

10-12-2021

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Recommended Citation

Norvilitis, Jill M. and Linn, Braden K. (2021) "The Role of Student Debt and Debt Anxiety in College Student Financial Well-Being," *Journal of Student Financial Aid*: Vol. 50 : Iss. 3 , Article 3.
Available at: <https://ir.library.louisville.edu/jsfa/vol50/iss3/3>

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Cover Page Footnote

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The Role of Student Debt and Debt Anxiety in College Student Financial Well-Being

College is a challenging financial period for young adults. Many students have high expenses, but low income levels. Consequently, students may have high levels of debt, particularly credit card and student loan debt, which are the most frequently reported types among college students (Sallie Mae, 2016). High levels of debt¹ are related to lower levels of well-being (Gutter & Copur, 2011; Morra, Regehr, & Ginsburg, 2008; Norvilitis, 2014) and to decreased student retention (Kim, 2007; Robb, Moody, & Abdul-Gheny, 2011-2012). However, students' financial well-being is related to other factors, such as perceptions of debt and personality, as well. It is important to understand how these factors relate to one another in order to help students confidently manage their money.

In the early 2000s, college student credit card debt increased dramatically. By 2008, 84% of American college students had at least one credit card and an average credit card debt of \$3173 (Sallie Mae, 2009), an increase from \$2327 just seven years prior (Nellie Mae, 2002). Research indicated that, although responsible credit card use has some positive effects, problematic credit card use was related to higher levels of student drop out from college, lower levels of self-esteem, and higher stress (Gutter & Copur, 2011; Norvilitis, 2014; Robb et al., 2011-2012). In the wake of this debt, the federal government passed the Credit CARD act of 2009. The purpose of this act was not solely to address college student credit card debt, but it had several features designed to help students, including prohibiting on-campus giveaways in the marketing of credit cards and requiring proof of income or the presence of a co-signor before cards are given to those under 21. The decrease in credit card debt has been dramatic. Although some students still find themselves in significant credit card debt, by 2016 just 56 % of college students reported holding a credit card and 23% of college students reported credit card debt with an average monthly balance of \$906 (Sallie Mae, 2016). However, although the Credit CARD Act addressed the accessibility of credit cards for students, it was not designed to reduce overall student debt and did not make any changes to increase the affordability of college.

While college students are reporting lower rates of credit card debt, concern has been rising over student loans. In 2010, American college student loans overtook credit card debt as the second highest source of consumer debt (behind mortgages) and current student loan debt has surpassed \$1.5 trillion dollars (Federal Reserve Bank of New York Research and Statistics Group, 2019). Students who have much greater than average student loans appear to experience many of the

¹ 'Debt' refers to both credit card and student loan debt. When the statement applies to only credit card debt or only student loan debt, these specific terms are used.

same negative consequences as students with excessive credit card use. For example, student loans are related to lower rates of degree completion, particularly among low-income students (Kim, 2007) and, among college graduates, those with more loans report lower levels of financial well-being and lower levels of financial assets (Fry, 2014; Zhan, Xiang, & Elliott, 2016). While in college, loans may be a source of stress for students. In a study using the National Longitudinal Survey of Youth 1997 data, those with more student loans were found to have poorer psychological functioning, though parental wealth moderated this relationship; greater parental wealth was associated with worse functioning as loans increased, but the opposite was true among children of less-wealthy parents (Walsemann, Gee, & Gentile, 2015). Student loans are also associated with financial anxiety, more so than are other types of student debt (Archuleta, Dale, & Spann, 2013), and student debt and debt stress have been linked to poorer general health and more symptoms of depression, particularly among African American and Hispanic/Latinx students (Tran, Mintert, Llamas, & Lam, 2018). Further, research indicates that financial stress and greater self-reported student loan debt are related to an increased likelihood of quitting college, a situation that leaves students with debt but without the degree that would make it easier to repay that debt (Britt, Ammerman, Barrett, & Jones, 2017).

Although much of the media coverage surrounding student loans suggests that rising rates of student loans are solely due to a rise in educational costs, not every student who is offered a loan accepts it. Just over 50 % of students report student loan debt (Sallie Mae, 2016). Approximately one in every six students who is offered a loan declines it (Cadena & Keys, 2013). This is most common among the wealthy, who are least likely to need the assistance, and the least wealthy, who are more likely to receive grants and other aid. Students who decline loans that are offered report that their refusal to accept the loan was due to not being comfortable taking out loans and because their parents discouraged loans (Montalto, Phillips, McDaniel, & Baker, 2019).

Research also suggests that a variety of psychological factors influence student loan debt. Similar to predictors of college student credit card debt, these include self-control, delay of gratification, and attitudes toward loans (Cadena & Key, 2013; Norvilitis & Batt, 2016; Norvilitis & Mendes-da-Silva, 2013). Thus, both financial need and psychological factors are related to levels of debt. Models that incorporate both types of factors are needed to understand how best to intervene with students to reduce the negative consequences of excessive levels of debt, particularly the most frequently reported types of debt among college students: credit card and student loan debt (Sallie Mae, 2016).

Debt and Financial Well-being

Certainly, student loans can have positive effects for students. In an experimental study with community college students, student loans predicted increased GPA, number of credits completed, and increased likelihood of transfer to a 4-year college (Marx & Turner, 2016). Conversely, a campaign designed to help community college students make informed decisions about student debt led to lower student loan borrowing, but also led to poorer academic outcomes and greater student loan default (Barr, Bird, & Castleman, 2019). Credit cards, too, have benefits. They allow students to build a credit history and can help meet emergency needs (Warwick & Mansfield, 2000).

Nonetheless, research clearly indicates that college students with higher levels of credit card and student loan debt report lower levels of financial well-being, although it must be noted that much of the work in this area is correlational rather than causal. However, not all students who have high levels of debt report low levels of financial well-being. Indeed, actual debt is not as strongly related to well-being as are perceptions of debt (Morra et al., 2008), indicating a strong influence of psychological factors in financial well-being. For example, Shim, Xiao, Barber, and Lyons (2009) report that financial education, self-actualizing values, and perceived behavioral control all contribute to young adult financial well-being. Watson, Barber, and Dziurawiec (2015) apply cognitive relational theory (Lazarus & Folkman, 1984, as cited in Watson et al., 2015) to explain the importance of perception in understanding well-being. This theory suggests that individuals' appraisal of their financial situation affects their coping behavior which, in turn, is also appraised and affects well-being. In their model, they examined perceptions of financial strain and economizing behaviors and found that these both influence well-being.

The present study sought to expand upon Watson and colleagues' (2015) research to better understand the predictors of college student financial well-being. Specifically, the study examined the relative contribution of the students' student loan and credit card debt and income, perceptions of that debt, as measured by worries about student loans and expectations about how much students would have to take out in loans, the role of parental teaching about money, and personality factors of optimism and anxiety on three different measures of financial well-being.

Effect of Parental Teaching on Financial Well-being

There are conflicting results about the relationship between financial education and student debt and well-being. The role of financial knowledge itself remains unclear, with some studies showing a protective effect on financial behaviors (Robb, 2011; Shim et al., 2009) and others showing increased risk of higher levels of credit card debt and poorer money management (Hirt & Nick, 1999; Norvilitis & MacLean, 2010). Despite these conflicting results, the role of parental modeling and instruction about finances appears to be more consistent. Positive

parental modeling and instruction about money appear to decrease the risk of credit card debt (Norvilitis & MacLean, 2010; Pinto, Parente, & Palmer, 2001) and to increase financial well-being (Shim et al., 2009). Further, beyond socioeconomic status, parents play a role in their children's decisions to accept student loans and in their attitudes toward student loan debt (Xue & Chao, 2015).

Psychological Factors Influencing Financial Well-being

More general psychological factors play an important role in predicting overall well-being and research indicates that such factors also influence financial well-being. In the present study, two of these variables were selected for further examination. Anxiety and optimism were chosen because they represent relatively independent psychological factors that have been identified in previous research.

Anxiety, in particular, is predictive of lower levels of financial well-being. For example, in a study of the Big 5 and financial distress, neuroticism was positively related to distress and conscientiousness was negatively related (Xu, Beller, Roberts, & Brown, 2015). Further, Norvilitis, Szablicki, and Wilson (2003) found that anxiety about money was negatively related to financial well-being.

Optimism also appears to be related to financial well-being. Chang, Bodem, Sanna and Fabian (2011) examined both general optimism-pessimism and financial domain-specific optimism in their study of financial satisfaction in college students. Both general and domain-specific optimism were related to financial satisfaction, though the relationship was somewhat stronger with domain-specific optimism. Similarly, Heckman, Lim, and Montalto (2014) report that those who are more optimistic report lower levels of financial stress.

Summary and Present Study

Most of the prior research on financial well-being involves self-report of perceived well-being (e.g., Norvilitis & MacLean, 2010). Although self-report is important, it is also critical to examine behaviors that indicate concern about well-being. It is possible that examining these concepts separately will yield different insights into understanding how college students experience their money. For example, students may think about their debt and report lower well-being, but this may not translate into behaviors designed to save money. On the other hand, actively engaging in behaviors to save money may indicate greater concern for financial well-being. Therefore, the present study examined self-reported student behaviors that indicate financial strain.

This study, then, examined predictors of these three different measures of college student financial well-being: perceived financial well-being, the presence of more frequent money saving behaviors, and the presence of less frequent money saving behaviors. It was expected that, although debt and income would be related

to financial well-being, other factors, including trait anxiety, optimism, parental teaching about finances, worries about student loans, and expectations about how much student loan debt students would acquire, would also be predictive of financial well-being. No specific differences between predictors of the three financial well-being measures were hypothesized because of the preliminary nature of the financial strain behavior analysis. In addition to regression analyses, mediational analyses were planned to examine the relationships between income and debt and financial well-being.

Method

Participants

A total of 354 students between the ages of 18 and 25 ($M=19.83$, $SD=1.64$) participated. Students were fairly evenly distributed across year in college, with 88 (24.9%) first years, 111 (31.4%) sophomores, 84 (23.7%) juniors, and 71 (20.0%) seniors. The sample was largely composed of women ($n=278$, 78.5%) and the sample was diverse, with 156 (44.1%) white, 117 (33.1%) African American, 39 (11.0%) Latinx, 8 (2.3%) Asian, 20 (5.6%) multiracial, and 14 (4.0%) other students. This diversity is reflective of the institution, which is 45 % white, 31 % African American, 13 % Latinx, 4 % Asian, 4 % multiracial, and 3 % students from other groups.

Materials and Procedure

Participants were recruited from a medium-sized (approximately 7000 full-time students) state university in the northeast. Participants were recruited in classes across campus both through in person requests and electronically via email and course management platforms. The study was explained, highlighting the fact that it is both voluntary and anonymous, and students were given a link to the survey on the Qualtrics platform. After consent was obtained, students completed the survey online. Extra credit was given at the discretion of the instructors.

In addition to demographic information, the following measures were administered:

Measures of Financial Well-Being

Financial Well-Being Scale (FWBS; Norvilitis, Szablicki, & Wilson, 2003). The FWBS assessed students' perceived financial health. This ten-item measure is completed on a five-point scale from strongly agree to strongly disagree, with higher mean scores indicating greater financial well-being. Questions include "I think a lot about the debt I am in," and "I think I am in good financial shape." In the initial article, Cronbach's alpha was found to be acceptable ($\alpha=.74$). In the present study, Cronbach's alpha was .83.

Table 1

Frequency of Financial Strain Behaviors

Students often do many things to save money. Please indicate whether you have engaged in the following to save money:

	Never	Rarely	Often or Always
<i>Less Common</i>			
I stay in when my friends are going out to dinner or to a club	48 (14%)	141 (42%)	145 (43%)
I have missed academic opportunities that would have benefited me, such as attending conferences or completing an unpaid internship.	188 (53%)	90 (25%)	74 (21%)
I work full time or nearly so (30 or more hours per week) while in school full time.	180 (52%)	67 (20%)	97 (28%)
I have skipped routine medical appointments to avoid copays.	256 (74%)	55 (16%)	35 (10%)
I have not gotten medical care when I was sick to avoid fees.	267 (76%)	49 (14%)	34 (10%)
I drive an unreliable car.	281 (81%)	31 (9%)	36 (10%)
<i>More Common</i>			
I have skipped meals.	95 (27%)	139 (40%)	116 (33%)
I have not bought textbooks or other resources my instructor required.	165 (49%)	95 (28%)	79 (22%)
I have asked family members or friends for financial assistance.	78 (23%)	131 (38%)	134 (39%)
I do not have a car and rely on public transportation.	176 (51%)	29 (9%)	138 (40%)

Note. Items from Norvilitis, Linn, and Merwin (2021). Reprinted by permission.

More and Less Common Financial Strain Behaviors (Norvilitis, Linn, & Merwin, 2021). Participants were given the prompt “Students often do many things to save money. Please indicate whether you have engaged in the following to save money:” and asked whether they have engaged in 10 behaviors 1: Never, 2: Rarely, or 3: Often or Always (See Table 1). The term “strain” is not used in this scale to protect against social desirability bias in participant responses. Instead, the more neutral term “save money” is used. In the original study, two factors comprising more and less frequent behaviors were identified. In this study, the same two factors (More common $\alpha=.52$; Less common $\alpha=.65$) were identified through principal components factor analysis, though one item (“I stay in when my friends are going out to dinner or to a club”) fell into the less common group in this study, but the more common group in the original article. Higher scores on the two scales indicate the presence of more financial strain behaviors.

Predictor Variables

Students completed three items to report their current student loan debt, credit card debt, and annual income.

Two measures examined personality factors:

IPIP Anxiety Scale (International Personality Item Pool, n.d.). IPIP scales are open-source equivalents to widely-used, copyrighted measures. The IPIP Anxiety scale was used to assess a person’s level of anxiety on a 5-point scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). In the IPIP database, reliability was .83 and in the present study, reliability was .85.

IPIP Zest Scale (International Personality Item Pool, n.d.). The IPIP Zest Scale was used to measure a person’s level of optimism and enthusiasm on a 5-point scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). In the IPIP database, reliability was .78 and in the present study, reliability was .79.

One measure examined parental teaching about money:

Parent Teaching about Money (Norvilitis, Linn, & Merwin, 2021). This 5-item scale was used to assess how students view the instruction they received from their parents about money. Items included “My parents have been good financial role models” and “My parents provide guidance for me about how to manage my money.” Internal consistency was good ($\alpha=.80$). All items were completed on a 5-point scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

Two measures examined students’ perceptions of money and debt:

Worries about Student Loans and Other Debt (Norvilitis, Linn, & Merwin, 2021). Five items examined students’ concerns about loans and debt on a

5-point scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Items included “I am worried about paying back the student loans I have had to take out and will have to take out to pay for college” and “I worry about having to drop out of school because of my student loan debt.” Reliability was .79.

Expected Student Loan Debt. A single item asked students to estimate the total amount of student loans that they would owe in student loans when they graduated with their bachelor’s degree.

Analyses

Following descriptive statistics, a series of correlations examining the relationships between the three well-being measures and the predictor variables examined the bivariate relationships among variables was run to ensure that assumptions for subsequent analyses were met. Then, linear multiple regressions were used to identify which variables uniquely contribute to the three types of well-being. Finally, a path analysis examined indirect effects of parent teaching about money on financial well-being. Univariate and bivariate analyses were conducted in SPSS. Indirect effects were estimated using a bootstrap with 5000 samples in MPlus (Muthén & Muthén, 2007).

Results

Student Debt

Overall, 146 (42.7%) students reported not having any major or store credit cards and an additional 103 (30.1%) reported only having one. Among those who reported having at least one credit card, debt ranged from \$0 to \$7000 ($M=\$454$, $SD=969$).

Most students ($n=260$; 75.1%) reported having student loans ($M=\$10174$, $SD=11727$) and, when asked how much they expected to take out altogether, students generally expected to double their loans before finishing college ($M=\$20933$, $SD=20188$), with only 69 (20.7%) expecting to not take out loans.

As a group, students are somewhat concerned about their level of debt. About two-thirds of students ($n=230$, 65.3%) agreed or strongly agreed that they believe that they had no choice but to take out student loans to attend college. Not surprisingly, then, 211 (56.8%) agreed or strongly agreed that they were worried about paying back their loans after college.

Because levels of student loan debt were expected to increase throughout time in college, year in college was included as a co-variate in all correlational analyses and on the first step of all regression analyses.

Table 2
 Partial Correlations between Financial Well-Being and Predictor Variables

	Perceived Well-Being	More Common Strain Behaviors	Less Common Strain Behaviors
Credit Card Debt	-.24***	.00	.11
Student Loan Debt	-.34***	.07	.06
Income	.06	-.15*	-.13*
Expected Student Loans	-.42***	.20**	.17**
Student Loan Worries	-.69***	.34***	.36***
Anxiety	-.27***	.08	.20**
Optimism	.30***	-.16***	-.29***
Parent Teaching	.31***	-.14*	-.27***

Note. *** $p < .001$; ** $p < .01$; * $p < .05$

Predicting Financial Well-Being

Financial well-being was measured three ways: the Financial Well-Being Scale and the More and Less Common Financial Strain Behaviors measures. The three measures were related but largely independent (FWBS and More Frequent: $r = -.44$, $p < .001$; FWBS and Less Frequent: $r = -.41$, $p < .001$; Less and More Frequent: $r = .46$, $p < .001$).

Table 2 contains partial correlations controlling for year in school examining relationships between Financial Well-being and the predictor variables.

Three regression analyses were completed with credit card debt, student loan debt, and income on the first step and anxiety, optimism, parental teaching about money, student loan worries, and student loan expected totals on the second step to predict the three well-being measures.

Greater perceived Financial Well-being was predicted by lower levels of credit card debt, lower levels of expected (but not actual) student loans, lower levels of anxiety, and fewer worries about loans, and greater optimism [$R = .78$, Adj $R^2 = .59$, $F(9, 275) = 47.15$, $p < .001$; Table 3].

Participating in more of the More Common Financial Strain Behaviors was predicted by lower levels of income, *less* student loan debt but *more* expected student loan debt, more worries about student loans, and lower levels of optimism. [$R = .42$, Adj $R^2 = .15$, $F(9, 255) = 6.06$, $p < .001$; Table 4].

Participating in more of the Less Common Financial Strain Behaviors was predicted by advancing year in college, lower income, worries about student loans,

Table 3
Regression Analysis Predicting Perceived Financial Well-being

Predictor Variable	B	SE B	β	α	Model R ²
<u>Step 1</u>					
Credit Card Debt	.00	.00	-.22	.001	.17
Student Loans (Current)	-2.81 ⁻⁵	.00	-.39	<.001	
Income	2.52 ⁻⁶	.00	.05	.37	
Year in School	.10	.04	.14	.02	
<u>Step 2</u>					
Credit Card Debt	.00	.00	-.19	<.001	.61
Student Loans—Current	2.89 ⁻⁶	.00	.04	.52	
Income	1.66 ⁻⁷	.00	.00	.93	
Year in School	-.00	.03	-.00	.94	
Student Loans—Expected	-7.12 ⁻⁶	.00	-.18	.003	
Student Loan Worries	-.50	.04	-.60	<.001	
Anxiety	-.15	.05	-.14	.001	
Parental Teaching	.02	.04	.02	.59	
Optimism	.13	.06	.10	.04	

Table 4
Regression Analysis Predicting More Common Financial Strain Behaviors

Predictor Variable	B	SE B	β	α	Model R ²
<u>Step 1</u>					
Credit Card Debt	1.08 ⁻⁵	.00	.16	.80	.05
Student Loans—Current	4.43 ⁻⁶	.00	.10	.13	
Income	-4.70 ⁻⁶	.00	-.15	.02	
Year in School	-.07	.03	-.16	.02	
<u>Step 2</u>					
Credit Card Debt	-2.40 ⁻⁶	.00	-.00	.95	.18
Student Loans—Current	-9.21 ⁻⁶	.00	-.21	.03	
Income	-3.99 ⁻⁶	.00	-.12	.03	
Year in School	-.02	.03	-.04	.60	
Student Loans—Expected	4.96 ⁻⁶	.00	.20	.03	
Student Loan Worries	.17	.04	.31	<.001	
Anxiety	-.02	.05	-.02	.74	
Parental Teaching	.02	.04	.04	.58	
Optimism	-.14	.06	-.16	.03	

Table 5
Regression Analysis Predicting Less Common Financial Strain Behaviors

Predictor Variable	B	SE B	β	α	Model R ²
<u>Step 1</u>					
Credit Card Debt	6.18 ⁻⁵	.00	.11	.09	.03
Student Loans—Current	3.55 ⁻⁶	.00	.10	.15	
Income	-3.53 ⁻⁶	.00	-.13	.03	
Year in School	.03	.03	.08	.27	
<u>Step 2</u>					
Credit Card Debt	-4.09 ⁻⁵	.00	.07	.21	.19
Student Loans—Current	-6.37 ⁻⁶	.00	-.17	.06	
Income	-2.97 ⁻⁶	.00	-.11	.05	
Year in School	.06	.03	.16	.02	
Student Loans—Expected	2.76 ⁻⁶	.00	.13	.13	
Student Loan Worries	.13	.03	.30	<.001	
Anxiety	.02	.04	.04	.55	
Parental Teaching	-.04	.03	-.10	.13	
Optimism	-.15	.05	-.21	.003	

lower levels of optimism and a tendency toward *lower* levels of student loans [$R=.50$, Adj $R^2=.23$, $F(9, 252)=9.40$, $p<.001$; Table 5].

Role of parent teaching

Parent teaching had a significant indirect effect on Financial Well-being and More and Less Common Financial Strain Behaviors through worries about debt. The effect on Financial Well-being was positive ($b=.06$, $SE=.02$, 95% CI=.03, .08), suggesting that more parent teaching increases Financial Well-being score. The effect of parent teaching on More Common Financial Strain Behaviors was negative ($b=-.07$, $SE=.03$, 95% CI= -.11, -.02) as was the effect of parent teaching on Less Common Financial Strain Behaviors ($b=-.07$, $SE=.02$, 95% CI= -.11, -.03), suggesting that less parent teaching increases both kinds of financial strain behaviors. Figure 1 presents a visual depiction of these results.

Discussion

College students often have high levels of expenses and low levels of income. Consequently, some students may engage in a variety of money-saving behaviors. Some of these behaviors, including avoiding medical care or skipping meals, may have long-term consequences on health and academic achievement. In order to understand the relationship between financial status, the present study

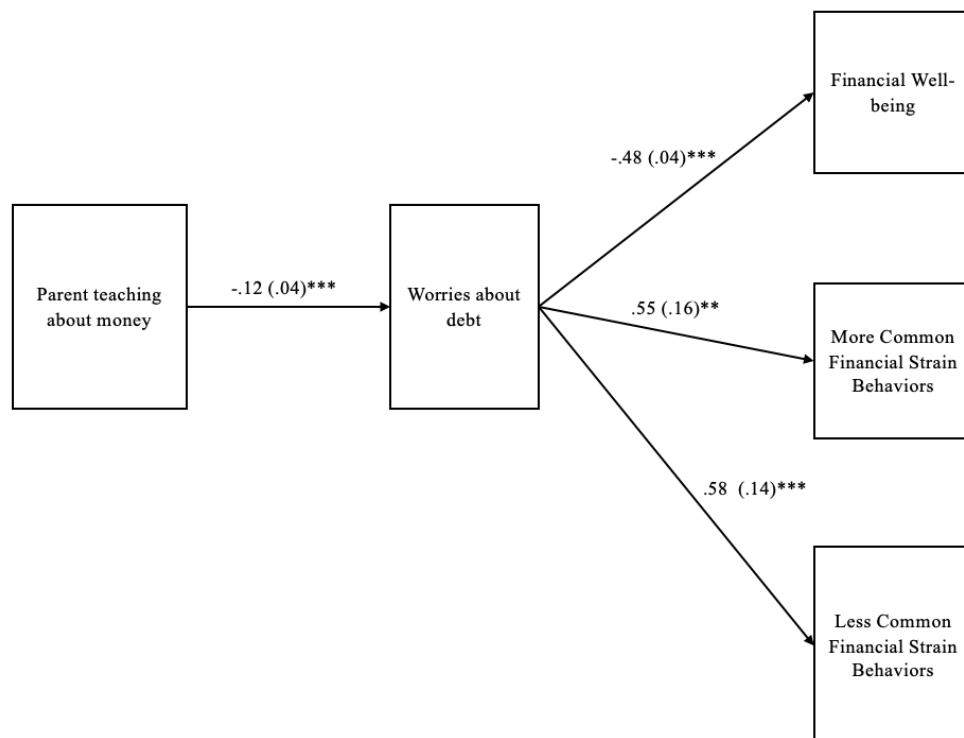


Figure 1. Study variables depicting direct relationships with beta coefficients, standard errors, and p values. Indirect effects are the product of direct effects.

* $p < .05$, ** $p < .01$, *** $p < .001$

examined three primary issues. First, it expanded upon Watson and colleagues' (2015) research exploring how cognitive relational theory explains Financial Well-being. The present study affirmed the importance of perception of financial status (such as credit card debt, student loan amounts, and worry about student loans), as predicted by cognitive relational theory. However, results of this study suggest that trait anxiety and optimism are both also related to financial well-being. Second, this study examined predictors of More and Less Common Financial Strain Behaviors. Students who engaged in More Common Financial Strain Behavior had lower levels of income, less student debt, but more worry about loans and more expected loans, and lower levels of optimism. Students who participated in Less Common Financial Strain Behavior had lower incomes and student loans, but greater worry about loans, and lower levels of optimism. Lastly, this study found evidence that parent teaching has indirect effects on Financial Well-being and More and Less Common Financial Strain Behaviors through worry about loans. Taken together, the results suggest that Financial Well-being is related to perceptions of debt, individual differences in anxiety and optimism and parent teaching and suggests

that financial strain behaviors may be attempts to increase one's sense of financial well-being.

As found in prior research and as expected by cognitive relational theory, perception of finances is positively related to financial well-being. In this study, worries about student loans and other debt predicted all three measures of Financial Well-being. Students' anticipated loan amount predicted two of three measures. Further, perceptions of debt were more consistently related to well-being than were actual debt and income. It is noteworthy that greater credit card debt was related to perceived financial well-being whereas student loan debt was negatively related to both more and less common money saving behavior. This may be due to two factors. First, credit card debt is immediately relevant because students receive bills right away while student loan debt is deferred. Second, students may be so anxious about student loans that they avoid debt as much as possible, while fearing its implications.

The second major focus was to examine predictors of different measures of Financial Well-being. Relationships among the three measures of Financial Well-being were significant, but not very strong, indicating that the three measures were tapping different aspects of financial well-being. Further examination of the bivariate correlations between well-being and the various predictors supports this as well. For example, current student loan debt was related to perceived well-being, but not to the two measures of well-being behaviors, suggesting a disconnect between how students feel about their financial state and what steps they are taking in response to that state.

Examination of the regression analyses helps to clarify these differences. Perceived Financial Well-being was predicted by expected (but not actual) student loans, worries about student loans, anxiety, less optimism, and more credit card debt. This points to a general anxious and less positive general outlook on life that includes anxiety about finances. Similarly, the presence of More Common Financial Strain Behaviors was predicted by more expected loans, more worries about loans, and lower optimism, but less actual student loan debt. They choose these money saving behaviors as a reaction to their current financial situation rather than as a way to, say, avoid future student loan debt. However, these behaviors may seem helpful in the short-term, but are not good long-term financial strategies. Thus, students reporting more of these behaviors may have fewer skills for managing their money. In contrast, the presence of Less Common Financial Strain Behaviors was predicted by year in college, lower levels of current student loans, lower levels of income, and more worries about student loans. Students reporting this pattern are further along in college with lower income, suggesting perhaps an ongoing struggle to pay for college, but without much optimism for the future.

The conclusions about the relationship of student loans and income to More and Less Common Financial Strain Behaviors are tempered by the low reliability of the measures. The low reliabilities may be improved by adding additional items to the scales (Traub, 1994). As a result, a priority of future research should be to fully elucidate money saving behaviors of college students. Such research may be able to impact educational performance and retention rates.

Implications for Practice

It appears, then, that there are different facets to predicting Financial Well-being. Colleges interested in promoting student financial health should consider which of these—or all—ought to be addressed. For example, providing education to address concerns about potential future student loans and worries about loans may help reduce some of the More Common Financial Strain Behaviors. Although these are categorized as more common, this is only in comparison with the more extreme behaviors in the other category. This category still includes skipping meals and not purchasing textbooks, behaviors that have consequences for well-being and learning. Future research examining the efficacy of this type of financial education would be beneficial.

On the other hand, students reporting more of the Less Common Financial Strain Behaviors appear to be in significant financial distress. These students are working nearly full-time while in college full-time and are skipping necessary medical care; behaviors that may save money in the short term, but may cause long term health and academic issues. It is noteworthy that the students who are engaging in the Less Common behaviors are likely also engaging in the More Common ones as well, compounding their struggles. Of the 41 students who were above one standard deviation above the mean on the Less Common behaviors, 36 (87%) reported scores above the mean on the More Common behaviors as well, with 23 (56%) above one standard deviation above the mean on the More Common Financial Strain Behaviors measure. To address these concerns, colleges may need to focus on resources for students to meet these needs.

Finally, students reporting lower levels of perceived Financial Well-being appear to be more anxious, suggesting a need to focus on coping and cognitive restructuring. Britt and colleagues (2017) noted that financial stress was a predictor of decreased retention. However, they also noted that students who sought financial counseling were more likely to discontinue college and suggested that the timing of that counseling may have an impact. Our results suggest that it is possible that focusing on the different needs identified in these patterns may yield different results.

The results of the mediation analyses indicate that there is also an opportunity to intervene with parents since parent teaching has an inverse

relationship with worries about debt. Moreover, parent teaching had a significant indirect effect on both Financial Well-being and More and Less Common Financial Strain Behaviors through worries about debt. The effect of parent teaching was positive when the dependent variable was Financial Well-being suggesting that parent teaching about money can increase Financial Well-being. The effect was negative when the dependent variable was either More or Less Common Financial Strain Behaviors suggesting that less parent teaching increases More or Less Common Financial Strain Behaviors. These results are consistent with previous research indicating that parent teaching has a positive effect on Financial Well-being (Shim, 2009) and extends current knowledge by demonstrating that less parent teaching about money can increase financial strain behaviors. It is thus important to encourage parents to teach children about money, as other researchers have suggested (Norvilitis & MacLean, 2010).

Although not the focus of the present study, it is also important to note the context in which these analyses were completed. Data were collected at a public, four-year college with a large number of first-generation college students. Examination of the money saving behaviors indicates a high degree of financial strain among these college students. Nearly three quarters report skipping meals, at least occasionally, to save money and half have not purchased all of their textbooks. This level of financial strain cannot be helpful to their college success. Although prior research has linked excessive debt with college drop-out (Robb et al., 2011-2012), further examination of extreme money saving behaviors that are short of leaving college would be useful.

Limitations

Despite the intriguing results, there are limitations to the present study. A major limitation is the use of cross-sectional data. Inferring causality from cross-sectional data is always problematic, but especially so when the causal link could go either way or when reciprocal relationships might exist. For example, it is possible that anxiety may influence well-being or that those who have lower levels of Financial Well-being may become more anxious. Clearly, longitudinal data would help clarify such relationships.

Data are self-reported. There is some evidence that students do not accurately report student loan indebtedness (Hira, Anderson, & Peterson, 2000) and underestimate credit card debt, student loans, and future loan payments (Artavanis & Karra, 2020; Brown, Haughwout, Lee, & van der Klaauw, 2015). However, because debt appears to be consistently underreported (rather than randomly reported), self-reported data should be sufficient to demonstrate the relationships examined here as the true relationship is likely to be even stronger. Similarly, the financial strain behaviors are self-reported and cannot be objectively verified. But, even if the frequency of these behaviors is less than students report, engaging in

such money saving behaviors indicates students' level of concern about their finances.

Another limitation is that all data were collected at one public college. It is possible that Financial Well-being may vary among students at private universities or other colleges with students from different financial backgrounds. Further, several of the measures have been used in just one prior study and reliability varied. Additional research should further develop these measures and also more fully explore the impact of Financial Strain Behavior when a student lives with parents. At this school, 32% of students live on campus. Because the present study did not ask about students' current living situations, it was impossible to examine this behavior. Finally, the sample is largely composed of women. In part, this reflects enrollment at the college (60% female); it is also reflective of the fact that, although data were collected from classes across campus, psychology majors, who are more likely to be female than the overall campus numbers, were more likely to participate. T-tests examining gender differences on all of the measures found only the expected gender difference in anxiety, indicating that gender is likely not a major factor in the relationships identified in this sample. However, further research with a more gender-balanced sample would be beneficial.

Although there are limitations, it appears that subjective financial well-being is more strongly related to psychological factors rather than more objective (although still self-reported) financial ones, such as current student loan debt, and that there are multiple dimensions of financial well-being spanning cognitive, emotional, and social domains. These results suggest that interventions targeting these factors may help improve student financial well-being and reduce financial strain behaviors, which may ultimately impact success in college.

Nexus: Connecting Research to Practice

- In the present study, varying combinations of student debt, worries about student loans, and personality factors predict financial well-being in different ways, pointing to different opportunities for intervention with students. For example, students reporting lower levels of perceived financial well-being may be more anxious about debt, which suggests the need to work on coping skills. On the other hand, students reporting financial strain behaviors may have trouble managing money and may be experiencing financial difficulties, which suggests the need for more tangible resources.
- Financial strain behaviors were common among students in this sample, with students reporting taking serious measures to save money, such as not seeing a doctor when ill (24%), skipping meals (73%) and not buying all required textbooks (50%). Prior research has indicated that financial stress is related to decreased retention. College staff and faculty should be alert to identify and

address these extreme coping behaviors both for the immediate well-being of students and to increase the likelihood of graduation from college.

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