treatment alone is positive and statistically insignificant, and the coefficient on financial literacy is positive and statistically insignificant. Appendix Table 2 incorporates this interaction term in Models (2) - (6).

#### *4.3. Discussion*

Table 4 shows the evaluated odds of recommending the predatory loan by group predicted by the logit regression Model (1) in Table 2. Both the coefficient on treatment and financial literacy are significant at the 5% level in this model. Directly from the coefficient estimates in Model (1), the results suggest that a one point increase in financial literacy score decreases the odds of recommending the predatory loan by approximately 53%, and being in the treatment group decreases these odds by approximately 79%. Having low financial literacy (a score of 0, 1, or 2), on average, increases the odds of recommending the predatory loan by 17.6% in the control group and decreases these odds by 75.3% in the treatment group. Having high financial literacy decreases the odds of recommending the predatory loan by 78.5% in the control

group and by 95.5% in the treatment group. From this analysis, it seems that there is a greater percentage decrease in odds from the control group to the treatment group than from low financial literacy to high financial literacy. This result supports the broader thesis that treatment has a greater effect on predatory lending susceptibility than financial literacy. Although there were sample size limitations, the effect size was large enough to determine significance.

Table 4: Percent Change in Odds of Recommending Predatory Loan by Financial Literacy and Treatment

	Control Group	Treatment Group
Low Financial Literacy (Average of Scores of 0-2)	17.6%	-75.3%
High Financial Literacy (Score of 3)	-78.5%	-95.5%

*Note: This table shows the percentage change in odds associated with a particular financial literacy level and treatment group. Financial literacy score is broken up by low and high according to the average score across treatment groups and all participants. Percentages represent percentage change in odds. These percentages are derived from Model (1) in Table 2.*

The finding that all other control variables, with the notable exception of risk aversion, are statistically insignificant in the logit models in Table 2 and in the OLS models in Table 3 is consistent with the broader thesis that structural factors, more so than individual factors, impact predatory lending susceptibility. The finding that risk aversion is a statistically significant predictor of the likelihood of predatory loan recommendation could suggest that individuals are more cautious with choosing whether or not to recommend loans at higher levels of risk aversion. Since individuals were situated as the financial advisor to a first-generation student, the context of the prompt may have also amplified this result.

The lack of statistical significance for the treatment effect for predatory loan rating in the OLS models may be due to individual-specific schemas, personal experiences, and perceptions of quality. The difference in the rating of the predatory loan is in the hypothesized direction but is very small in magnitude. Table 5 shows predicted predatory loan ratings for each treatment and financial literacy level score using Model (1) in Table 3. An individual in the control group with a financial literacy score of 0 is predicted to rate the predatory loan a 3.069, while an

individual with the same financial literacy score in the treatment group is predicted to rate the loan 3.023, a 1.52% decrease. This corresponds to a 1.55% decrease in rating from the control group to the treatment group for a financial literacy score of 3. In the control group, the model predicts a 1.31% decline in predatory loan rating from low financial literacy (averaging ratings for scores of 0-2) to high financial literacy (score of 3) and a corresponding 1.55% decline in rating in the treatment group. Although the findings are statistically insignificant, the magnitudes and direction are as hypothesized. Consistent with the broader thesis, the treatment seems to have a larger effect on predatory loan rating than financial literacy.

Table 5: Predicted Predatory Loan Rating by Financial Literacy Score and Treatment

Financial Literacy Score	Control Group	Treatment Group
0	3.069	3.023
1	3.049	3.003
2	3.029	3.003
3	3.009	2.963

*Note: This table shows the estimated score an individual of a particular financial literacy level and treatment group would give to the predatory loan. Scores range from 1 to 10 with 1 representing low quality and 10 representing high quality. Results are derived from Model (1) in Table 3.*

An important caveat to the findings of the OLS model is that individuals were intentionally not instructed what makes a loan a high-quality loan to see if they could determine it themselves. However, this likely limited the ability to compare ratings across participants and treatment groups. The rating individuals gave may have also been based on the specific experimental context and individuals' perception of the scenario. The lack of statistical significance is also a product of the small sample size. Ultimately, the findings suggest that a regulated loan's context may significantly change an individual's ability to make financial decisions regarding loans. Although there were sample size constraints, the results show a strong significant relationship between the treatment in predicting predatory lending susceptibility, particularly for the likelihood of recommending the loan.

## **5. Conclusion**

This paper is the first study to examine the context effects of regulated loans on predatory lending susceptibility, expanding on existing literature about the role of financial literacy on predatory lending susceptibility and stratification economics. I find evidence that having access to regulated loans provides individuals with the necessary context to identify predatory loans, a skill previously attributed to having high financial literacy. This is an important change to our understanding of the role of financial literacy both in the predatory lending crisis and in broader economic markets. The findings suggest that changing the structure of the predatory lending market may have a greater impact on decreasing predatory lending susceptibility than focusing on individual-based solutions such as financial literacy. Regarding financial literacy as the primary driver of the predatory lending crisis seems to be an obfuscation of its structural causes. In order to comprehensively address predatory lending, both individual and structural solutions should likely be addressed.

These findings have important implications for policymakers and federal loan programs. The lack of accessibility to regulated and federal loans, specifically among for-profit and community college students, is a systemic problem that has likely triggered the disproportionately high rates of debt, defaults, and complaints of predatory lending among this population (Baker & Doyle 2017). This is an important discovery as students of color and of low income are often intentionally targeted and unaware of the financial consequences associated with many private student loans. Given the findings, policymakers may want to focus more on structural changes to the predatory lending crisis, such as expanding access to federal loans, in addition to financial literacy.

While a strong relationship is found between regulated loan accessibility and predatory lending susceptibility, a more in-depth study is needed. First, this experiment was conducted with only Amherst College students, which is not representative of all students who take out student loans. Thus, replicating this experiment with a larger sample size of community college students, for-profit college students, and public college students is of interest. Second, it is important to note that this study specifically used student loans. Predatory lending is common not just among student loans but also among mortgages and payday loans. Varying the type of loan and target population is necessary to understand if this finding applies to the broader spectrum of predatory lending practices. Third, the experiment only features two group variations. Having more than two groups, possibly a group with two predatory loans and a regulated loan or two regulated loans and a predatory loan may change the experiment results. Fourth, a more comprehensive evaluation of financial literacy may be more predictive of individuals' actual financial literacy levels. While using the simple proxy is ideal for my experimental context, future studies may want to more thoroughly test an individual's ability to actually make financial decisions versus just answering multiple-choice questions. Additionally, other structural solutions to predatory lending may also be incorporated into the experiment.

Students of color and low-income students are disproportionately affected by predatory lending, entrenching them in cycles of debt and default. While financial literacy is an essential step in helping individuals gain agency in their ability to make financial decisions, it is not an encompassing solution to the predatory lending crisis. As we continue to address the predatory lending crisis, it is necessary to understand the implications of broader systems and structures enabling individuals to be unfairly targeted and exploited.



## 6. Appendix

### 6.1. Tables and Figures

Appendix Table 1: Logit Regression Model Results with Interaction Term - The Effect of Treatment and Financial Literacy Score on Likelihood of Predatory Loan Recommendation

	(1) RecPL	(2) RecPL	(3) RecPL	(4) RecPL	(5) RecPL	(6) RecPL
<i>VARIABLES</i>						
Treat	0.930 [1.709]	0.208 [1.787]	-0.303 [1.830]	-0.492 [1.737]	-0.464 [1.765]	-0.398 [1.812]
Financial Literacy Score	-0.302 -[0.449]	-0.352 -[0.467]	-0.292 -[0.568]	-0.436 -[0.515]	-0.498 -[0.498]	-0.477 -[0.520]
<i>Control Variables</i>						
Risk Aversion		-1.438** [0.634]	-1.776** [0.773]	-1.84** [0.771]	-1.82** [0.765]	-1.942** [0.780]
Income Bins						
2			-1.485 [1.256]	-1.564 [1.209]	-1.665 [1.310]	-1.587 [1.285]
3			-1.429 [0.949]	-1.284 [0.953]	-1.106 [1.006]	-1.450 [1.069]
4			-0.468 [0.953]	-0.407 [0.916]	-0.247 [0.940]	-0.314 [0.961]
Race/Ethnicity						
African American/Black			0.547 [1.011]	0.393 [1.019]	0.502 [1.111]	0.612 [1.131]
Asian			-0.204 [0.928]	-0.131 [0.934]	-0.240 [0.936]	-0.262 [0.893]
Hispanic/Latino			0.720 [1.300]	0.856 [1.348]	0.880 [1.344]	0.737 [1.280]
Multiple Races/Ethnicities			0.147 [0.959]	0.172 [0.937]	0.284 [0.958]	0.351 [0.992]
Gender						
Non-Male			0.947 [1.013]	0.843 [0.984]	1.084 [1.109]	1.010 [1.131]
Financial Planning Confidence				0.411 [0.758]	0.321 [0.719]	0.297 [0.766]
Quantitative Major					0.683 [0.853]	0.577 [0.891]
Have Student Loans						1.030 [1.039]
<i>Interaction Term</i>						

Treat*Financial Literacy Score	-1.314*	-1.130	-0.930	-0.885	-0.897	-0.974
	[0.748]	[0.743]	[0.745]	[0.706]	[0.710]	[0.746]
Constant	-0.354	0.532	0.551	0.708	0.260	0.351
	[1.144]	[1.228]	[1.855]	[1.757]	[1.930]	[1.841]
Observations	91	91	91	91	91	91
Pseudo R2	0.148	0.211	0.256	0.259	0.268	0.278

*Note: This table shows the results of regression estimations. The outcome variable is a binary indicator of whether or not an individual recommends the predatory loan. Robust standard errors are included in brackets. Financial literacy score is a continuous variable ranging from 0 to 3 depending on the number of questions each individual answered correctly. Risk aversion is a binary indicator; 0 represents low risk aversion (score below 5), 1 represents high risk aversion (score of 5 or above). Financial planning confidence, quantitative major, and having student loans are binary indicators; 0 represents having low confidence, no quantitative major, and no student loans; and 1 represents high confidence, a quantitative major, and having student loans. Each regression coefficient associated with a predictor variable can be interpreted as the expected change in log odds of having the outcome per unit change in the independent variable.*

*\*\*\* p<.01, \*\* p<.05, \* p<.1*

Appendix Table 2: OLS Regression Model Results with Interaction Term - The Effect of Treatment and Financial Literacy Score on Predatory Loan Rating

	(1) RatePL	(2) RatePL	(3) RatePL	(4) RatePL	(5) RatePL	(6) RatePL
<i>VARIABLES</i>						
Treat	1.086	1.018	0.637	0.552	0.659	0.673
	[0.890]	[0.903]	[1.096]	[1.111]	[1.141]	[1.150]
Financial Literacy Score	0.220	0.220	0.071	0.142	0.115	0.112
	[0.293]	[0.293]	[0.410]	[0.412]	[0.411]	[0.418]
<i>Control Variables</i>						
Risk Aversion		-0.288	-0.366	-0.391	-0.337	-0.331
		[0.327]	[0.363]	[0.357]	[0.361]	[0.365]
Income Bins						
2			-0.264	-0.300	-0.359	-0.358
			[0.659]	[0.682]	[0.680]	[0.681]
3			0.622	0.521	0.607	0.650
			[0.623]	[0.624]	[0.628]	[0.670]
4			0.311	0.291	0.330	0.334

		[0.500]	[0.507]	[0.502]	[0.505]	
Race/Ethnicity						
African American/Black		-0.126	-0.075	-0.011	-0.009	
		[0.821]	[0.832]	[0.817]	[0.824]	
Asian		-0.313	-0.386	-0.473	-0.475	
		[0.357]	[0.351]	[0.353]	[0.356]	
Hispanic/Latino		0.228	0.043	0.172	0.184	
		[0.741]	[0.697]	[0.791]	[0.797]	
Multiple Races/Ethnicities		-0.149	-0.197	-0.173	-0.185	
		[0.474]	[0.457]	[0.430]	[0.439]	
Gender						
Non-Male		-0.376	-0.353	-0.226	-0.223	
		[0.378]	[0.384]	[0.380]	[0.383]	
Financial Planning						
Confidence			-0.401	-0.424	-0.417	
			[0.325]	[0.321]	[0.325]	
Quantitative Major				0.539	.557*	
				[0.327]	[0.334]	
Have Student Loans					-0.130	
					[0.484]	
<i>Interaction Term</i>						
Treat*Financial Literacy						
Score	-0.456	-0.455	-0.297	-0.256	-0.288	-0.287
	[0.347]	[0.346]	[0.428]	[0.438]	[0.444]	[0.449]
Constant	2.469***	2.647***	3.161***	3.278***	2.933**	2.923**
	[0.790]	[0.862]	[1.136]	[1.152]	[1.202]	[1.215]
Observations	91	91	91	91	91	91
Pseudo R2	0.015	0.024	0.083	0.097	0.124	0.124

*Note: This table shows the results of regression estimations. The outcome variable is the rating given to the predatory loan (1-10). Robust standard errors are included in brackets. Financial literacy score is a continuous variable ranging from 0 to 3 depending on the number of questions each individual answered correctly. Risk aversion is a binary indicator; 0 represents low risk aversion (score below 5), 1 represents high risk aversion (score of 5 or above). Financial planning confidence, quantitative major, and having student loans are binary indicators; 0 represents having low confidence, no quantitative major, and no student loans; and 1 represents high confidence, a quantitative major, and having student loans. Each regression coefficient associated with a predictor variable can be interpreted as the expected change in the outcome per unit change in the independent variable.*

*\*\*\* p<.01, \*\* p<.05, \* p<.1*

6.2. Loan Documents

Loan Document 1

REGULATED LOAN

**BORROWER:**  
Jones Jones  
16 Barrett Hill Dr.  
Amherst, MA 01002  
(413) 555 - 5555

**CREDITOR:**  
ABC Bank  
123 First Street  
Anytown, MA 00001  
(413) 444 - 4444

**RIGHT TO CANCEL**

You have a right to cancel this transaction, without penalty, by midnight on February 28, 2022. No funds will be disbursed to you or to your school until after this time. You may cancel by calling us at (413) 444 - 4444.

**Loan Rates & Estimated Total Costs**

**Total Loan Amount**

**\$85,200.00**

The total amount you are borrowing.

**Interest Rate**

**6.51%**

Your current interest rate.

**Finance Charge**

**\$84,919.64**

The estimated dollar amount the credit will cost you.

**Total of Payments**

**\$192,305.64**

The estimated amount you will have paid when you have made all payments.

**ITEMIZATION OF AMOUNT FINANCED**

Amount paid to you	\$0.00
Amount paid to others on your Behalf: - Amherst College	+\$80,000
Amount Financed (total amount provided)	=\$80,000
Initial finance charges (total) - Origination Fee (\$2400) - Loan Guarantee Fee (\$2800) - Other Fees (\$0)	+\$5200
Total Loan Amount	=\$85,200

**ABOUT YOUR INTEREST RATE**

- **Your rate is variable.** This means that your actual rate varies with the market and could be lower or higher than the rate on this form. The variable rate is based upon the LIBOR Rate (as published in the *Wall Street Journal*). For more information on this rate, see the reference notes.

- There is no limit on the amount the interest rate can increase.

- Your **Annual Percentage Rate (APR) is 7.34%**. The APR is typically different than the Interest Rate since it contains fees and reflects the cost of your loan as a yearly rate. For more information about the APR, see reference notes.

**FEES**

- **Late Charge:** 5% of the amount of the past due payment, or \$25, whichever is greater.

- **Returned check charge:** up to \$25.

- **Fee when you begin repaying the loan:** 3.5% of the loan balance.

**Estimated Repayment Schedule & Terms**

20 YEAR LOAN TERM	MONTHLY PAYMENTS	
	At 6.51% the current interest rate of your loan	No Maximum Rate example at 25%
Sept. 1, 2022 - Oct. 31, 2026 deferment period	No payment required (\$22,186 in interest will accrue during this time)	No payment required (Interest will accrue during this time)
Nov. 1, 2026 - Sept. 30, 2046 239 monthly payments	\$801.27	\$3,575.36
Sept. 30, 2046 1 monthly payment	\$796.95	\$3,502.39

◀ Though your loan does not have a maximum interest rate, an example rate of 25% has been used for comparative purposes.

The estimated **Total of Payments** if your rate rises to 25% will increase. Your Total of Payments will be higher if rate increases above 25%

**REFERENCE NOTES****Variable Interest Rate:**

- Your loan has a variable Interest Rate that is based on a publicly available index, the London Interbank Offered Rate (LIBOR).
- The Interest Rate may be higher or lower than your Annual Percentage Rate (APR) because the APR considers certain fees you pay to obtain this loan, the Interest Rate, and whether you defer (postpone) payments while in school.
- The rate will not increase more than once a month, but there is no limit on the amount than the rate could increase at one time. Your rate will never exceed 25%.
- If the Interest Rate increases your monthly payments will be higher.

**Bankruptcy Limitations:**

- If you file for bankruptcy you may still be required to pay back this loan.

**Repayment Options:**

- Although you elected to postpone payments, you can still make payments while you are in school. You can also choose to change your deferment choice to: Pay Interest Only or Make Full Payments. More information about repayment deferral or forbearance options is available in your loan agreement.

**Prepayments:**

- If you pay the loan off early, you will not have to pay a penalty. You will not be entitled to a refund of part of the finance charge.

See your loan agreement for any additional information about nonpayment, default, any required repayment in full before the scheduled date and prepayment refunds and penalties.

*Note: Loan Document 1 - Regulated Private Student Loan. Exact loan document used in experiment. Loan documents are modeled off of Consumer Finance Protection Bureau's H-23 Private Education Loan template.*

# Loan Document 2

## PREDATORY LOAN

Page 1 of 2

**BORROWER:**  
Jones Jones  
16 Barrett Hill Dr.  
Amherst, MA 01002  
(413) 555 - 5555

**CREDITOR:**  
ABC Bank  
123 First Street  
Anytown, MA 00001  
(413) 444 - 4444

### RIGHT TO CANCEL

You have a right to cancel this transaction by midnight on February 28, 2022. You will be charged \$1000 for cancellation. No funds will be disbursed to you or to your school until after this time. You may cancel by calling us at (413) 444 - 4444.

## Loan Rates & Estimated Total Costs

### Total Loan Amount

\$93,400.00

The total amount you are borrowing.

### Interest Rate

6.51%

Your current interest rate.

### Finance Charge

\$93,092.44

The estimated dollar amount the credit will cost you.

### Total of Payments

\$210,813.44

The estimated amount you will have paid when you have made all payments.

## ITEMIZATION OF AMOUNT FINANCED

Amount paid to you	\$0.00
Amount paid to others on your Behalf: - Amherst College	+\$80,000
Amount Financed (total amount provided)	=\$80,000
Initial finance charges (total) - Origination Fee (\$4000) - Loan Guarantee Fee (\$4400) - Other Fees (\$5000)	+\$13,400
Total Loan Amount	=\$93,400

## ABOUT YOUR INTEREST RATE

- **Your rate is variable.** This means that your actual rate varies with the market and could be lower or higher than the rate on this form. The variable rate is based upon the LIBOR Rate (as published in the *Wall Street Journal*) and is subject to change based on ABC Bank policies. For more information on this rate, see the reference notes.

- There is **no limit on the amount the interest rate can increase.**

- Your **Annual Percentage Rate (APR) is 8.55%**. The APR is typically different than the Interest Rate since it contains fees and reflects the cost of your loan as a yearly rate. For more information about the APR, see reference notes.

## FEES

- **Late Charge:** 25% of the amount of the past due payment, for the first time, increasing by 5% each subsequent time, minimum \$250.
- **Returned check charge:** up to \$250, increasing by \$100 each subsequent time.
- **Fee when you begin repaying the loan:** 5% of the loan balance.
- **Transfer and Other Mandatory Fees:** \$5000.

## Estimated Repayment Schedule & Terms

20 YEAR LOAN TERM	MONTHLY PAYMENTS	
	At 6.51% the current interest rate of your loan	No Maximum Rate example at 25%
Sept. 1, 2022 - Oct. 31, 2026 deferment period	No payment required (\$24,321 in interest will accrue during this time)	No payment required (Interest will accrue during this time)
Nov. 1, 2026 - Sept. 30, 2046 239 monthly payments	\$878.39	\$3,919.47
Sept. 30, 2046 1 monthly payment	\$873.65	\$3,839.48

Though your loan does not have a maximum interest rate, an example rate of 25% has been used for comparative purposes.

The estimated **Total of Payments** if your rate rises to 25% will increase. Your Total of Payments will be higher if rate increases above 25%

**REFERENCE NOTES****Variable Interest Rate:**

- Your loan has a variable Interest Rate that is based on a publicly available index, the London Interbank Offered Rate (LIBOR) and ABC Bank policies.
- The Interest Rate may be higher or lower than your Annual Percentage Rate (APR) because the APR considers certain fees you pay to obtain this loan, the Interest Rate, and whether you defer (postpone) payments while in school.
- The rate is subject to change at the discretion of ABC Bank, and there is no limit on the amount that the rate could increase at one time. Your rate can exceed 25%.
- If the Interest Rate increases your monthly payments will be higher.

**Bankruptcy Limitations:**

- If you file for bankruptcy you will still be required to pay back this loan. ABC Bank reserves the right to seize assets as collateral for this loan including but not limited to real estate, trusts, estates, motor vehicles, etc. ABC Bank also reserves the right to contact spouses, children, and relatives for payment.

**Repayment Options:**

- Although you elected to postpone payments, you can still make payments while you are in school. You can also choose to change your deferment choice to: Pay Interest Only or Make Full Payments. More information about repayment deferral or forbearance options is available in your loan agreement.

**Prepayments:**

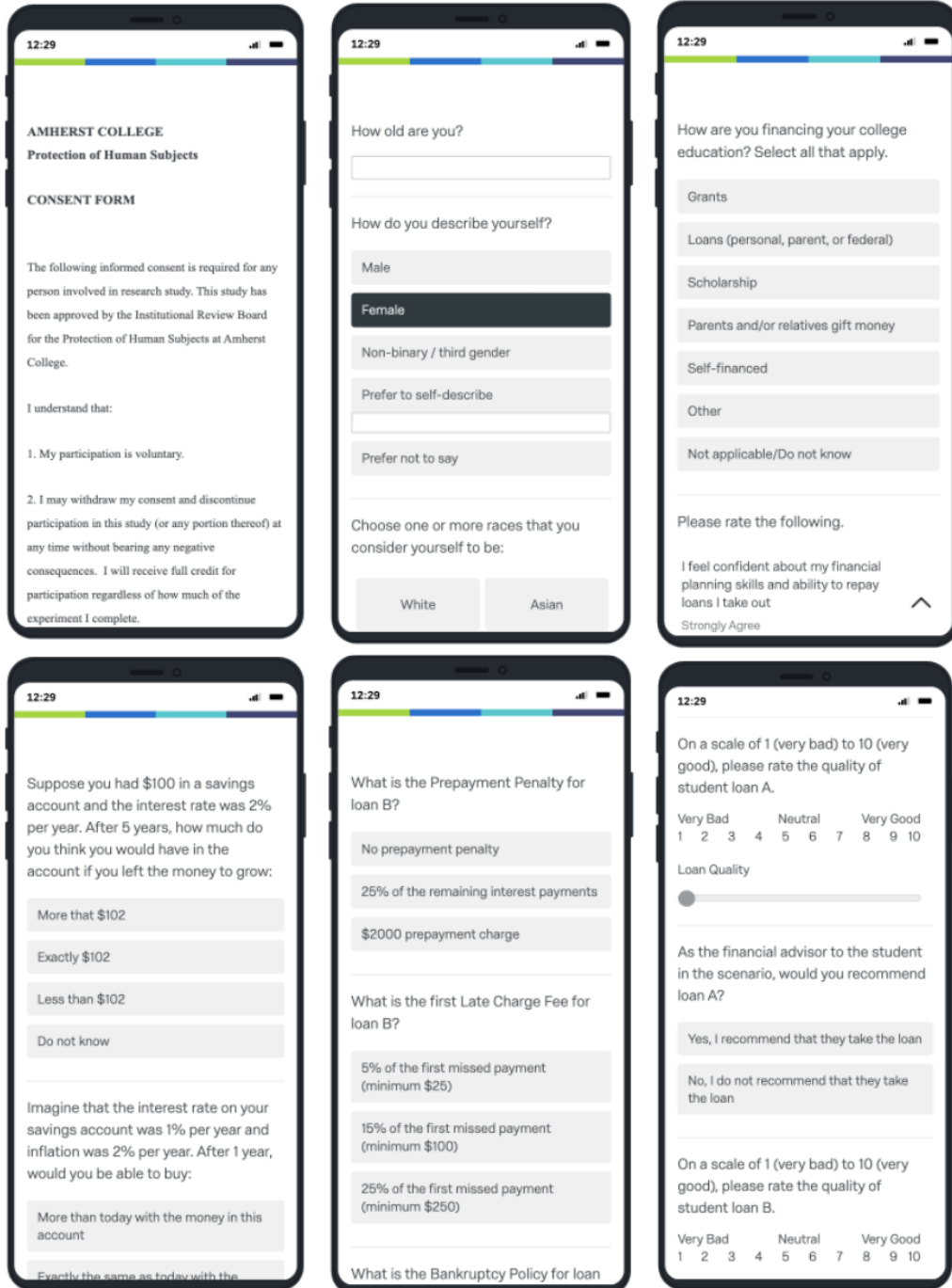
- If you pay the loan off early, you will be required to pay a penalty equal to 25% of the remaining interest payments had the loan not been paid off early. You will not be entitled to a refund of part of the finance charge.

See your loan agreement for any additional information about nonpayment, default, any required repayment in full before the scheduled date and prepayment refunds and penalties.

*Note: Loan Document 2 - Predatory Private Student Loan. Exact loan document used in experiment. Loan documents are modeled off of Consumer Finance Protection Bureau's H-23 Private Education Loan template. Predatory terms reflect current definitions of predatory lending in the literature.*

### 6.3. Survey Interface

Survey Interface Images 1-6 (Labeled Top to Bottom, Left to Right)



Note: Screen captures from Qualtrics survey. Image 1 (top-left): An informed consent page is the first page of the survey. Image 2 (top-middle): Demographic questions follow consent page. Image 3 (top-right): Additional measures including having student loans, financial planning confidence, and risk aversion. Image 4 (bottom-left): Financial literacy proxy questionnaire. Image 5 (bottom-middle): Questions regarding specific aspects of the loans. Image 6 (bottom-right): Questions that ask the participant to rate the quality of each loan they received and whether they would recommend each loan to the students in the scenario.



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