



ORIGINAL PAPER

College Student Financial Stress: Are the Kids Alright?

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Abstract An analysis of College students' subjective well-being (SWB) and persistence behavior was conducted with an emphasis on financial stress and individuals' perceptions of financial situation, controlling for a number of health, financial, and demographic factors. Data were taken from a sample of 324 undergraduate students from a major Midwestern university. Results indicated that students experiencing higher reported financial stress scored lower on a measure of SWB, and were also significantly more likely to report difficulty maintaining enrollment or number of academic hours enrolled. Individuals' financial self-efficacy was positively associated with SWB and negatively associated with reductions in enrolled hours, though was not significant as a predictor of student persistence attitudes. Implications for student well-being and healthy campus initiatives are discussed.

Keywords Financial stress · Subjective well-being · College students · Self-efficacy

Introduction

College students are often the subjects of scientific study simply based on low sampling costs and ease of access. In many cases, however, college students represent a unique population of interest, and may serve to provide insights that cannot be gleaned from other sub-populations in society. The current study addresses an issue of growing

concern in the United States that is uniquely associated with college students, that being the issue of college student well-being in light of the various stressors surrounding education financing. The majority of college students can be classified as "emerging adults" and they are faced with an array of complex decisions at a time in their lives when numerous changes are taking place (Arnett 2000; Worthy et al. 2010). It is common for college students to be faced with decisions regarding peer groups, career planning, and overall time management. The difficulties of navigating the complexity of emerging adulthood can be further compounded when financial issues are added to the mix, as is increasingly common for college students today.

Rising costs of obtaining a degree, coupled with flagging support programs have resulted in an increased reliance on borrowing to cover critical education expenses (College Board 2014; Haughwout et al. 2015). At the start of the 21st century, the greatest concerns associated with student financial well-being stemmed from credit card acquisition and use (Bianco and Bosco 2002; Lyons 2004; Manning and Kirshak 2005; Robb 2011; Robb and Sharpe 2009). The CARD Act of 2009¹ was implemented as a means of curbing problematic borrowing behavior among college students, and evidence suggests that possession of credit cards among college students has been in steady decline since then (Mae 2013). Though encouraging from a student welfare perspective, the decline in credit card borrowing was not driven by a reduction in overall student need (i.e., costs of attending college were not reduced).

Available data on student loan use indicate that students may simply have exchanged one form of debt for another (Dai 2013). On its face, this swapping of debt types is not

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¹ Credit Card Accountability Responsibility and Disclosure Act of 2009 (enacted), H. R. 627, 111th Cong., 1st Session.

entirely problematic, particularly if student loans offer lower rates of interest and a more forgiving payment schedule (with options for deferment while students are still enrolled). However, the central concern that policymakers and researchers have raised has to do with the potential short-term and long-term financial impacts of a system that requires significant borrowing for degree attainment. Berman (2015) reported that student loan debt had reached an all-time high at an average of \$35,051² per student in mid-2015, with about 70% of students graduating with some debt. These figures are more concerning when coupled with statistics on declining wages for young college graduates (Mishel et al. 2015) and considering the fact that the Consumer Financial Protection Bureau (CFPB) estimates that roughly one-in-four student loan borrowers are delinquent or in default (CFPB 2015).

Letkiewicz et al. (2014) highlighted that debt may effectively reduce economic stability and flexibility for the next generation. Evidence suggests that high levels of student loan debt can have an impact on degree attainment, school program and career choices, and later borrowing decisions (Haughwout et al. 2015; Rothstein and Rouse 2011). Aside from these more explicit costs, high levels of student borrowing or difficulties with financial management can result in considerable stress (Heckman et al. 2014). The present analysis explores associations between financial stress and subjective well-being among a sample of undergraduate college students, while also exploring aspects related to persistence to degree. Within the context of persistence to degree decisions, we focus on factors related to timing of completion, emphasizing whether or not students are required to reduce hours based on financial factors, as well as emotions related to debt financing.

Review of Literature

Financial Stress and College Students

Financial stress has been broadly defined as difficulty in meeting one's financial obligations, with given economic behaviors being best understood in light of individuals' attitudes and beliefs related to resource availability and management (Aldana and Liljenquist 1998; Kim et al. 2003; Northern et al. 2010). Stress is by no means a new concept in college student research. Stress has been recognized as a major cause of academic difficulty according to the American College Health Association (ACHA) (Wong et al. 2006). However, an increasing number of studies have turned their attention to stress related to financial

factors in particular (Heckman et al. 2014; Letkiewicz et al. 2014; Robb et al. 2011; Trombitas 2012). Findings from these studies indicated that a high percentage of college students are dealing with financial stress, finances as a topic area are a leading cause of stress, and that financial stress may ultimately have adverse impacts on student persistence to degree. Heckman et al. (2014) identified financial stress as a widespread issue based on data from the 2010 Ohio Student Financial Wellness Survey, as roughly 71% of respondents reported feeling stress from personal finances. Additionally, it was noted that differentials in peer resources and expectations regarding loan debt post-graduation were critical stressors, whereas students with greater self-efficacy and optimism for the future fared better with regard to reported stress (Heckman et al. 2014).

Evidence suggests that financial factors rank quite high as stress factors for college students (Aselton 2012; Trombitas 2012). In ranking stressors, students identified the need to repay loans, overall costs of education, borrowing to fund college, and concerns about employment after college among their top five (Trombitas 2012). Among a small sample of students coping with depression, Aselton (2012) noted that financial factors were a major source of stress, as students articulated concerns about their family's ability to cover the costs of college and career options after graduation. Given that financial stress is fairly ubiquitous among college students, Northern et al. (2010) developed a scale measure of college student financial stress, known as the Financial Stress Scale-College Version (FSS-CV), to assist in exploring financial stress and its impacts. The FSS-CV is a comprehensive measure of financial stress that consists of numerous factors, including being behind on payments, having significant debt, and other factors related to personal finance. In total, 22 items were assessed with regard to stressful events revolving around students' finances, with the authors ultimately recommending a 13-item scale.

Self-efficacy is considered to be an important factor in understanding how people manage stress and make decisions (Bandura 1977; Folkman 1984). Previous findings indicated that higher levels of self-efficacy were related to positive physical and psychological health outcomes (Bandura 1982). In previous studies of financial behavior, results have generally supported the notion that higher self-efficacy was associated with better behaviors or greater financial well-being, *ceteris paribus* (Grable and Joo 2006; Gutter and Copur 2011; Lapp 2010).

Persistence to Degree

Research has consistently identified associations between financial stressors and student degree persistence behavior (Joo et al. 2008; Letkiewicz et al. 2014; Robb et al. 2011). Robb et al. (2011) utilized self-reported data on

² All figures in US Dollars.

student debt levels (distinction was made between student loan debt and credit card debt levels) to explore reductions in credit hours, drop out behavior, and any difficulty persisting based on the psychological burden of their debt. Building on Tinto's (1975, 1993) interactionalist model, Robb et al. (2011) indicated strong impacts of personal financial factors, as debt levels were strongly related to the selected persistence behaviors. Letkiewicz et al. (2014) improved on this earlier work by the incorporation of a direct measure of student financial stress in predicting students estimated time-to-degree (4-years or more). Consistent with previous studies, high debt levels were associated with longer expected time-to-degree, as was higher reported financial stress.

Student Well-Being

Much of the research on student financial stress is driven by an underlying concern for overall student welfare, or well-being. Studies of stress from the broader population have identified a negative association between stress and health, with higher levels of stress being associated with physical ailments and mood fluctuations (DeLongis et al. 1988). The available research on student financial stress raises concerns across a number of life domains, including physical (Drentea and Lavrakas 2000; Nelson et al. 2008; Pearlin et al. 2005), psychological (Drentea 2000; Pearlin et al. 2005; Westefeld et al. 2005), academic (Ross et al. 2006), and financial health (Brown et al. 2014; Haughwout et al. 2015). Together, these findings raise critical concerns over the potential impact of financial stress on student well-being.

Subjective well-being (SWB) is a construct that attempts to measure individual's happiness through cognitive and affective dimensions (Diener 2000). Critical dimensions to measures of SWB include, but are not limited to, income, social standing or peer comparisons, freedom to make decisions, and individualism, though this is a somewhat simplified view of a complex construct with decades of work behind it (Diener et al. 1999). Similar to Diener et al. (1995), this approach reflects a general recognition that a variable will impact SWB if said variable influences one's ability to achieve their goals (Emmons 1986). Research from other domains has indicated a negative association between stress and SWB. For example, research from the health domain on couples struggling with infertility issues suggested that the stress associated with infertility was associated with lower scores on a measure of SWB (Andrews et al. 1991). In light of these findings, it is reasonable to consider where financial stressors might fit within a predictive model of SWB for a college student population.

Summary and Purpose

Financial stress appears to be an important factor in student well-being, as previous studies have linked financial stress to relevant physical, social, and psychological outcomes. For the present study, SWB is explored with student financial stress as a component of interest in the predictive model. In addition, the role of student financial stress [as measured by the stress scale developed by Northern et al. (2010)] in student persistence to degree behaviors is analyzed. This should serve two purposes. First, though prior analyses of persistence behavior have acknowledged the role of financial stress, the scale measure developed by Northern et al. (2010) presents a more comprehensive metric relative to those other measures. Second, the present study can serve to add to the knowledge base regarding the reliability and validity of the FSS-CV. Three hypotheses were posited based on the existing literature:

H₁ SWB will be lower for students reporting higher scores on the measure of financial stress, all else equal.

H₂ Students scoring higher on the measure of financial stress will be more likely to report reductions of credit hours for financial reasons, all else equal.

H₃ Students scoring higher on the measure of financial stress will be more likely to indicate that the burden associated with their student loan debt will make it difficult to complete their degree, all else equal.

Methodology

Conceptual Approach

Subjective Well Being

The present analysis views subjective well-being (SWB) as a critical measure of college student life satisfaction, as SWB accounts for individuals' perceptions of living conditions in gauging overall life satisfaction (Diener 2000). The available literature on SWB relative to income is extensive (see Diener and Biswas-Diener 2002; Diener et al. 1995), with general indications of strong, though complex, associations between the two. Material wealth (with income often serving as a proxy) can reasonably be considered important within a framework where individuals' ability to achieve their goals is critical to SWB (Emmons 1986). As articulated by Diener et al. (1995, pg. 851), "income confers advantages in terms of basic physical needs, security, and the actualization of one's abilities (due to the greater freedom of action afforded by increased income)." The present

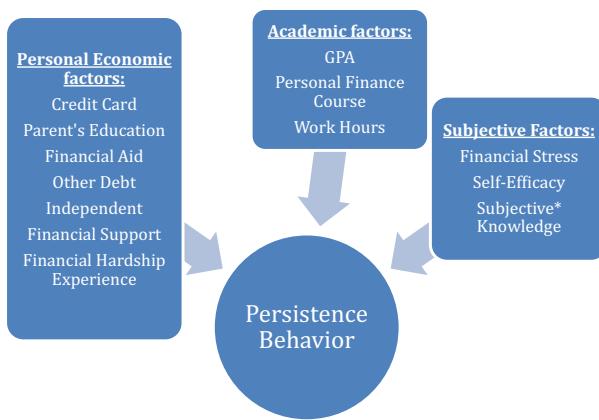


Fig. 1 Conceptual model of persistence behavior. *Considered as a component of perceived emotional burden of accumulated debt only

analysis operationalizes SWB in light of this view, though emphasis is placed on the presence of financial stressors that might serve to limit one's options.

Persistence to Degree

Further analyses are concerned with the role of stress factors in a model of student persistence behavior. An integrative persistence model is employed to explain two distinct outcomes, reduction of student credit hours and perceived difficulty completing a degree based on debt burden. Whereas much of the earlier research on persistence to degree behavior considered the issue from a sociological perspective or an economic perspective, an integrative approach employs both sociological and economic factors (Corder et al. 2005; Ishitani and DesJardins 2002; John et al. 2005; Letkiewicz et al. 2014; Perna 1998; Robb et al. 2011). These studies collectively suggest that both sociological and economic aspects provide unique, valuable contributions to our understanding of persistence decisions. For the present model, persistence behavior and attitudes are theorized to be associated with personal economic factors (such as credit card access, and parent's education), academic factors (e.g., GPA), and subjective assessments of one's financial situation (e.g., stress scale score, and self-efficacy). A number of demographic characteristics are included as control variables of interest. The conceptual model of persistence behavior is presented in Fig. 1.

Data and Sample

Data were collected from a sample of students at a major Midwestern university during the spring 2014 semester. The undergraduate course catalogue for the university was screened to extract those courses at the 200, 300, 400 and 500 levels (with the intention of oversampling from slightly older

student cohorts that would have had time to accumulate some student loan debt). From the available course listings, a sample of 10 courses was randomly selected from each level (all spring courses for the 200–500 level were eligible for inclusion). Through coordinated efforts with the university registrar, class rosters were obtained for those randomly selected courses. Students enrolled in each of the selected courses were invited via email to participate in a brief online survey dealing with financial well-being and money management issues. A total of 2654 students were invited to participate in the survey, and survey responses were received for 476 of those invited (a response rate of roughly 18%). Data cleaning resulted in a final sample of 324 (12%) complete surveys. Descriptive statistics for the complete sample are provided in Table 1.

Dependent Variables

Subjective Well Being

SWB was measured using the Satisfaction with Life Scale (Pavot and Diener 1993), which consists of five separate statements. Each statement was scored on a 5-point Likert-type scale, with 1 indicating "Strongly disagree" and 5 indicating "Strongly agree." The statements included in the assessment were as follows: (1) in most ways my life is close to my ideal; (2) the conditions of my life are excellent; (3) I am satisfied with my life; (4) so far I have gotten the important things that I want in life; and (5) if I could live my life over, I would change almost nothing. The SWB statements were structured such that higher scores consistently indicated greater levels of subjective well-being. The SWB scale demonstrated good reliability with a Cronbach's alpha of 0.875. Possible scores ranged from 5 to 25 on the SWB scale (mean = 17.4).

Degree Progress

Students were asked two questions specifically related to their progress towards a degree. The first question asked, "Have you ever reduced the number of credit hours you were taking so that you could work more hours for any of the following reasons," with response options indicating a series of financial needs such as living expenses, and paying off different forms of debt. Responses to this question were collapsed to indicate that students either reduced hours for financial reasons (coded as "1") or did not reduce hours for any reason (coded as "0"). Roughly 30% of the sample indicated a reduction in credit hours based on the provided reasons. A second question was included concerning whether students had reported ever dropping out from school, but given that <5% of the sample reported this behavior, the overall model consistency was questionable for this behavior. As a result, considerations of ever dropped-out were not included in the present analysis.

Table 1 Descriptive statistics (n=324)

| Variable | Sample frequency (%) | Mean (SD) |
|--|----------------------|--------------|
| <i>Dependent variables</i> | | |
| Subjective well-being (5–25) | — | 17.4 (4.29) |
| Ever reduced credit hours (0/1) | 96 (29.6%) | — |
| Emotional burden associated with debt (0/1) ^a | 88 (40.8%) | — |
| <i>Independent variables</i> | | |
| Subjective factors | | |
| Financial stress scale (14–56) | | 25.7 (8.76) |
| Financial self-efficacy (4–20) | | 15.66 (2.64) |
| Subjective financial knowledge (1–7) | | 4.41 (1.12) |
| Academic factors | | |
| GPA >3.0 (0/1) | 227 (70.1%) | — |
| Personal finance course (0/1) | 162 (50%) | — |
| Employment and hours worked | | |
| Not employed | 121 (37.35%) | — |
| Employed, 16 h/week or less | 113 (34.88%) | — |
| Employed, between 17 and 31 h/week | 76 (23.46%) | — |
| Employed, 32 h/week or more | 14 (4.32%) | — |
| Health and hardship factors | | |
| Self-reported health score (1–5) | — | 4.12 (0.81) |
| Any hardship experienced (0/1) | 97 (29.94%) | — |
| Financial factors | | |
| Credit card holder ownership | | |
| Have card in own name | 126 (38.89%) | — |
| Have access to card (owned by other) | 48 (14.81%) | — |
| No card | 150 (46.30%) | — |
| Financial aid (0/1) | 238 (73.5%) | — |
| Amount owed in student aid debt ^a | | |
| No debt | 33 (15.35%) | — |
| <\$20,000 | 114 (53.02%) | — |
| ≥\$20,000 | 68 (31.63%) | — |
| Other personal debt (0/1) | 48 (14.8%) | — |
| Independent | 86 (26.5%) | — |
| Financial support from family | 235 (72.5%) | — |
| Financial restrictions (1–5) ^b | — | 3.43 (1.35) |
| <i>Demographic characteristics</i> | | |
| Male | 112 (34.6%) | — |
| White | 281 (86.7%) | — |
| Year in school | | |
| Freshmen | 39 (12.0%) | — |
| Sophomore | 84 (25.9%) | — |
| Junior | 109 (33.6%) | — |
| Senior | 92 (28.4%) | — |
| Parent's income | | |
| <\$25,000 | 13 (4.0%) | — |
| Between 25,000 and 50,000 | 38 (11.7%) | — |
| Between 50,000 and 100,000 | 100 (30.9%) | — |
| >\$100,000 | 108 (33.3%) | — |
| Don't know | 65 (20.1%) | — |
| Parent's education | | |
| High school or less | 35 (10.8%) | — |
| Some college | 54 (16.7%) | — |

Table 1 (continued)

| Variable | Sample frequency (%) | Mean (SD) |
|-----------------|----------------------|-----------|
| College or more | 235 (72.5%) | — |

^aDenotes reduced sample due to this question only being asked of those whom reported receiving some student financial aid

^bDenotes reduced sample due to six missing responses to the question

Table 2 Item analyses of the financial stress scale-college version (FSS-CV)

| Question | M (SD) |
|---|--------------|
| Being behind on payments* | 1.53 (0.823) |
| Having a low credit score* | 1.47 (0.815) |
| Being contacted by creditors | 1.18 (0.557) |
| Having to declare bankruptcy | 1.03 (0.240) |
| Not having any emergency money* | 1.93 (0.993) |
| Living paycheck to paycheck* | 2.12 (1.099) |
| Getting something repossessed | 1.04 (0.264) |
| Being in a job where work isn't steady/predictable* | 1.58 (0.892) |
| Barely making enough money to cover expenses* | 2.10 (1.040) |
| Not making enough money to be able to cover unexpected expenses* | 2.13 (1.053) |
| Worrying about having enough money to retire* | 1.66 (0.884) |
| Knowing you make less money than most of your peers* | 1.77 (0.974) |
| Having large debt* | 1.93 (1.085) |
| Having loans with high interest rates* | 1.87 (1.017) |
| Being turned down for a loan | 1.38 (0.772) |
| Christmas/holiday expenses* | 2.13 (0.936) |
| Childcare expenses | 1.10 (0.436) |
| Losing/quitting a job | 1.27 (0.599) |
| Investments decrease in value | 1.17 (0.531) |
| Having to borrow money from family/friends/financial institution* | 1.97 (0.963) |
| Service being turned off due to being behind on payments | 1.17 (0.540) |
| Paying taxes* | 1.53 (0.739) |

*Indicates variable that was retained for the final FSS-CV scale

The third question was restricted to those students who reported receiving some form of financial aid ($n=215$), and asked, “How likely is it that the emotional burden associated with receiving and repaying your student financial aid will make it difficult for you to complete your college degree?” Responses were scored on a 5-point Likert-type scale with 1 indicating “very likely” and 5 indicating “not at all likely.” For the emotional burden measure, respondents were broken into two separate groups, those indicating some degree of a burden, and those not indicating any burden.³ Just over 40% of the respondents indicated that their debt burden made it

somewhat likely to very likely that they might have difficulty with degree completion.

Independent Variables

Financial Stress

The Financial Stress Scale-College Version (FSS-CV) (Northern et al. 2010) was used as our measure of financial stress. For each of the items included in the scale, respondents were asked to identify how often they had thought about the listed financial events, using a scale from 1 (never) to 4 (all of the time). Survey respondents received the full 22 item scale tested by Northern et al. (2010), and item analysis suggested a similar final set of items for analysis, though “worrying about having enough money to retire” was included based on an initial review of item sensitivity. Item analysis findings are presented in Table 2. The

³ Alternative specifications were tested with regard to this question. In one case the measure of emotional burden was treated as a continuous scale and OLS was employed. This variable was also analyzed using cumulative logit due to concerns over the safety of assuming a continuous nature to a limited dependent variable. Each of the approaches yielded similar results, thus only the results of the logistic regression were included.

final 14-item scale presented a possible stress range of 14 (very low financial stress) to 56 (very high financial stress), and the items demonstrated high reliability (Cronbach's alpha=0.897).

Self-Efficacy

The survey included a series of four questions designed to assess individuals' beliefs regarding their own ability to perform critical financial behaviors within the next few days. These items were scored on a 5-point Likert-type scale, ranging from "strongly disagree (1)" to "strongly agree (5)." Specifically, individuals were questioned regarding their confidence in beginning a new budget plan, changing their spending habits, following a weekly budget, and saving some money on a monthly basis. These items were combined to generate a composite measure of student financial self-efficacy, with a possible range of 4 (very low self-efficacy) to 20 (very high self-efficacy). The final scale had a Cronbach's alpha score of 0.736 indicating that the items included are closely related.

Subjective Financial Knowledge

In considering how students might perceive their student loan debt burden, self-assessed financial knowledge was considered as a factor of interest. Subjective financial knowledge was assessed with a single item measure. Students were specifically asked, "On a scale of 1–7, where 1 means very low and 7 means very high, how would you assess your overall financial knowledge?"

Academic Factors

Students provided self-reported grade point average in the survey, with the following possible categorical responses: 0.00–1.00, 1.01–2.00, 2.01–3.00, 3.01–4.00, or >4.00. For the analyses, GPA information was ultimately coded as a dichotomous variable, with 1 indicating >3.00 (70%) and 0 indicating 3.0 or lower (30%). Information on whether students had ever taken a course on personal finance was also collected, with possible responses indicating courses received at the middle school, high school, college, or employer levels. Responses were collapsed to create a binary variable indicating whether students had ever taken a course (1) or not (0). The sample was equally divided between those with course experience and those without. Employment status was controlled for as a potential factor impacting students' academic lives, and students were categorized based on the average number of hours the reported working outside of school in a given week. Responses distinguished those students who reported not being employed regularly (0 h per week), those working 16 h or less, those

working between 17 and 31 h, and those working 32 h or more in an average week. Roughly 37% of the sample reported not working regularly, with the next highest response rate being among those working <17 h per week (35%). Only about 4.3% of the sample indicated working >31 h a week.

Self-Reported Health and Hardship

The survey included a single item measure of personal health, as respondents were asked to rate their overall health on a scale from 1 (very poor) to 5 (very good). Overall self-reported health for the sample was quite good, with a mean response of 4.12. In addition to the health measure, aspects of personal physical, psychological, and financial health were addressed by a question asking if individuals had dealt with any of the following problems within the last year: a recent disability, loss of employment, reduction of income from employment, or the development of a serious health issue. Each of the listed events was individually scored as either 0 (no occurrence) or 1 (occurred within past 12 months). For the purpose of analysis, individuals were identified as having experienced a hardship or not, with roughly (30%) experiencing one of the above challenges in the past year.

Financial Aspects

Students were asked whether or not they had a credit card in their own name (39%) or had access to a card (in another person's name; 15%). While access to credit was a primary factor of interest for the present analysis, there could be critical differences between those with access to cards as compared to those having cards in their own name. As a result, students were grouped into three mutually exclusive credit card categories: (1) have their own credit card, (2) have access to a credit card (in another person's name), and (3) no access to a credit card. Students were similarly differentiated based on whether or not they received any form of financial aid (73.5%; within this sample, self-reported amounts were recorded), and whether they reported any other consumer debt for which they were the responsible party (15%). Students were further classified (0/1) based on their dependent status, as student who were no longer claimed as dependents on their parents' tax return were classified as financially independent (26.5%). A follow-up question asked students whether they received financial support from family.

Additionally, students were asked the degree to which they agreed with the statement, "I feel that finances have restricted my ability to do all the things that I want to do in college." Responses were scored on a five-point,

Table 3 OLS regression results for model predicting subjective well-being (n=318)

| Variable | Estimate | SE |
|--|-----------|-------|
| Male | -0.082 | 0.453 |
| White | 0.842 | 0.616 |
| Parent's income (between 50,000 and 100,000) | | |
| <\$25,000 | 1.145 | 1.099 |
| Between 25,000 and 50,000 | -0.427 | 0.709 |
| >\$100,000 | -0.220 | 0.551 |
| Don't know | 0.685 | 0.602 |
| Employment status (not employed) | | |
| 16 h or less | 0.271 | 0.485 |
| Between 17 and 31 h | -0.236 | 0.582 |
| 32 h or more | -0.250 | 1.046 |
| GPA >3.0 | 0.552 | 0.498 |
| Year in school (freshman) | | |
| Sophomore | -0.528 | 0.713 |
| Junior | 0.149 | 0.709 |
| Senior | -0.371 | 0.739 |
| Financially independent | -0.944* | 0.498 |
| Credit card ownership (no card) | | |
| Own card | 0.954* | 0.461 |
| Access to card (other owner) | 1.433* | 0.642 |
| Financial aid | -0.644 | 0.533 |
| Stress scale score | -0.078** | 0.031 |
| Feel that finances restrict options | -0.672*** | 0.177 |
| Health | 1.164*** | 0.276 |
| Self-efficacy | 0.203** | 0.079 |
| Intercept | 12.89*** | 2.100 |
| Adjusted R-square | 0.304*** | |

*<0.05; **<0.01; ***<0.001

Likert-type scale where one means that students have almost never felt that way and five indicates that students have almost always felt that way.

Additional Demographic Controls

Students provided additional information regarding their gender, ethnicity (White or other), and their year in school (freshmen, sophomore, junior, senior). A majority of the sample was female (65%) and White (87%), and both of these numbers exceeded the population values for these characteristics slightly. As intended, the selected courses yielded a sample with greater representation from those in their junior (33.6%) or senior (28.4%) year relative to freshmen (12%). In general, the sample came from well-educated households, as 72.5% reported that at least one of their parents held a college degree or more. Two parental controls were included in survey to better understand

students' socioeconomic status. The parental control measures were parental income (as a categorical measure) and the highest level of educational attainment for either parent (high school or less, some college, college or more).

Analysis and Results

SWB

Due to the continuous nature of the measure, SWB was analyzed using Ordinary Least Squares regression controlling for personal demographic, financial, academic, and subjective factors (Table 3). The model was significant [$F(19, 298)=8.38, p<.0001$], explaining 30% of the variance in SWB. In looking at the demographic controls, factors such as parents' income, GPA, race and gender were not significantly associated with SWB scores. Identifying as financially independent was associated with lower scores on the SWB measure. In addition, access and possession of credit cards were both positively associated with SWB score. All four subjective measures were highly significant. Financial stress score and feelings of being restricted were negatively associated with SWB, whereas self-efficacy and self-reported health scores were positively associated with SWB.

Reduced Hours

Logistic regression was employed to explore the likelihood that a student reduced their credit hours in school for financial reasons, and roughly 30% of the sample reported having to reduce credit hours. Based on the conceptual model outlined in Fig. 1, factors were added to the model in stages so that unique effects of each factor could be analyzed (Table 4). Whereas earlier studies have provided more detail regarding associations between personal demographic and financial factors on persistence, fewer studies have explored the financial factors and subjective factors in detail. Stage one included basic demographic and academic factors, stage two incorporated personal financial factors, stage three introduced a measure of hardship and subjective aspects. The third model (stage 3) yielded a pseudo R-square of 0.353, and the non-significant Hosmer Leme-show ($X^2=4.29$) test indicated acceptable model fit.

A few of the demographic controls were significantly related to reduction in hours, including parents' education and students' year in school. Relative to students whose parents held a high school diploma, those whose parents had some college experience were more likely to reduce credit hours (by roughly 48%). Compared with freshmen, juniors were 374% more likely to reduce hours, whereas seniors and sophomores were not statistically different. Only the employment factor was significant from

Table 4 Logistic regression results for ever reduced credit hours (n = 324)

| Variable | Model 1 | | Model 2 | | Model 3 | |
|---|--------------------|-------|--------------------|------|-----------|-------|
| | Estimate | Odds | Estimate | Odds | Estimate | Odds |
| Male | 0.084 | 1.09 | 0.009 | 1.01 | 0.592 | 1.81 |
| White | 0.112 | 1.12 | 0.050 | 1.05 | -0.124 | 0.88 |
| Parent's education (high school or less) | | | | | | |
| Some college | 0.932 [†] | 2.54 | 1.263* | 3.54 | 1.760** | 5.81 |
| College or more | 0.306 | 1.36 | 0.843 [†] | 2.32 | 1.094 | 2.99 |
| Employment status (no work) | | | | | | |
| 16 h or less | 0.373 | 1.45 | 0.245 | 1.28 | 0.497 | 1.64 |
| Between 17 and 31 h | 1.386*** | 3.99 | 1.278*** | 3.59 | 1.271** | 3.57 |
| 32 h or more | 2.599*** | 13.46 | 2.146** | 8.55 | 2.968*** | 19.46 |
| GPA >3.0 | -0.603* | 0.55 | -0.427 | 0.65 | 0.273 | 1.31 |
| Course in personal finance | -0.017 | 0.98 | 0.120 | 1.13 | -0.358 | 1.26 |
| Year in school (freshman) | | | | | | |
| Sophomore | 0.555 | 1.74 | 0.637 | 1.89 | 0.942 | 2.56 |
| Junior | 1.118* | 3.06 | 1.385* | 3.99 | 1.556* | 4.74 |
| Senior | 0.728 | 2.07 | 0.965 | 2.63 | 0.926 | 2.52 |
| Financially independent | - | - | 0.468 | 1.59 | -0.003 | 0.99 |
| Financial support from family | - | - | -0.188 | 0.83 | -0.132 | 0.88 |
| Credit card ownership (none) | | | | | | |
| Own card | - | - | -1.180*** | 0.31 | -1.379*** | 0.25 |
| Access to card (other) | - | - | -0.933* | 0.39 | -1.075* | 0.34 |
| Financial aid | - | - | 0.615 | 1.85 | -0.016 | 0.98 |
| Other debt | - | - | 0.797* | 2.22 | 0.097 | 1.10 |
| No hardship experienced in past 12 months | - | - | - | - | -1.105** | 0.33 |
| Stress scale score | - | - | - | - | 0.131*** | 1.14 |
| Self-efficacy | - | - | - | - | -0.020*** | 0.98 |
| Intercept | -2.268** | | -3.018*** | | -5.820*** | |
| X ² | 54.37*** | | 81.29*** | | 140.88*** | |
| Pseudo R-square | 0.154 | | 0.222 | | 0.353 | |
| Hosmer and Lemeshow | 5.011 | | 6.010 | | 4.289 | |

[†]<0.10; *<0.05; **<0.01; ***<0.001

the chosen academic controls. Compared to those students who reported not working, those working between 17 and 32 h per week were 257% more likely to reduce credit hours whereas those working >32 h per week were 1845% more likely to reduce their credit hours. The majority of the financial factors included in the model were not significantly associated with reducing credit hours. The exception was having a credit card. Both students who reported having access to a card held by another individual or possessing their own card were significantly less likely to report reducing credit hours (66 and 75%, respectively).

Looking at the critical measure of interest, financial stress, the results indicated that the likelihood of reducing hours increased roughly 14% for each unit increase on the FSS-CV. Whether students had experienced any hardship related to health or finances in the past year was negatively

associated with reducing credit hours. Students reporting no hardship were 67% less likely to reduce hours relative to those reporting one or more of the hardship experiences outlined in the survey. Financial self-efficacy was also significant in Model 3, as higher scores on the self-efficacy measure were associated with a lower probability of reducing hours, *ceteris paribus*.

Perceived Burden

A similar (3-stage) approach was employed to explore a reduced sample (n = 215) of financial aid recipients based on whether or not they perceived the debt burden associated with their financial aid as problematic for degree completion (Table 5). The third model had a pseudo R-square of 0.292, with a non-significant Hosmer and Lemeshow

Table 5 Logistic regression results for burden of student debt (n=215)

| Variable | Model 1 | | Model 2 | | Model 3 | |
|---|---------------------|------|---------------------|------|---------------------|------|
| | Estimate | Odds | Estimate | Odds | Estimate | Odds |
| Male | -0.394 | 0.67 | -0.481 | 0.62 | -0.218 | 0.81 |
| White | -0.121 | 0.89 | -0.363 | 0.29 | -0.326 | 0.72 |
| Parent's education (high school or less) | | | | | | |
| Some college | -0.615 | 0.54 | -0.700 | 0.49 | -0.595 | 0.55 |
| College or more | -1.140** | 0.32 | -1.016* | 0.35 | -1.016* | 0.36 |
| Employment status (no work) | | | | | | |
| 16 h or less | -0.608 [†] | 0.54 | -0.994* | 0.37 | -0.778 [†] | 0.46 |
| Between 17 and 31 h | -0.443 | 0.64 | -0.709 | 0.49 | -0.849 [†] | 0.43 |
| 32 h or more | -0.894 | 0.41 | -1.371 [†] | 0.25 | -1.193 | 0.30 |
| GPA >3.0 | -0.902** | 0.46 | -0.779* | 0.46 | -0.626 | 0.54 |
| Course in personal finance | 0.018 | 1.02 | 0.292 | 1.34 | 0.252 | 1.29 |
| Year in school (freshman) | | | | | | |
| Sophomore | 0.289 | 1.34 | 0.009 | 1.01 | 0.059 | 1.06 |
| Junior | 0.109 | 1.12 | -0.254 | 0.78 | -0.219 | 0.80 |
| Senior | -0.128 | 0.88 | -0.453 | 0.64 | -0.548 | 0.58 |
| Financially independent | - | - | -0.349 | 0.71 | -0.762 [†] | 0.47 |
| Financial support from family | - | - | -0.098 | 0.91 | 0.037 | 1.04 |
| Financial aid debt amount (\$0) | | | | | | |
| <\$20,000 | - | - | 1.196* | 3.31 | 0.484 | 1.62 |
| ≥\$20,000 | - | - | 1.512* | 4.54 | 0.419 | 1.52 |
| Credit card ownership (none) | | | | | | |
| Own card | - | - | -0.393* | 0.68 | -0.343 | 0.71 |
| Access to card (other) | - | - | -1.237* | 0.29 | -1.491* | 0.23 |
| Other debt | - | - | -0.165 | 0.85 | -0.222 | 0.80 |
| Subjective financial knowledge | - | - | -0.488* | 0.61 | -0.445** | 0.64 |
| No hardship experienced in past 12 months | - | - | - | - | -0.220 | 0.80 |
| Stress scale score | - | - | - | - | 0.114*** | 1.12 |
| Self-efficacy | - | - | - | - | 0.024 | 1.02 |
| Intercept | 1.633* | | 3.595** | | 0.462 | |
| X ² | 22.76* | | 48.37*** | | 74.35*** | |
| Pseudo R-square | 0.091 | | 0.202 | | 0.292 | |
| Hosmer and Lemeshow | 8.571 | | 5.260 | | 8.909 | |

[†]<0.10; *<0.05; **<0.01; ***<0.001

test of goodness of fit ($\chi^2=8.91$). Among the demographic controls, only parent's education was significantly associated with perceived burden. Students with at least one parent with a college degree were 75% less likely to report feeling burdened when compared with those who reported the highest parental education levels as high school or less. For the academic factors selected, only employment behavior was significant in the third model, as providing some work was associated with a lower likelihood of feeling burdened. Specifically, compared to individuals who did not work any hours regularly, those working between 1 and 16 h or between 17 and 31 h were 54 and 57% less likely to report feeling burdened by their loan debt.

Among the personal financial factors included in the model, credit card access, dependent status, and subjective

financial knowledge were all significant predictors of feeling burdened. Financially independent students were 53% less likely to indicate feeling burdened. Compared to students who did not report holding or having access to a credit card, those with access to cards belonging to someone else were 77% less likely to indicate feeling burdened. A negative association was identified between subjective financial knowledge and likelihood of feeling burdened, with increasingly confident students being less likely to perceive their debt as burdensome.

For the third model, hardship factors, stress, and self-efficacy were added to the predictive model of perceived burden. Of these predictors, only the stress score was found to be a significant predictor of perceived debt burden for students. Likelihood of feeling burdened was positively associated

with stress scale score, with a 12% increase in likelihood of feeling burdened for each unit increase in stress.

Discussion

Many of today's college students operate in a complicated financial environment, as rising costs associated with degree attainment necessitate deft budget maneuvering, reliance on borrowing from multiple sources, and balancing time between social, academic, and employment activities. The present study explored SWB and student progress toward degree in a series of predictive models that ultimately emphasized financial stress and financial self-efficacy, controlling for a number of factors.

SWB

The OLS model accounted for roughly one-third of the variance in SWB, with subjective factors related to health and finances dominating the model. Findings indicated that financial stress, financial self-efficacy, feeling restricted financially, and self-reported health were all significant predictors of SWB. Hypothesis 1 was supported as students reporting higher scores on the FSS-CV indicated lower SWB, all else being equal. This suggested that having financial difficulties may have a detrimental impact on individuals' perceptions of their overall life, though the current data do not allow for a clear causal argument to be made. It is equally possible that individuals who report lower SWB have other factors driving their life satisfaction, with those factors having an adverse impact on financial behavior. The opposite effect was noted for a simple scale of financial self-efficacy, as those feeling more control over their financial behavior scored significantly higher on the SWB measure.

The general findings were consistent with the notion that SWB can be adversely impacted by factors that reduce individuals' feeling of control or ability to achieve their goals (Emmons 1986). These results build upon a growing literature that highlights problematic impacts of increasing financial stress among college students (Heckman et al. 2014; Joo et al. 2008; Letkiewicz et al. 2014; Robb et al. 2011). The FSS-CV item analysis (Table 2) also provided some insight with regard to which factors or stressors might be most salient to an undergraduate college student population. Specifically, the item analysis for the present sample indicated that many undergraduates face specific concerns regarding available resources (living paycheck to paycheck, barely enough to cover expenses, holiday expenses), lack of a safety net (not having emergency money, not enough to cover unexpected expenses), and borrowing/debt decisions (having large debt, loans with high interest, having to borrow money). The fact that the item analysis from the

present sample aligned well with those data reported by Northern et al. (2010) in their validation of the FSS-CV suggests that these may be fairly common problem areas for college students in general.

Degree Progress, Reduced Hours

Turning to the analyses of student degree progress, it is important to highlight that prior studies have indicated that financial factors play an increasingly critical role in students' persistence decisions (Letkiewicz et al. 2014; Robb et al. 2011). The present results build on these earlier analyses through the incorporation of the FSS-CV, a comprehensive measure of financial stress that consists of numerous factors, in separate models of student behavior and attitudes related to persistence to degree. In an integrative model of persistence behavior (including personal economic, academic, and subjective factors), aspects from each of the selected factors had some impact on the outcome of reducing credit hours. Of greatest interest to the present study was the association between scores on the stress scale and observable behavior (reduced hours). The data ultimately provided support for Hypothesis 2, as students' experience of various financial stressors did appear to be related to hours enrolled, all else equal. As noted previously, many of the stress measures were associated with aspects of resource adequacy, and it would be reasonable for more vulnerable students to reduce their credit hours to meet certain financial obligations.

An opposite association was noted in looking at the self-efficacy score data, as increasing confidence in one's ability to manage financial decisions was inversely related to reducing hours. Unfortunately, the present data are not able to clarify whether that greater confidence keeps people from feeling the need to reduce hours, or if it is more a result of the fact that they have not been in a situation that might require a reduction of hours.

Possession of or access to a credit card were associated with a lower likelihood of reducing credit hours. It is unclear from the present data whether this is the result of cards serving as a buffer against financial hardship (e.g., students with cards may have access to readily available credit in the event of a financial emergency) or whether this finding is being driven by some other unobserved factor. It is certainly possible that cardholders and those that have access to cards differ from non-holders in some systematic way. Credit card dynamics (i.e., having cards at the limit or amount owed) were not explored in the present analysis due to the fact that roughly half of the sample did not have access to a credit card. Looking at student perceptions of their debt burden, only those students who reported having access to a credit card were less likely to report feeling burdened, suggesting some differential with regard to financial experiences and stress.

Interestingly, students from households where at least one parent had attended some college (no college completion) were more likely to reduce credit hours. It was difficult to discern why this might be the case from the present data. This result may be related to the fact that students from less advantaged households (often the case if parents' education is a high school diploma or less) may receive additional assistance or benefits that do not have to be repaid (needs-based grants or scholarships). Students deemed to have adequate resources may find themselves more likely to have to spend more time outside of school earning money to afford staying enrolled.

Degree Progress, Burden of Debt

For the model of perceived burden of student loan debt, a similar integrative approach was applied, and each of the selected factors contributed to the final model. As might be expected, far more of the subjective measures were significant for the model that emphasized students' perceptions of their debt situation. Individuals indicating higher levels of stress were significantly more likely to report feeling that the burden of their debt would make completing their degree difficult, providing support for Hypothesis 3. The opposite effect was noted among those with higher subjective financial knowledge (less burdened).

Subjective financial knowledge, which essentially measures students' confidence in their own financial knowledge, was an interesting factor. This is particularly interesting in light of the fact that individuals' objective knowledge is often a focal point for campus initiatives, as efforts to improve student welfare often rely on financial education as a core program component. There is certainly a wealth of literature indicating that greater objective knowledge is associated with more favorable financial behavior (Hilgert et al. 2003; Lusardi and Mitchell 2006; Robb 2011; Robb and Woodyard 2011; Xiao et al. 2011), thus it seems reasonable to view improvement of objective financial knowledge as a worthy goal. However, consideration should be given to just how much of an impact incremental improvements in objective knowledge might have on their own. The present results indicated that improving students' confidence in their knowledge base, here explored through subjective financial knowledge and self-efficacy, may be a reasonable goal to consider, as these factors were important predictors of both student persistence attitudes and SWB.

Strengths and Limitations

The present paper provided a unique approach to SWB analysis and degree progress, incorporating a comprehensive measure of student financial stress to gauge financial limitations. Consideration of personal financial stressors

provided insights into well-being and provided an improved picture of student health and degree progress behaviors. Many national surveys lack such a comprehensive measure of financial strain, and thus may leave out a critical factor in assessments of student well-being. A unique approach to student persistence from both behavioral and attitudinal perspectives was applied, building on the previous work in this area. The present study highlights two unique aspects of persistence decisions, noting that there are dimensions of resource adequacy (i.e., money, number of hours in a day to complete school work, employment, social activities, etc.) as well as dimensions of psychological comfort (i.e., whether a financial strain is perceived from borrowing to finance one's education).

A number of critical limitations should be acknowledged. First, analyses were based on cross-sectional data, limiting the discussion to observed associations. Second, the data were representative of a single university, and some sample bias was evident (greater proportion of White and female students). As a result, generalizability was suspect. An additional limitation associated with the data collection has to do with the fact that loan data are self-reported and household dynamics cannot be explored in more detail. For example, the present survey does not question whether loans have been taken out by parents on a students' behalf (whereby the burden may be shifted from the student to the household) or the nature of the loans taken out (that is, deferred interest structure or interest accruing). Persistence behaviors analyzed were further limited based on the present sample given that very few respondents reported ever dropping out for financial reasons. The remaining metric of reduction of credit hours was a bit more limited in what it can tell us about student degree progress. Whereas this behavior is likely not ideal, the degree to which this is truly problematic for all students that report reducing hours to make more money is unclear.

Implications

Campus programs and school administrators are increasingly aware of the difficulties that students face in financing their education; however, programs still need to develop techniques and approaches that can be rigorously analyzed to determine the most effective means of improving student well-being and outcomes. Previous studies of student populations have documented that financial stress is an increasing concern for college students in the United States (Heckman et al. 2014). The present study demonstrated the detrimental effects of financial stress on psychological well-being, and further elaborated on how these stressors can manifest in student behavior. In addition, data from the item analysis of the stress scale highlighted those areas/stressors that may be considered most problematic for a

large percentage of college students. In general, it is clear that many students would benefit from programs that assist in general budget management (making due with limited resources and living with minimal expenses) as well as some general guidance on borrowing decisions. The data further suggested that programs need to not only focus on reducing stress factors for students, but also might want to incorporate aspects that can help improve student self-efficacy as well. Education and outreach programs designed to enhance student knowledge or behavior would do well to incorporate aspects related to self-efficacy or components geared towards building confidence in financial decisions. The present findings indicated that this may be beneficial to SWB and financial attitudes.

Compliance with Ethical Standards

Conflict of interest Cliff A. Robb declares that he has no conflict of interest.

References

- Aldana, S. G., & Liljenquist, W. (1998). Validity and reliability of a financial strain survey. *Financial Counseling and Planning*, 9, 11–19.
- Andrews, F. M., Abbey, A., & Halman, L. J. (1991). Stress from infidelity, marriage factors, and subjective well-being of wives and husbands. *Journal of Health and Social Behavior*, 32(3), 238–253. doi:[10.2307/2136806](https://doi.org/10.2307/2136806).
- Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, 55, 469–480. doi:[10.1037/0003-066X.55.5.46](https://doi.org/10.1037/0003-066X.55.5.46).
- Aselton, P. (2012). Sources of stress and coping in American college students who have been diagnosed with depression. *Journal of Child and Adolescent Psychiatric Nursing*, 25(3), 119–123. doi:[10.1111/j.1744-6171.2012.00341.x](https://doi.org/10.1111/j.1744-6171.2012.00341.x).
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191–215. doi:[10.1037/0033-295X.84.2.191](https://doi.org/10.1037/0033-295X.84.2.191).
- Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist*, 37(2), 122–147. doi:[10.1037/0003-066X.37.2.122](https://doi.org/10.1037/0003-066X.37.2.122).
- Berman, J. (2015). *Class of 2015 has the most student debt in U.S. history*. Retrieved from <http://www.marketwatch.com/story/class-of-2015-has-the-most-student-debt-in-us-history-2015-05-08>.
- Bianco, C. A., & Bosco, S. M. (2002). Ethical issues in credit card solicitation of college students: The responsibilities of credit card companies. *Teaching Business Ethics*, 6, 45–62. doi:[10.1023/A:1014206607573](https://doi.org/10.1023/A:1014206607573).
- Brown, M., Haughwout, A., Lee, D., Scally, J., van der Klaauw, W. (2014). *Measuring student debt and its performance. Staff report no. 668*. New York: Federal Reserve Bank. Retrieved from https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr668.pdf. doi:[10.2139/ssrn.2423377](https://doi.org/10.2139/ssrn.2423377).
- CFPB. (2015). *Student loan servicing: Analysis of public input and recommendations for reform*. Retrieved from http://files.consumerfinance.gov/f/201509_cfpb_student-loan-servicing-report.pdf.
- College Board. (2014). *Trends in college pricing*. Retrieved from: <https://secure-media.collegeboard.org/digitalServices/misc/trends/2014-trends-college-pricing-report-final.pdf>.
- Corder, K. S., Corder, J. K., & Pattok, T. (2005). *College financing and college completion: Using ecological inference to investigate how types of aid received affects retention and graduation outcomes*. Retrieved from http://homepages.wmich.edu/~corder/corder_air_2005.pdf_ENREF_8.
- Dai, E. (2013). *Student loan delinquencies surge*. St. Louis: Federal Reserve Bank. Retrieved from <https://www.stlouisfed.org/Publications/Inside-The-Vault/Spring-2013/Student-Loan-Delinquencies-Surge>.
- DeLongis, A., Folkman, S., & Lazarus, R. S. (1988). The impact of daily stress on health and mood: Psychological and social resources as mediators. *Journal of Personality and Social Psychology*, 54(3), 486. doi:[10.1037/0022-3514.54.3.486](https://doi.org/10.1037/0022-3514.54.3.486).
- Diener, E. (2000). Subjective well-being: The science of happiness and a proposal for a national index. *American Psychologist*, 55(1), 34–43. doi:[10.1037/0003-066X.55.1.34](https://doi.org/10.1037/0003-066X.55.1.34).
- Diener, E., & Biswas-Diener, R. (2002). Will money increase subjective well-being? *Social Indicators Research*, 57(2), 119–169. doi:[10.1023/A:1014411319119](https://doi.org/10.1023/A:1014411319119).
- Diener, E., Diener, M., & Diener, C. (1995). Factors predicting the subjective well-being of nations. *Journal of Personality and Social Psychology*, 69(5), 851–864. doi:[10.1037/0022-3514.69.5.851](https://doi.org/10.1037/0022-3514.69.5.851).
- Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, 125(2), 276–302. doi:[10.1037/0033-2909.125.2.276](https://doi.org/10.1037/0033-2909.125.2.276).
- Drentea, P. (2000). Age, debt, and anxiety. *Journal of Health and Social Behavior*, 41, 437–450. doi:[10.2307/2676296](https://doi.org/10.2307/2676296).
- Drentea, P., & Lavrakas, P. J. (2000). Over the limit: The association among health status, race, and debt. *Social Science & Medicine*, 50, 517–529. doi:[10.1016/S0277-9536\(99\)00298-1](https://doi.org/10.1016/S0277-9536(99)00298-1).
- Emmons, R. A. (1986). Personal strivings: An approach to personality and subjective well-being. *Journal of Personality and Social Psychology*, 51, 1058–1068. doi:[10.1037/0022-3514.51.5.1058](https://doi.org/10.1037/0022-3514.51.5.1058).
- Folkman, S. (1984). Personal control and stress and coping processes: A theoretical analysis. *Journal of Personality and Social Psychology*, 46(4), 839–852. doi:[10.1037/0022-3514.46.4.839](https://doi.org/10.1037/0022-3514.46.4.839).
- Grable, J. E., & Joo, S. (2006). Student racial differences in credit card debt and financial behaviors and stress. *College Student Journal*, 40(2), 400–408.
- Gutter, M. S., & Copur, Z. (2011). Financial behaviors and financial well-being of college students: Evidence from a national survey. *Journal of Family and Economic Issues*, 32(4), 699–714. doi:[10.1007/s10834-011-9255-2](https://doi.org/10.1007/s10834-011-9255-2).
- Haughwout, A., Lee, D., Scally, J., & van der Klaauw, W. (2015). *Student loan borrowing and repayment trends, 2015*. New York: Federal Reserve Board. Retrieved April 16, 2015 from, <http://www.newyorkfed.org/newsevents/mediaadvisory/2015/Student-Loan-Press-Briefing-Presentation.pdf>.
- Heckman, S., Lim, H., Montalvo, C. (2014). Factors related to financial stress among college students. *Journal of Financial Therapy*, 5(1), 19–39. doi:[10.4148/1944-9771.1063](https://doi.org/10.4148/1944-9771.1063) (article 3).
- Hilgert, M. A., Hogarth, J. M., & Beverly, S. G. (2003). Household financial management: The connection between knowledge and behavior. *Federal Reserve Bulletin*, 89(July), 309–322.
- Ishitani, T. T., & DesJardins, S. L. (2002). A longitudinal investigation of dropout from college in the United States. *Journal of College Student Retention: Research, Theory and Practice*, 4(2), 173–201. doi:[10.2190/v4en-nw42-742q-2ntl](https://doi.org/10.2190/v4en-nw42-742q-2ntl).
- St. John, E., Paulsen, M., & Carter, D (2005). Diversity, college costs, and postsecondary opportunity: An examination of the financial nexus between college choice and persistence for

- African Americans and Whites. *Journal of Higher Education*, 76(5), 545–569.
- Joo, S. H., Durband, D. B., & Grable, J. (2008). The academic impact of financial stress on college students. *Journal of College Student Retention: Research, Theory and Practice*, 10(3), 287–305. doi:10.2190/cs.10.3.c.
- Kim, J., Garman, E. T., & Sorhaindo, B. (2003). Relationship among credit counseling clients' financial well, financial behaviors, financial stressor events, and health. *Financial Counseling and Family Planning*, 14, 75–87. doi:10.1007/s10834-006-9024-9.
- Lapp, W. M. (2010). *Behavior models for prosperity: A statistical assessment of savings and behavioral change*. EARN Research Brief. San Francisco, CA: Earned Assets Research Network. Retrieved from https://www.earn.org/wp-content/uploads/2015/03/5_-_Behavioral_Models_for_Prosperity_-A_Statistical_Assessment_of_Savings_and_Behavioral_Change-1.pdf.
- Letkiewicz, J., Lim, H., Heckman, S., Bartholomae, S., Fox, J. J., & Montalto, C. P. (2014). The path to graduation: Factors predicting on-time graduation rates. *Journal of College Student Retention*, 16(3), 351–371. doi:10.2190/cs.16.3.c.
- Lusardi, A., & Mitchell, O. S. (2006). *Financial literacy and planning: Implications for retirement well-being*. Working paper no. 1, Pension Research Council, Wharton School. Philadelphia: University of Pennsylvania.
- Lyons, A. C. (2004). A profile of financially at-risk college students. *The Journal of Consumer Affairs*, 38(1), 56–80. doi:10.1111/j.1745-6606.2004.tb00465.x.
- Sallie Mae. (2013). *How America pays for college*. Retrieved from https://salliemae.newshq.businesswire.com/sites/salliemae.newshq.businesswire.com/files/doc_library/file/Sallie_Mae_Report_-_How_America_Pays_for_College_Report_FINAL_0.pdf.
- Manning, R. D., & Kirshak, R. (2005). Credit cards on campus: Academic inquiry, objective empiricism, or advocacy research? *NASFAA Journal of Student Financial Aid*, 35(1), 39–48.
- Mishel, L., Gould, E., & Bivens, J. (2015). *Wage stagnation in nine charts*. Washington, DC: Economic Policy Institute. Retrieved from <http://www.epi.org/files/2013/wage-stagnation-in-nine-charts.pdf>.
- Nelson, M. C., Lust, K., Story, M., & Ehlinger, E. (2008). Credit card debt, stress and key health risk behaviors among college students. *American Journal of Health Promotion*, 22(6), 400–406. doi:10.4278/ajhp.22.6.400.
- Northern, J. J., O'Brien, W. H., & Goetz, P. W. (2010). The development, evaluation, and validation of a financial stress scale for undergraduate students. *Journal of College Student Development*, 51(1), 79–92. doi:10.1353/csd.0.0108.
- Pavot, W., & Diener, E. (1993). Review of the satisfaction with life scale. *Psychological Assessment*, 5, 164–172. doi:10.1037/1040-3590.5.2.164.
- Pearlin, L. I., Schieman, S., Fazio, E. M., & Meersman, S. C. (2005). Stress, health, and the life course: Some conceptual perspectives. *Journal of Health and Social Behavior*, 46(2), 205–219. doi:10.1177/002214650504600206.
- Perna, L. W. (1998). The contribution of financial aid to undergraduate persistence. *Journal of Student Financial Aid*, 28(3), 25–40.
- Robb, C. A. (2011). Financial knowledge and credit card behavior of college students. *Journal of Family and Economic Issues*, 32(4), 690–698. doi:10.1007/s10834-011-9259-y.
- Robb, C. A., Moody, B., & Abdel-Ghany, M. (2011). College student persistence to degree: The burden of debt. *Journal of College Student Retention: Research, Theory and Practice*, 13(4), 431–456. doi:10.2190/cs.13.4.b.
- Robb, C. A., & Sharpe, D. L. (2009). Effect of personal financial knowledge on college students' credit card behavior. *Journal of Financial Counseling and Planning*, 20(1), 25–40.
- Robb, C. A., & Woodyard, A. S. (2011). Financial knowledge and "best practice" behavior. *Journal of Financial Counseling and Planning*, 22(1), 33–46.
- Ross, S., Cleland, J., & Macleod, M. J. (2006). Stress, debt and undergraduate medical student performance. *Medical Education*, 40(6), 584–589. doi:10.1111/j.1365-2929.2006.02448.x.
- Rothstein, J., & Rouse, C. E. (2011). Constrained after college: Student loans and early-career occupational choices. *Journal of Public Economics*, 95(1), 149–163. doi:10.1016/j.jpubeco.2010.09.015.
- Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research*, 45(1), 89–125. doi:10.2307/1170024.
- Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2nd Ed.). Chicago: University of Chicago Press. doi:10.7208/chicago/9780226922461.001.0001.
- Trombitas, K. (2012). *Financial stress: An everyday reality for college students*. Lincoln, NE: Inceptia. Retrieved from https://www.inceptia.org/PDF/Inceptia_FinancialStress_whitepaper.pdf.
- Westefeld, J. S., Homaifar, B., Spotts, J., Furr, S., Range, L., & Werth, J. L. (2005). Perceptions concerning college student suicide: Data from four universities. *Suicide and Life-Threatening Behavior*, 35(6), 640–645. doi:10.1521/suli.2005.35.6.640.
- Wong, J. G., Cheung, K. K., Ma, K. K., & Tang, S. W. (2006). Web-based survey of depression, anxiety and stress in first-year tertiary education students in Hong Kong. *Australian and New Zealand Journal of Psychiatry*, 40(9), 777–782. doi:10.1111/j.1440-1614.2006.01883.x.
- Worthy, S. L., Jonkman, J., & Blinn-Pike, L. (2010). Sensation seeking, risk-taking, and problematic financial behaviors of college students. *Journal of Family and Economic Issues*, 31(2), 161–170. doi:10.1007/s10834-010-9183-6.
- Xiao, J. J., Tang, C., Serido, J., & Shim, S. (2011). Antecedents and consequences of risky credit behavior among college students: Applications and extensions of the theory of planned behavior. *Journal of Public Policy & Marketing*, 30(2), 239–245. doi:10.1509/jppm.30.2.239.

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