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College Student Debt and Anticipated Repayment Difficulty

By Jonathan J. Fox, Suzanne Bartholomae, Jodi C. Letkiewicz, and Catherine P. Montalto

This study analyzes factors associated with anticipated difficulty with repayment of debt accumulated during college using a basic model of credit risk that includes socialization processes influencing college student financial decisions. The empirical analysis uses data from the 2010 Ohio Student Financial Wellness Study. Results provide evidence of male overconfidence in financial decision making, as males are less likely than females to predict repayment difficulties. Socialization process variables, including financial management practices, financial parenting communication, and expected economic returns from education, are strongly associated with anticipated debt repayment difficulty. Inclusion of these process variables in the model results in loss of explanatory power of many of the traditional individual success variables, such as grade-point average, and graduation plans.

Keywords: college student debt, student loan default, credit

A study published by the American College Health Association (2011) reports that nearly 35% of students described their financial situation over the last year of school as "traumatic or difficult to handle." Rising education costs and poor employment prospects for some college-age students add to the challenge of financing an education with confidence. Despite these challenges, students are choosing to finance their education with loans now more than ever. In 2013, almost seven in 10 (69%) graduating seniors had student loans (Chopra, 2013). College loans have surpassed the total amount owed by all credit card revolvers (i.e., credit card holders who carry a monthly balance) and total student debt has been estimated at $1.3 trillion at the end of 2016 (Federal Reserve Bank of New York, 2017) representing a 170% increase over the past ten years.

Approximately 37% of households headed by an adult younger than age 40 have some student debt (Fry, 2014). This is the highest share on record, with an average total student loan indebtedness of $28,400 reported for 2013 college graduates (Reed & Cochrane, 2014). The Federal Reserve Bank of New York reported that as of the end of 2012, only 39% of student loan borrowers were making any progress in paying down their balances (Lee, 2013). Using the Survey of Consumer Finances, Fry (2014) found that among households headed by a college graduate, those with student debt are more likely to have outstanding loans on their cars and greater credit card debt. This study also found that households with student debt have more difficulty making debt payments on time. Approximately 9% of student loan debtors were 60 or more days delinquent in making payments on any of their debt. This is compared to 3% of those without student loans. However, some scholars argue that the student-debt crisis is better characterized as a crisis of repayment, as loan amounts are not out of line with the value of a college

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education and the rise in student loan defaults are not driven by borrowers with large loan amounts (Dynarski & Kreisman, 2013; Looney & Yannelis, 2015). For example, borrowers making timely payments without difficulty carry an average loan of $22,000 compared to borrowers in default with an average loan balance of $14,000 (Dynarski & Kreisman, 2013).

Nonetheless, the increase in student debt has come to the forefront with many colleges, students, and parents worried about the consequences. One potential problem with escalating student debt is the possibility of default. More than 850,000 private student loans are currently in default, totaling more than $8 billion (Chopra, 2012). The budget lifetime default rates—the projected percentage of the federal loan dollars that may default during the projected 20-year life of the loan cohort—for the 2010 and 2011 cohorts are 19.2% and 18.4%, respectively (U.S. Department of Education, 2014).

Students, colleges, and the federal government all incur the negative consequences of loan default. For students, the repercussions can be devastating. When borrowers default on their loans, the government can garnish wages and tax refunds, and can restrict them from receiving financial aid and possibly even social security benefits in the future (Loonin, 2006). In most cases, discharge of student loans is forbidden in bankruptcy, leaving little hope that the borrower will get any relief from the burden. Once a borrower defaults, it is reported to credit agencies, making future borrowing more difficult and more expensive.

For college and university administrators, a revision in the cohort default rate (CDR) calculation, changing from a 2-year to 3-year cohort for 2012 reporting, pushed up default rates. The U.S. Department of Education (2013) reported that the national two-year cohort default rate increased from 9.1% for fiscal year (FY) 2010 to 10% for FY 2011. The three-year cohort default rate increased from 13.4% for FY 2009 to 14.7% for FY 2010, but then declined to 13.7% for FY 2011 and, even lower, to 11.8% in FY 2012. The 3-year default rate for FY 2012 in Ohio, the state at the center of the current study, was higher than the national average at 14.6%.

With sanctions linked to institutional qualification for subsidized loans, colleges and universities face real challenges. For individual borrowers, student debt likely impacts post-college financial decisions such as job choice, family or household formation, and taking on additional debt for major purchases such as a home or a car (Fry, 2014). Millett (2003) found that student loan debt deters application and enrollment in postbaccalaureate education. The federal government has a stake in defaults as well. The U.S. Department of Education reported that in 2009 the federal government spent over $9 billion on servicing and monitoring defaulted loans (U.S. Department of Education, 2010).

In this paper, we highlight the debt decisions of college students through analysis of self-reported repayment concerns on student debt. We base our analysis on an integrated conceptual framework that focuses on creditworthiness. Within this structure, we review the literature on college student debt default, estimate the student debt repayment difficulty model using data from a state-wide survey of Ohio college students, and discuss implications for students, administrators, and policymakers.

Conceptual Framework

The global determinants of creditworthiness are well recognized as the "four C's" of credit: character, capacity, capital, and conditions (Dun & Bradstreet®, 2014). For student debt, most of these conditions are difficult to assess and observe directly. Character is based on credit history, and typical college-age (18- to 22-year-old) students have little or no record of debt and repayment. Capacity to repay debt is indicated by income relative to expenses and cash flow, which again, are qualities typical college students lack in the eyes of creditors. Capital or collateral assets refer to borrower's contributions (i.e., a down payment) or a

creditor's mechanism to secure a loan (i.e., a car secures a car loan), and are also not common among most college students. Conditions is the final "C" and accounts for economic (i.e., interest rate of loan) and environmental aspects that are traditional credit risk factors and can more readily be observed among students. With this disconnect between the student debt market and other types of lending, the student debt literature utilizes some combination of four conceptual approaches to study the problem. Each approach relies on some level of projection of students' likely levels of character, capacity, capital, and conditions. The four approaches to describe the determinants of student debt have been defined as: human capital, ability to pay, organizational/structural, and student-institution fit (Volkwein, Szelest, Cabrera, & Napierski-Prancl, 1998).

A human capital approach emphasizes individual or societal willingness to invest in education credentials. Such an approach maintains that those who succeed in college, indicated by factors such as graduation, high grade-point average (GPA), and attainment of advanced degree, will find good jobs and their investment will pay off financially through higher lifetime earnings. Similarly, indirect societal benefits are often pitted against the public cost of education (Becker, 1975; Freeman, 1976). This concept is close to the traditional idea of capital (or collateral assets) as a mitigating factor in credit markets.

Ability-to-pay models link student debt default to items such as family income, family support, need-based grants and scholarships, student employment, marital status, and family size (Cabrera. Nora, & Castaneda, 1992; Cabrera, Stampen, & Hansen, 1990). Such an approach is not all that different from measuring a student borrower's capacity for credit.

Organizational characteristics or structural/functional perspectives emphasize the campus mission or type of school, the size of the university, overall selectivity, and the wealth or endowment of the institution (Hall, 1991). Such an approach could be considered part of the environmental conditions for credit and the capital endowment of the institutions.

Student-institution fit models focus on items such as financial aid, living and/or working on campus, educational goals, student learning and growth, and counseling (Pascarella & Terenzini, 2005), some of which may be analogous to issues of credit character and credit history.

Review of Literature

The majority of research on student debt repayment was conducted in the late 1980s and 1990s, with only a recent resurgence in the topic (Gross, Cekic, Hossler, & Hillman, 2009; Hillman, 2014). Researchers and policy makers initially became interested in student loan debt repayment when Congress restructured the Higher Education Act (HEA) in 1980. This led to a shift in higher education funding with loans replacing grants and parents taking on debt to finance their child's education (e.g., Parent Loans for Undergraduate Students [PLUS loans]). Research to date has focused on various factors influencing repayment difficulties, such as individual student characteristics, institutional characteristics, and the types of loans used to finance higher education (Gross et al., 2009). Research indicates that the characteristics predicting nonpayment are neither straightforward nor as consistent as one might expect. This review will be organized by the four conceptual approaches used by Volkwein et al. (1998) to analyze student debt repayment: human capital, ability to pay, organizational/structural, and student-institution fit. For a thorough review of the literature on student loan default, refer to Gross et al. (2009), Hillman (2014), and McMillion (2004).

Human Capital

Human capital has traditionally been measured by characteristics such as a financial investment in education, graduation and/or degree completion, and GPA. Higher academic achievement is associated with lower default rates. Degree completion is the strongest single predictor of student loan repayment (Volkwein, et al., 1998; Woo, 2002a). Hillman (2014) finds that leaving college early is associated with student debt repayment difficulties. Mezza and Sommer (2015) found degree completion to be a strong predictor of future student loan delinquencies, after controlling for credit variables, including credit scores. A study based on Texas A&M University students found that students who did not graduate had a 14% default rate compared to a 2% default rate for students who completed their degrees (Steiner & Teszler, 2003). GPA has been shown to be negatively associated with student loan default (Christman, 2000; Steiner & Teszler, 2005; Woo, 2002a). Academic preparation, as measured by high school rank, SAT scores, and high school GPA, is associated with default rates as students who are more prepared academically tend to have better records of repayment (Christman, 2000; Podgursky, Ehlert, Monroe, Watson, & Wittstruck, 2002).

Studies have examined a number of individual student characteristics, such as age, race, and gender. Researchers have found that age is positively associated with student debt repayment problems. The older the borrowers are, the more likely they are to miss debt payments (Herr & Burt, 2005; Steiner & Teszler, 2005). Findings on gender have been mixed. While several studies indicate no gender differences (Harrast, 2004; Volkwein & Szelest, 1995), other studies have found that women may take longer to repay their debt (Choy & Li, 2006), but men are more likely to miss payments repeatedly (Flint, 1997; Woo, 2002a, 2002b). Studies involving race have consistently found that Blacks are more likely to experience repayment problems than their White counterparts (Christman, 2000; Harrast, 2004; Steiner & Teszler, 2003; Woo, 2002a). Hillman (2014) found that minority students and those from lower-income households miss debt payments at disproportionately higher rates than their counterparts.

Ability to Pay

Measuring ability to pay is not straightforward for college students, so research typically uses a number of proxy measures. These proxies may include family income and support, grants and scholarships, employment, and family situation. Grants and scholarships may decrease repayment difficulties (Baum & O'Malley, 2003; Dillon & Smiles, 2010); however, one study found that the amount of aid and types of loans have no impact on debt repayment (Steiner & Teszler, 2003). Regarding debt levels and default, the literature presents mixed findings. Hillman (2014) showed a nonlinear relationship between debt and repayment, with a gradual "u-shape" functional form. Hillman (2014) suggested this may be because, while those who drop out before completing their degree may have less debt they also have fewer opportunities and lower earning potential, making repayment more difficult. Those who complete their degrees tend to accumulate more debt in the simple act of staying in school longer, which also increases the difficulty of repayment. In some studies debt levels have been found to be positively correlated with student loan payment difficulties. The higher the loan amount, the more likely the borrower is to miss or delay payments (Choy & Li, 2006; Steiner & Teszler, 2005; Woo, 2002a), while in others default is found to be higher at lower loan balances (Dynarski & Kreisman, 2013). After controlling for credit scores, Mezza and Sommer (2015) found that borrowers with credit card and mortgage debt held before repayment were actually less likely to become delinquent on subsequent student loans compared to borrowers with no previous consumer debt.

A number of family characteristics have been explored, including parental income and education, and borrowers' marital status and number of dependents. Parental education (Choy & Li, 2006; Steiner & Teszler, 2003, 2005; Volkwein & Cabrera, 1998) and parental income (Woo, 2002a) are generally associated with repayment difficulty, with higher education and income associated with better repayment rates. The

family structure of the borrower after college is also important. The regular payment records are less prevalent when the number of dependents supported by the borrower increases (Advisory Committee on Student Financial Assistance, 2006; Volkwein & Szelest, 1995; Woo, 2002a). Being separated, divorced, or widowed increases the likelihood of facing repayment problems (Volkwein & Szelest, 1995) while being married decreases the likelihood of late and delinquent payments on student loans (Volkwein & Cabrera, 1998).

The two key factors after college are income and unemployment. As income increases, the likelihood of repayment difficulty decreases (Volkwein et al., 1998; Woo, 2002a). Similarly, periods of unemployment increase payment problems (Volkwein et al., 1998; Woo, 2002a). A study by Woo (2002a) found that borrowers who have experienced periods of unemployment show an 83% increase in their probability to default over their initial projected probability.

Organizational Characteristics and Student-Institution Fit

Organizational factors and student-institution fit include aspects such as continuous enrollment, field of study chosen by the student, campus living arrangements, satisfaction with the institution, and institution type. Students attending for-profit institutions have significantly greater odds of non-repayment (Hillman, 2014). Continuously enrolled students (Podgursky et al., 2002; Steiner & Teszler, 2005; Woo, 2002a) and students who finish in four years (Harrast, 2004; Steiner & Teszler, 2005) are more likely to remain current on their loans. Findings in a study by Lochner and Monge-Naranjo (2008) indicate that any effects of college major disappear once debt levels and income are taken into account. However, other studies indicate that postgraduate earnings associated with college major affect income and therefore ability to repay loans (Herr & Burt, 2005; Steiner & Teszler, 2005). In a study of Texas A&M students, Steiner and Teszler (2003) found that the longer students lived in a dorm, the fewer the debt repayment difficulties. The higher the level of satisfaction students express for their institutions, the less likely they are to discontinue payment on student loans (Christman, 2000).

Methods

This study identified critical factors associated with anticipated repayment difficulty on debt obligations accumulated by college students. Using the students' own predicted expectation of repayment difficulty, we analyzed risk factors in a model highlighting human capital, ability to pay, organizational/structural, and student-institution fit. Through this approach we were able to analyze a wider context of influence in individual financial decision making in stressful situations (e.g., debt repayment difficulties).

Data

This project used data from the 2010 Ohio Student Financial Wellness Survey (OSFWS), a web-based survey of undergraduate college students. The purpose of the OSFWS was to collect information on the financial behaviors and decisions, enrollment progress, and attitudes and perceptions of undergraduate college students. The Office of the Ohio Treasurer sent letters to all Ohio colleges and universities participating in the federal student aid programs (14 four-year public, 51 four-year private, and 23 two-year public) explaining the financial wellness initiative and inviting participation in the project. Nineteen invited educational institutions participated in the project representing four-year public colleges/universities (*n*=6), four-year private colleges/universities (*n*=8), and two-year community colleges (*n*=5). The selection of college students was random by institution and stratified by class rank, resulting in a total sample of approximately 33,500 undergraduate college students. Students received an email solicitation with a 99-item

web survey in November 2010 and three follow-up email reminders at one week intervals before the survey closed approximately one month later.

From the 19 colleges, 5,729 students responded, with a total response rate of 17.1%. The response rates ranged across campuses from 8.1% to 39.2%. Our total response rate was in line with the national trend in declining survey response rates (National Research Council, 2013). This trend has ignited numerous research studies focused on improving understanding of the relationship between response rates and data quality (Curtin, Presser, & Singer, 2000; Groves, 2006; Keeter, Miller, Kohut, Groves, & Presser, 2000; Massey & Tourangeau, 2013; Peytchev, 2013). Ultimately, the goal of a survey is to derive sample estimates that are representative of the population of interest. Research findings confirm that while higher response rates increase both face validity and data quality, high response rates don't guarantee unbiased estimates, nor do low response rates predestine survey results to be unrepresentative (Newport, 2003). Further, nonresponse in and of itself is not an issue; the real issue is whether nonresponse bias is present (Peytchev, 2013). The ability to have confidence in survey results is a function of many factors, including sampling, response rates, and respondent count (NSSE, 2014). If the principles of randomness and equal probability of selection are upheld, low response rates need not preclude ability to generate representative estimates (Newport, 2003). A National Survey of Student Engagement (NSSE) study concluded that even relatively low response rates provided reliable institutional-level estimates, although standard errors increased making statistical tests for differences more conservative (Fosnacht, Sarraf, Howe, & Peck, 2013). Additionally, the total number of respondents has been shown to be more important in assuring reliable estimates than response rates (Fosnacht et al., 2013; Pike, 2012).

Confidence in our ability to derive representative estimates from the OSFWS data is based on both high respondent counts (n=5,729) and respondent representativeness. OSFWS respondents, as a whole, are generally representative of the U.S. college student population with respect to sex/gender and race/ethnicity, based on the authors' comparison of the OSFWS data with data from the Integrated Postsecondary Education System (IPEDS) of the National Center for Education Statistics. Across all institution types, women were overrepresented in the OSFWS compared to the IPEDS data, with the greatest difference for two-year public institutions (73.4% versus 53.2%, respectively). For two-year public institutions, Caucasians (84.3%) and multiracial students (3.0%) were overrepresented and African American students (7.5%) were underrepresented in the OSFWS compared to the IPEDS data (71.2%, 0.1%, and 12.7%, respectively). For four-year private institutions, Asian students (1.4%) and Hispanic (1.6%) students were underrepresented in the OSFWS compared to the IPEDS data (3.0% and 2.3%, respectively). OSFWS respondents from four-year public schools were generally representative of the students who attended these schools according to the IPEDS data, with the exception that African American students were underrepresented (7.5% versus 11.9%) and Asian American students were overrepresented in the OSFWS (5.3% versus 0.9%). While generalizability of results is important, our analysis focuses on identifying critical factors associated with expected repayment difficulty and obtaining good estimates of these relationships. Random sampling of undergraduate students at each participating institution combined with high respondent counts increases our confidence in the quality of our estimates.

We reduce the sample used in the analysis from the full sample (n=5,729) to 5,015 cases used in the analyses, dropping cases with missing data (n=693)[1]. Based on information from other survey questions, mean substitutions, and other reasonable assumptions, we retained some cases with missing data (n=482) for the analyses.

Dependent Variable

We measured the dependent variable for the study, *Anticipation of Repayment Difficulty*, using the question "After graduation, I will be able to pay off any debt acquired while I was a student." On a four-point Likert-

type scale, students rated how strongly they agreed or disagreed that they will be able to pay off their debt after graduation. We created a dichotomous variable, coding students who strongly agreed or agreed as 0 and coding students who strongly disagreed or disagreed as 1. Among students who indicated they expect to have difficulty paying off accumulated debt after graduation, 72% currently had some type of debt (e.g., student loan, credit card, car loans, personal loans, etc.), implying that 28% of students were concerned about debt repayment difficulties *before* any debt accumulation. Additionally, 63.4% expected to have credit card debt, and 80% expected to have student loan debt at the time of graduation.

The dependent variable in this study measured students' expectation of repayment difficulty rather than actual repayment difficulties the student may encounter. The theory of reasoned action (Fishbein & Azjen, 1975) is a model for the prediction of behavioral intentions and suggests that if a person expects to do a behavior, then the behavior is more likely—that is, specific attitudes toward the behavior in question can be expected to predict that behavior. A substantial amount of research supports the notion that intention frequently leads to behavior (see Sheppard, Hartwick, & Warshaw [1998] for a full review of the predictive utility of the theory), supporting the use of an expectations measure of debt repayment difficulty in this study.

Individual and Human Capital Characteristics

Gender was dummy-coded: males as 1 and females as 0. We measured *Race* with a set of dichotomous variables indicating whether the student reported their race to be White (reference group), Black, Asian, Hispanic or other. We coded students who did not specify race as other (*n*=16).

Class Rank indicated the student's tenure. Freshmen students served as a reference group and we dummy coded the remaining response categories (sophomore, junior, senior, other).

Low Grade-Point Average (GPA) was a dichotomous variable coded as 1 if the student reported a GPA of less than 3.0. Approximately 77% of the sample reported a GPA above 3.0, therefore this measure essentially captured those struggling academically.

Human Capital Investment was based on the item "I think that the cost of tuition is a good investment for my financial future." Those who agreed or strongly agreed with that statement were dummy coded 1 and those who disagreed or strongly disagreed were coded as 0. As the mean, median, and mode was 3 or "agreed" for the original question, we assigned a 3 to missing values for the question (*n*=55), and thus classified them as students agreeing that tuition is a good investment.

Plans Advanced Degree was coded 1 for students who planned to pursue a professional, master's, or doctoral degree and 0 for those terminating their degrees at an associate's (*n*=924) or bachelor's degree (*n*=2925), or who were undecided, didn't know, or didn't answer (*n*=14).

Graduation Plan was a dichotomous variable based on the question "I have developed a specific plan to complete my current degree." We coded students 1 if they answered yes and 0 if they answered no.

Expected Student Loan Debt at Graduation was based on the question "How much student loan debt do you expect to accumulate by the time you graduate?" Students selected one response from a set of categories including "none" and intervals ranging from "less than $1,000" to "over $100,000". We created four dichotomous variables defined as students who expected to accumulate in student-loan debt upon graduation (a) no debt (20.5%), (b) less than $9,999 (14.6%), (c) between $10,000 and $29,999 (31.5%), (d) $30,000 or more (33.4%). The no debt group served as the reference group.

Character and Ability to Pay

Financial Management is a regression factor score derived from a principal axis factor analysis that produced one factor from six questions. Students rated their level of agreement with the statements "I have a weekly or monthly budget that I follow," "I have a financial plan that will serve my needs until I graduate," "I manage my money well," "I can manage my personal finances without assistance," "I track all debit card transactions/checks to balance my account," and "I know where my money goes." Students responded to each statement on a four-point Likert-type scale (1=strongly disagree, 2=disagree, 3=agree, 4=strongly agree). Factor scores ranged from -4.06 to 2.19 (*SD* 1.00) and Cronbach's alpha was 0.721 indicating good internal consistency.

Financial Parenting is a regression factor score based on a principal axis factor analysis that produced a single factor from four questions about parenting and money management. One item, "While you were growing up, how often did your parents or guardians discuss money management with you?" received responses ranging from 1 (never) to 4 (often). Three items, "My parents or guardians were comfortable talking about money with me," "My parents or guardians told me what I needed to know about money management," and "My parents or guardians were excellent role models of sound financial management," received responses ranging from 1 (strongly disagree) to 4 (strongly agree). The factor scores ranged from -2.50 to 1.49 (*SD* 1.00) and internal reliability analysis indicated a Cronbach's alpha of 0.861.

Financial Stress is also a regression factor score derived from a principal axis factor analysis from three variables that assessed the level of agreement on a four-point Likert type scale (1= strongly disagree, 2=disagree, 3=agree, 4=strongly agree). The three statements were "I feel stressed about my personal finances in general," "I worry about being able to pay monthly expenses," and "I worry about having enough money to pay for school." Higher scores represent higher levels of financial stress. The factor score is based on a principal axis factor analysis that produced a single factor. Factor scores ranged from -2.27 to 1.49 (*SD* 1.00). Internal reliability analysis indicated a Cronbach's alpha of 0.845.

Negative Impact on Academics is a regression factor score measured from a principal axis factor analysis that produced a single factor from three items: "Has the amount of money you owe ever caused you to reduce your class load?" "Has the amount of money you owe ever caused you to consider dropping out of college?" and "Has the amount you owe ever caused you to neglect your academic work?" Responses ranged from 1 (does not apply/no debt) to 5 (always). The factor scores ranged from -1.46 to 3.67 (*SD* 1.00). Internal reliability analysis indicated a Cronbach's alpha of 0.871.

No Scholarship or Grant funding was coded as 1 for students who had no financial support from a scholarship or grant that did not need to be repaid. We coded students who reported at least some support as 0.

High School Personal Finance Class, College Personal Finance Class, and *Both High School and College Personal Finance Class* were constructed from two questions: "While in high school I attended personal finance classes/workshops" and "I have attended personal finance classes/workshops while in college." We created three dummy variables coded as 1 if the student had financial education in high school but not college, in college but not high school, or in both high school and college, respectively. The reference group, coded 0, was students who had no personal finance classes/workshops.

Creditworthiness was constructed from a series of questions about credit-card payments. Students were coded 1 when their answer denoted positive credit repayment behavior. For example, "I regularly pay credit card bills in full and avoid any finance charges," "When I get a credit card bill, I usually pay the full balance," "In the past six months I have always paid more than the minimum amount due on my credit

card," "On average, the monthly balance I carry on my credit cards is… None, I pay it off completely," and "How much credit card debt do you plan to accumulate by the time you graduate? None." Based on the distribution of the scores on these signals of creditworthiness, we assigned students a 1 and classified them as having good credit behavior if they answered positively to three or more of these questions. Otherwise, we assigned them a 0.

Bad Credit History was assessed by an indicator variable coded 1 for students who answered the question, "If you do carry a balance on your credit cards, or have other consumer debt, please indicate why you use this type of credit instead of obtaining student loan money," with the response "I have a bad credit history." We coded those responding otherwise as 0.

Car Loan was based on the item "Do you currently have a car on which you are making loan or lease payments?" Students with a car loan were coded 1; students without a car loan and those students with no answer (n=8) served as the reference group.

Spending on Credit was based on the item "I regularly spend more money than I have by using credit and borrowing." We coded students who agreed or strongly agreed 1 and coded those who disagreed or strongly disagreed 0.

Does Not Know Current Student Loan Amount was based on the question, "How much do you currently owe in student loans?" We coded students who did not know their debt amount as 1 and all other values as 0.

Parent Assisted Credit Cards was assessed by the question, "Did your parents ever assist you in obtaining your own credit card?" We coded the variable 1 for yes and 0 for no or do not have a credit card (n=1,097).

Employment (not employed, full-time, part-time, summer) was coded into three dummy variables, with students who were not employed serving as the reference group.

Organizational Characteristics and Student-Institution Fit

Institution type was coded into three dummy variables: public 4-year, private 4-year, and public 2-year (community college). The reference group was public 4-year institution.

Lives on Campus was measured with the item "Which of the following best describes where you live while attending your university?" with responses dummy coded 1 (residence halls or other university housing, excluding fraternity or sorority house) or 0 (residence within walking distance of university, residence within driving distance of university, fraternity or sorority house, other, or no answer (n=21).

Works on Campus was coded 1 for students who worked on campus and 0 for students who worked off campus or were not currently employed.

Analysis

Logistic regression models were used to estimate the probability that a student *anticipated repayment difficulty* based on the contribution of individual and human capital characteristics, character and ability to pay, and organizational characteristics and student-institution fit. We present a full model that includes *institution type* (public university, private university, or community college) with two dummy variables for private and community college and public university serving as the reference group. We then present the logistic regression separately by institutional type.

Results

Descriptive Statistics

Table 1 presents descriptive statistics for (a) the sample, (b) students who do not expect to have repayment difficulty, and (c) students who expect to have problems repaying their debt accumulated while in college. We present the same descriptive statistics separately for students enrolled at public universities, community colleges, and private universities by expected repayment difficulty.

About one quarter (24%) of Ohio college students surveyed indicated they expected to graduate but then expect to have difficulty paying off their accumulated debt. Students with junior and senior rank made up larger proportions of those expecting repayment problems when compared to students not expecting repayment problems. Expectations of repayment problems were not level across all institution types: 30% of students attending private institutions, 22% of students in public four-year institutions, and 18% of students in community colleges expected to face debt repayment difficulty. Among those expecting repayment problems, 29% had low GPAs. Almost 82% of all students had a specific plan to complete their degree, compared to 79% of borrowers expecting problems with repayment.

Approximately 65% of students responding to the survey expected to graduate with at least $10,000 of student debt, 34% expected to graduate with more than $30,000 in student loan debt, and 21% expected to graduate with no student loan debt. In contrast, the high debt group made up 47% of those expecting to face repayment problems on their debt obligations. Of those, the greatest prevalence of high expected debt levels appeared among those in private institutions expecting to have repayment problems (55%). About one-fifth of students, regardless of expectation of repayment problems, reported no financial support from grants or scholarships.

Similarly, about one-fifth of all students expected to pursue education beyond their bachelor's degree. Those currently attending community colleges expected to pursue an advanced degree at lower rates (approximately 1 in 10), and those in public institutions had the highest expectation of attaining an advanced degree (approximately 3 in 10).

Males made up almost 32% of the entire sample; however, only 26% of those expecting repayment problems were male. With respect to race, Whites were slightly underrepresented in the group that expected to face repayment difficulty (81%) and Blacks were slightly overrepresented (10%) among those expecting problems when compared to the total sample (83% and 7%, respectively).

Approximately 13% of students expecting to face repayment difficulty did not know the amount they currently owed in student loans, compared to less than ten percent of the whole sample (8%) and students not expecting repayment difficulty (7%). As indicated by the factor scores, students expecting repayment challenges felt more financial stress, reported difficulty managing their personal finances, and perceived less financial guidance from their parents compared to students who did not expect repayment problems. This relationship was consistent across all institutional types.

Also based on factor score differences, those students expecting repayment problems more often considered reducing or interrupting enrollment compared to students not expecting difficulty. Higher percentages of students expecting repayment problems lived on campus (38% vs 32%) and worked on campus (32% vs. 28%).

Table 1

Descriptive Statistics of Student and Human Capital Characteristics and Credit Qualities by Expected Repayment Difficulty (percentages or means)

Variable	All students (N=5,015)			Public (N=1,806)		Community (N=1,278)		Private (N=1,931)	
	Full sample (N=5,015)	Not expecting difficulty (N=3,810) 76%	Expecting difficulty (N=1,205) 24%	Not expecting difficulty (N=1,411) 78%	Expecting difficulty (N=395) 22%	Not Expecting difficulty (N=1,052) 82%	Expecting difficulty (N=226) 18%	Not Expecting difficulty (N=1,347) 70%	Expecting difficulty (N=584) 30%
Individual and human capital characteristics									
Gender (% male)	31.5%	33.5%	25.9%	39.1%	28.1%	27.8%	24.3%	31.5%	25.0%
Race/ethnicity									
White (reference) group	83.2%	83.8%	81.4%	80.8%	78.2%	85.3%	81.4%	85.8%	83.6%
Black	7.5%	6.7%	10.0%	6.4%	11.1%	6.1%	10.6%	7.5%	9.1%
Asian	2.4%	2.4%	2.2%	5.2%	3.0%	1.0%	1.3%	0.7%	2.1%
Hispanic	2.2%	2.3%	1.7%	2.4%	2.8%	2.9%	2.7%	1.8%	0.7%
Other	4.7%	4.7%	4.6%	5.2%	4.8%	4.8%	4.0%	4.2%	4.6%
Class rank									
Freshman (reference group)	25.8%	27.2%	21.5%	21.3%	16.5%	38.5%	31.9%	24.4%	20.9%
Sophomore	24.2%	25.1%	21.2%	21.0%	19.5%	36.7%	37.2%	20.5%	16.3%
Junior	20.0%	19.0%	23.0%	22.3%	22.5%	8.7%	13.7%	23.5%	26.9%
Senior	25.4%	23.9%	30.0%	30.5%	36.7%	8.3%	8.0%	29.2%	33.9%
Rank - other	4.7%	4.8%	4.3%	30.5%	4.8%	7.8%	9.3%	2.4%	2.1%
Low GPA	23.4%	21.8%	28.5%	24.2%	36.2%	25.0%	26.5%	16.7%	24.1%
Human capital investment	78.7%	84.3%	60.9%	84.0%	60.3%	91.7%	69.5%	78.9%	58.0%
Anticipating an advanced degree	21.1%	21.0%	21.3%	31.0%	29.9%	8.8%	11.5%	21.2%	20.0%
Has graduation plan	81.9%	82.9%	78.7%	81.6%	74.2%	78.7%	72.6%	87.6%	84.1%
Debt at graduation									
No debt	20.5%	22.8%	13.2%	31.0%	17.7%	22.5%	21.2%	14.3%	7.0%
Low debt (<$9,999)	14.6%	15.8%	11.0%	14.0%	10.4%	24.0%	18.6%	11.3%	8.4%
Mid-level debt ($10,000-$29,999)	31.5%	32.3%	28.8%	28.5%	26.3%	33.6%	30.1%	35.3%	30.0%
High debt (>$30,000)	33.4%	29.1%	47.1%	26.6%	45.6%	19.9%	30.1%	39.0%	54.6%

Variable	All students (N=5,015)			Public (N=1,806)		Community (N=1,278)		Private (N=1,931)	
	Full sample (N=5,015)	Not expecting difficulty (N=3,810) 76%	Expecting difficulty (N=1,205) 24%	Not expecting difficulty (N=1,411) 78%	Expecting difficulty (N=395) 22%	Not Expecting difficulty (N=1,052) 82%	Expecting difficulty (N=226) 18%	Not Expecting difficulty (N=1,347) 70%	Expecting difficulty (N=584) 30%
Student-institution fit									
Lives on campus	33.7%	32.3%	37.9%	29.6%	27.8%	2.3%	2.2%	60.7%	58.6%
Works on campus	28.8%	28.0%	31.5%	29.6%	29.9%	6.0%	5.8%	43.5%	42.5%
Ability to pay									
Financial management[a]	0.00	.101	-.313	.069	-.404	.179	-.243	.076	-.278
Financial parenting[a]	0.00	.060	-.189	.195	-.173	-.244	-.494	.156	-.082
Financial stress[a]	0.00	-.112	.357	-.242	.324	.088	.377	-.133	.372
Negative impact on academics[a]	0.00	-.106	.333	-.237	.250	.060	.508	-.099	.323
No scholarship or grant	19.7%	19.8%	19.4%	26.5%	31.6%	26.7%	27.0%	7.4%	8.2%
Personal finance class – high school	17.1%	16.9%	17.9%	17.9%	15.7%	13.3%	18.1%	18.6%	19.3%
Personal finance class – college	8.4%	8.0%	9.5%	6.5%	7.8%	1.9%	11.1%	9.7%	9.9%
Personal finance class – both high school and college	8.6%	9.0%	7.3%	8.1%	5.1%	7.8%	8.8%	11.0%	8.2%
Credit worthiness	21.3%	22.4%	17.7%	30.8%	21.8%	17.3%	13.7%	17.5%	16.4%
Bad credit history	2.7%	2.1%	4.5%	1.3%	5.1%	3.3%	7.1%	2.0%	3.1%
Has car loan	24.0%	24.4%	22.8%	19.1%	20.5%	39.2%	38.5%	18.5%	18.3%
Spending on credit	15.3%	14.2%	18.8%	14.5%	18.0%	16.2%	26.1%	12.3%	16.6%
Does not know loan amount	8.4%	7.0%	12.9%	5.8%	10.4%	3.0%	3.5%	11.2%	18.3%
Parent assisted credit cards	22.9%	22.4%	24.6%	30.0%	27.8%	9.8%	7.5%	24.2%	28.9%
Employment									
Not employed (reference group)	19.9%	20.2%	18.8%	16.7%	21.0%	34.3%	30.1%	12.9%	13.0%
Full-time employment	23.9%	24.6%	21.9%	21.3%	19.5%	31.2%	32.7%	22.9%	19.3%
Part-time employment	38.9%	38.1%	41.4%	40.9%	43.3%	29.4%	34.1%	42.0%	43.0%
Summer/breaks	17.3%	17.1%	17.8%	21.1%	16.2%	5.1%	3.1%	22.2%	24.7%

[a] Data expressed as means.

The percentage of students who believed that tuition is a good investment was much higher for those anticipating no repayment problems (84%) relative to those expecting repayment difficulty (61%). The distribution by employment status was similar between the two groups. Students considered creditworthy appeared to expect fewer problems with repayment across all institution types and students with a bad credit history, not surprisingly, anticipated more problems with repayment.

Results of the Logistic Regression Analysis

Table 2 presented the logistic regression results related to *anticipated repayment difficulty*. We present the results for the combined sample along with separate models for institution type (public, community college, and private). The combined sample model indicates the odds of anticipated repayment difficulty are associated more with individual and human capital, character and ability to pay, and capacity factors than capital factors. Relative to students enrolled at public universities, students enrolled in private universities demonstrated higher odds of anticipated repayment difficulty by nearly 35% (Odds Ratio [OR]=1.347).

Individual and human capital characteristics. Men had lower odds of anticipating repayment problems (OR=.746) and the magnitude of the effect was largest among males attending public universities (OR=.624). Gender differences were not observed in the community college sample. In private colleges and universities men again had lower odds of reporting expected repayment difficulty but the effect was only marginally significant. Relative to White students, the odds of expecting to face challenges repaying debt was greater by almost 40% among Black students (OR =1.388). Community colleges showed the most significant difference in anticipated repayment difficulties between Black and White students (OR =1.786). Asian students attending private universities had remarkably higher odds of anticipated repayment problems estimated to be approximately three times those of their White counterparts (OR=3.352).

For the full sample, concerns over repayment clearly grew as students moved through the ranks. Seniors had the highest odds of anticipating repayment difficulty (OR=1.440) and the effect was strongest in the public school sample (OR=1.982). Across all institution types, students who believed that their investment in college will pay off in terms of higher earnings in the future had lower odds of anticipating repayment difficulties. Each increase in the belief that college is a good investment was associated with a 63% reduced odds of anticipating repayment difficulties. The community college group showed the largest magnitude of the expected returns on investment in human capital, but the effect size was significant across all institutions.

Concepts related to the area of capital appeared to have limited association with anticipated repayment difficulty of student debt. In our models, we measured the concept of capital by items such as having a graduation plan, anticipating an advanced degree, predicted debt levels upon graduation, and living/working on campus. Among these endowments, the odds of expecting repayment difficulties were lower among students with a graduation plan and higher for students anticipating graduating with higher debt levels. Students with a graduation plan attending a public university had reduced odds of expecting repayment problems (OR=0.738), but this effect did not exist in the community or private college samples. Not surprisingly, relative to those anticipating graduating with no *student debt*, those with higher anticipated student debt levels had higher odds of expecting problems repaying *all types* of debt accumulated while in college. Notably, in the community college model those with a moderate amount of anticipated student loan debt at graduation ($10,000 to $29,999) were actually less likely to anticipate repayment problems than those anticipating graduating with no student debt.

Table 2

Summary of Logistic Regression Analysis for Expected Repayment Difficulty

Predictor	Full sample (N=5,015)		Public (N=1,806)		Community (N=1,278)		Private (N=1,931)	
	B	Odds Ratio	B	Odds Ratio	B	Odds Ratio	B	Odds Ratio
Individual and human capital characteristics								
Male	-.294***	.746	-.472***	.624	-.126	.882	-.224[†]	.799
Black	.328**	1.388	.399[†]	1.490	.580**	1.786	.089	1.093
Asian	.176	1.193	-.266	.767	.716	2.046	1.210**	3.352
Hispanic	-.247	.781	.219	1.245	-.246	.782	-.873	.418
Other	-.259	.772	-.294	.745	-.257	.773	-.210	.811
Sophomore	.067	1.069	.363[†]	1.438	.193	1.213	-.224	.799
Junior	.298**	1.348	.502**	1.651	.454[†]	1.574	.177	1.194
Senior	.365**	1.440	.684**	1.982	.128	1.136	.215	1.240
Other rank	.111	1.118	.305	1.356	.320	1.378	-.342	.710
Low GPA	.044	1.045	.180	1.197	-.278	.757	.148	1.160
Tuition is good investment	-1.017***	.362	-1.025***	.359	-1.567***	.209	-.821***	.440
Anticipating an advanced degree	.059	1.061	-.019	.981	.212	1.236	.116	1.123
Has graduation plan	-.128	.880	-.304*	.738	-.048	.953	.001	1.001
Low debt (<$9,999)[a]	-.136	.872	-.001	.999	-.492[†]	.612	-.069	.933
Mid-level debt ($10,000-$29,999)	-.105	.900	-.001	.999	-.508*	.602	.025	1.026
High debt (>$30,000)	.247*	1.280	.332[†]	1.394	-.088	.916	.344	1.411
Student-institution fit								
Lives on campus	.112	1.119	.276	1.318	-.138	.871	-.019	.981
Works on campus	.031	1.031	.106	1.112	-.181	.834	.082	1.086
Ability to pay								
Financial management	-.277***	.758	-.290***	.748	-.312***	.732	-.262***	.769
Financial parenting	-.116**	.891	-.147**	.863	-.099	.905	-.102***	.903
Financial stress	.291***	1.337	.341***	1.406	.112	1.118	.350***	1.419
Negative impact on academics	.247***	1.280	.223**	1.250	.276**	1.318	.297	1.346
No scholarship or grant	.207**	1.231	.363**	1.437	-.004	.996	.240	1.271
Personal finance class – high school	.174[†]	1.190	-.072	.930	.649**	1.913	.127	1.136

Predictor	Full sample (N=5,015)		Public (N=1,806)		Community (N=1,278)		Private (N=1,931)	
	B	Odds Ratio	B	Odds Ratio	B	Odds Ratio	B	Odds Ratio
Personal finance class – college	.070	1.072	.296	1.344	.342	1.408	-.164	.849
Personal finance class – both high school and college	-.231†	.794	-.546*	.579	.200	1.222	-.230	.795
Credit worthiness	-.021	.979	-.101	.904	-.102	.903	.046	1.047
Bad credit history	.404*	1.498	.902**	2.465	.491	1.633	-.046	.955
Has car loan	-.158†	.853	-.125	.882	-.150	.861	-.160	.852
Spending on credit	-.050	.951	-.299†	.741	.260	1.297	-.083	.920
Does not know loan amount	.534***	1.705	.538**	1.712	-.042	.958	.609***	1.838
Parent assisted credit cards	.303***	1.353	.308*	1.360	-.518†	.596	.502**	1.652
Full-time employment	-.226*	.797	-.534**	.586	.126	1.134	-.310	.733
Part-time employment	-.113	.893	-.463*	.629	.283	1.326	-.141	.869
Employment during breaks	.041	1.042	-.323	.724	-.217	.805	.175	1.191
Institution type								
Private college	.298***	1.347						
Community college	-.016	.984						
Constant	-.793***	.453	-.673*	.510	-.393	.675	-.722*	.486
-2LL	4785.577		1590.886		1031.524		2062.551	
Model χ^2	744.980***		306.416***		161.018***		304.517***	
Nagerlkerke R^2	.207		.240		.195		.207	
df	37		35		35		35	

Note: †$p \leq .10$ *$p \leq .05$. **$p \leq .01$. ***$p < .001$.
[a] Reference group is "No student loan debt expected at graduation."

Ability to pay. The constructs of financial management and financial parenting appear strongly associated with lower odds of anticipating repayment difficulty. Students reporting sound budgeting and planning practices had 25% reduced odds of expecting repayment problems upon graduation across all institution types. Financial parenting practices, such as modeling and discussing positive financial management behaviors, were also associated with a roughly 10% drop in the odds of expecting repayment problems. Students experiencing greater financial stress had approximately 34% greater odds of expecting repayment difficulties than students experiencing low financial stress. In the full model and among students attending a public institution or a community college, our analyses found that if the amount of money a student owed had negatively impacted their academics, they had increased odds of anticipating difficulty with loan repayment after graduation.

Notably, the financial parenting and financial stress effects were prevalent in all institution types except for community colleges. With the exception of the private university setting, students reporting academic issues because of concerns over student debt accumulation were more likely to anticipate debt repayment problems. In public institutions, students without scholarships or other types of funding that need not be repaid had a greater likelihood of anticipated repayment difficulties. Exposure to high school courses in personal finance increased the odds of anticipating repayment difficulty for students enrolled in community colleges. For students attending public four-year institutions, taking both a high school and college personal finance course was associated with a decrease in odds of being concerned about their debt repayment.

Constructs related to the concept of capacity in a credit qualification model included indicators of credit history, parent cosigning, and employment. Students with a self-reported bad credit history were more likely to anticipate repayment problems, with the effect concentrated in the public school sample. Compared to students knowledgeable about their loans, students who did not know how much they currently owed in student loans were 70% to 80% more likely to expect repayment problems. However, this effect was not observed in the community college sample. We observed the same pattern across institution type for those receiving assistance from parents when obtaining credit cards. Parent assistance appeared to associate with a 35% to 65% increase in the likelihood of anticipating repayment problems after graduation and the largest effect appeared among private school students.

Finally, working full- or part-time while in school was associated with lower expectations of repayment problems but again the effect was concentrated among students attending public institutions.

Discussion

The current analyses were parsed by institutional type—public, private, and community colleges. Based on the number of factors predictive of student debt repayment, ten estimates were significant predictors for the public institution sample, compared to six for the community college sample and five for the sample of private institutions. These results suggest that the model variables are better at assessing anticipated repayment difficulty for public institutions compared to private institutions or community colleges. Community colleges have been found to have higher default rates than four-year institutions, but previous studies suggest that the characteristics of the *student* served at each type of institution is predictive, not characteristics of the institution itself (Gross et al., 2009; Flint, 1997; Volkwein at al.; 1998). The conceptual approach of our models of anticipated difficulty with debt repayment was organized by human capital, character/ability to pay, and organizational/structural and student-institution fit. Our results suggest that anticipated repayment difficulty after graduation can be attributed largely to the ability to pay measures rather than the human capital or individual characteristics or organizational/structural and student-institution fit.

Our model of anticipated debt repayment problems performs similarly to those reported in other studies of student debt default and repayment (Gross et al., 2009; McMillion, 2004). A key difference is the impact of gender. In previous studies, males have been shown to be more likely to default on student loans (Schwartz & Finnie, 2002). In this study of debt repayment expectations, we see more evidence of male overconfidence in financial decision making (Barber & Odean, 2001) as males are significantly less likely to expect to have repayment difficulties.

Our findings are in line with previous studies that demonstrate an association between race and expected repayment difficulty (Gross et al., 2009; Steiner & Teszler, 2003). Our results suggest that Black students in general, and particularly from community colleges, are more likely to anticipate repayment difficulty after graduation. Previous studies have shown that Black borrowers, regardless of institution type, have higher default rates (Volkwein & Cabrera, 1998). The higher propensity to default among Black borrowers has been attributed to lower rates of degree completion and wealth levels, larger number of dependents, and more marital disruptions (Wilms, Moore, & Bolus, (1987).

Regarding student success variables, graduation and GPA tie closely to anticipated repayment difficulty and default in the literature. Specifically, students with higher GPAs and detailed course plans through graduation are less likely to expect to have repayment difficulties. Character and ability to pay variables, such as financial management practices and financial parenting communication, are also predictive, reducing the anticipation of repayment difficulty. In the full sample and institutional subsamples, financial management skills were a significant predictor of anticipated difficulty in debt repayment, similar to other studies that found money management to be associated with financial outcomes (Gutter & Copur, 2011). We expected that students who had financial lessons from their parents would demonstrate more effective financial behavior and therefore have a lower risk of anticipating debt repayment issues, similar to previous studies (Xiao, Shim, Barber, & Lyons, 2007). For example, students whose parent taught them financial management skills were more likely to know what they owed, and less likely to demonstrate confusion about how much they owed in student loans (Andruska, Hogarth, Fletcher, Forbes, & Wohlgemuth, 2014). In our full sample and the public and private subsamples, our measure of financial parenting reduced the odds that a student anticipated difficulty in debt repayment.

About 8% of the full sample reported no knowledge about the amount they currently owed in student loan debt, with about 13% of students who expected difficulty with repayment reporting they didn't know their current student loan amount. In the full, public, and private institution samples, students who lacked knowledge about student loans were more likely to anticipate debt repayment issues after graduation. In a study of loan confusion that explored students' confusion about whether and how much they owed in student loans, Andruska et al. (2014) found that 13% of students thought they didn't borrow money in a student loan when in fact they had, and almost one in four underestimated the amount they owed. Males were more confused than females in their study.

Previous research indicates that student debt levels have limited predictive power of student loan delinquencies (see Mezza and Sommer [2015], Dynarski & Kreiman [2013], Hylands [2014]). Accordingly, in our study, only high debt is significant in the full model and in the institutional models; the other debt categories aren't predictive. The four categories appear to adequately represent expected debt levels. For example, for students from public or private institutions, expected debt level is not predictive of their expected difficulty with repayment. For students from community colleges, only mid-level debt is significant; this may speak to the difference between what is considered a burden of debt for a community college student compared to a student from a four-year institution. Community college students typically pay lower tuition than students in four-year institutions (Juszkiewicz, 2014), but tuition makes up a larger percentage of their income (Menges & Leonhard, 2016), thus we might interpret that a mid-level debt burden between $10,000 and $29,999 for a community college is actually considered a high burden.

Our models used an integrated conceptual approach to describe and explain college students' self-reported expectation of anticipated debt repayment problems, with a focus on contexts beyond the individual and their college or university. Previous studies have analyzed student debt using a combination of human capital, ability to pay, organizational/structural, and student-institution fit models (Volkwein, et al., 1998). Similar to these approaches, our findings support the importance of an integrated or combined approach, providing richer results for use and interpretation by college administrators. Based on our analyses, human capital continues to be an important predictive factor. For example, individual characteristics and individual process variables (e.g., financial stress and skills) provide robust explanatory value.

The addition of financial parenting and academic problems related to debt also contribute to the explanation of a student expectation of repayment difficulties. One of our creditworthiness measures, not being eligible to get student loans because of a bad credit history, predicted anticipated repayment difficulty in the full and public institution sample. Including a measure of credit history appears to have value, and this finding corresponds with previous research showing a young borrower's credit score is predictive of subsequent delinquency of student loan repayments (Mezza & Sommer, 2015). As a tool to aid at-risk borrowers, Mezza and Sommer (2015) suggest the use of a borrowers' credit scores.

Implications

Our study has implications for financial educators, families, student affairs professionals, and policymakers. With the notable exception of gender, which is most likely linked to male overconfidence in their finances, our model of predicting anticipated student debt repayment difficulties identifies key factors similar to those reported in previous studies of default.

Almost one in four students in our study expected to have difficulty paying off the debt they accumulate while a student. Student loans that are paid monthly go into default when a payment has not been made in 270 days (U.S. Department of Education, 2015), and the consequences of student loan default are unforgiving. Upon default, the unpaid balance and any interest is payable immediately; defaulters lose their eligibility to defer, forbear, or enter a repayment plan; they are ineligible for future federal financial assistance; and defaulted student loans are handed over to a collection agency. Ultimately, defaulters' credit ratings suffer, limiting their ability to purchase services, such as renting an apartment or getting a cell phone plan, or assets, such as financing a car or a home. Borrowers who default on their loans have their state and federal tax refunds withheld and are subject to wage garnishment. The amount owed on student loans increases because of costs associated with the collection process (U.S. Department of Education, 2015).

We suggest that simply asking about expectations of repayment difficulties is an effective way to identify potential defaulters and could be used as a screening mechanism for targeted financial education and intervention efforts. Beyond the immediate implications of observed self-reported repayment problem expectations, our models show that process variables, such as financial management practices and financial parenting, matter. Programming aimed directly at financial stress reduction, improved financial management, and increased parental communication about finances seem worthy efforts to improve financial decision making among college students. Further, regarding financial literacy or know-how, simply ensuring that students know their true level of indebtedness seems effective in reducing the anticipation of repayment difficulties. Deliberate efforts by lenders and institutions to report consolidated indebtedness levels, much like the recent provision of FICO scores on some monthly credit card statements, seem worthy of consideration.

For families with children heading to college, the results reported here indicate that communication about finances is effective in lowering the odds of student expected debt repayment difficulties. However, family assistance in obtaining and using a credit card may enable poor financial practices to the extent that students perceive the family assistance as discounting their need and responsibility to repay debt, especially among the private school student population.

Implications from much of the previous literature on student debt repayment and default has led to a call for an institutional push for higher levels of student success (higher grades and graduation rates), as academically successful students are most likely to repay their student loan debt. While we find similar results, efforts to increase academic success may not be the most effective response. Specifically, addressing students' perceived potential economic return on educational investments appears to be more effective and cost efficient in reducing anticipated repayment difficulties. Institutional administrators are in a good position to emphasize the economic payoff of an investment in education and degree completion through the use of interventions like career fairs, job placement services, career counseling, and professional mentoring. Even consistent messaging on the economic differences between degreed and non-degreed students stands to remind students of the economic value of the investment, even including interest paid on student loans.

The perception of tuition as a good investment and practicing sound financial management are the only two constructs associated with reduced levels of expected repayment difficulty across all institution types. Therefore, interventions focused on the return on investment to education and practicing the basics of financial management are recommended for their universal appeal. Having said this, it appears equally important to account for gender differences in public institution settings, and racial/cultural differences in community colleges and private institutions.

Conclusion

The results of our models of anticipated student debt repayment difficulty mirror those of studies of default. This provides promising insight into identifying students in need of early intervention. Our results also suggest that intervention strategies focused on career outcomes or market returns to investment in education may be effective in reducing students' anticipation of debt troubles. Our results also provide strong evidence for the need for a tailored approach to interventions across institution type. Regardless of the specific interventions chosen by an institution, 60% of the Ohio students surveyed in this study believe it is the institution's responsibility to provide some sort of financial education to assist with finances. Trombitas (2012) reported that only 65% of higher education institutions were directly addressing student financial decisions and financial literacy and over half of those providing support considered it less than comprehensive and in need of additional support, leaving a sizable gap between desired assistance and what is currently provided.

Nexus: Connecting Research to Practice

- Given the evidence that a non-negligible fraction of students do not know how much they owe in students loans (8.4%) and the limited number of students who report having met with a financial aid counselor (39.4%), programming in financial aid offices should focus on helping students understand their student loan obligations, and university administrators should encourage students to meet with a financial counselor.

- Programming aimed directly at financial stress reduction, improved financial management, and increased parental communication about finances seems worthy in efforts to improve financial decision making among college students.

- Deliberate efforts by lenders and institutions to report consolidated indebtedness levels, much like the recent provision of FICO scores on some monthly credit card statements, seem worthy of consideration.

- Institutional administrators are in a good position to emphasize the economic payoff of an investment in education through the use of interventions like career fairs, job placement services, career counseling, and professional mentoring.

- Outreach information and education to students should describe the severe consequences of default so they are aware of the impact on their credit rating, the increase in their loan amount, additional costs associated with collections, possible garnishment of their wages, and potential for having state or federal tax refunds withheld. Students should receive information or education about how to avoid repayment problems, and once regular payment has been interrupted, what actions steps they should take to mitigate the consequences.

- Through administrative data, institutions of higher education have an opportunity to be more transparent about the net cost of college and final student financial aid including all grants and scholarships available from the institution, federal student aid programs, and state aid programs; federal student loans, and student employment opportunities. This inclusive information provides students and their families with a better understanding of how much they will need to pay the institution.

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Endnote

[1] We dropped cases missing the dependent variable (difficulty with repayment), GPA, plan for graduation, class rank, debt at graduation, support from a scholarship, gender, work status, and parent assistance with a credit card; we treated all other variables as missing. A full table describing the survey questions and treatment of missing cases is available upon request.