

## College Students and Financial Stress

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College students and their finances have been a recent focus for both academic researchers and the media. Much of the attention has been on their financial literacy and accumulation of credit and debt management practices. Pinto and Mansfield (2006) reported that on average, two of every three undergraduates take out a student loan and/or use credit cards to finance their educations. While educational loan debt continues to climb, in more recent reports a smaller proportion of college students have credit cards (Norvilitis, 2014). Outstanding student loan balances in the United States total roughly \$1 trillion (Federal Reserve Bank, 2013) and student debt is the only form of consumer debt that has risen since 2007, having doubled since the recession with a five-year average growth of 11% (The Vanguard Group, 2014). Two sources reported to the US GAO (2014) that the percentage of college students with credit cards declined from 53% in 2004 to 49% in 2010 to between 29 and 33% in 2013.

Collectively, financial pressures create financial stress for some college students. The purpose of this research was to measure financial stress among college students enrolled in a personal finance elective open only to seniors. A second goal was to identify the student characteristics that explain financial stress. Previous research has demonstrated that financial stress is related to other aspects of college student life, including academic performance and physical and mental health (Berg-Cross & Green, 2010; Hogan, Bryant, & Overmyer-Day, 2013; Hornak, Farrell, & Jackson, 2010). Thus, understanding financial stress among college students has important implications for students and those who advise them.

### Literature Review

Previous research about financial stress in general is characterized by inconsistencies in terminology and how the key variable was measured. In addition to financial stress, researchers have used related terms such as economic strain, economic hardship, and economic distress to refer to some aspect of the same or related phenomenon (Fox & Chancey, 1998; Gutman & Eccles, 1999; Voydanoff, 1990). They have measured financial stress subjectively (i.e., "Do you feel worried about money"; see, for example, Gutman & Eccles, 1999 and Lempers, Clark-Lempers, & Simon, 1989) as well as objectively. Objective measures include asking about cash flow problems, economic and financial hardships, missing out on discretionary spending opportunities, and employment-related income restrictions (Nicolini & Cude, 2014).

There is no greater consistency in previous research about financial stress and college students in that an explicit definition of the term is rare. Financial stress (or the related concept of anxiety) also has been measured in different ways. One approach is to ask respondents a limited number of questions about financial behaviors assumed to contribute to financial stress (for example, "I have trouble paying for things"; see Guo, Wang, Johnson, & Diaz, 2011; Hayhoe, Leach, Allen, & Edwards, 2005; Sages, Britt, & Cumbie, 2013; Serido, Shim, Xiao, Tang, & Card; 2014).

However, Northern, O'Brien, and Goetz (2010) designed and psychometrically evaluated a measure of financial stress specifically for college students. After testing with 177 students, they produced a 13-item instrument that asked respondents how often they thought about (1=Never to 4=All the time) each item. They reported a Cronbach's alpha of .872 and a mean score of 27.54 (7.39 standard deviation). Factor analysis identified three components of financial stress which the researchers

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described as stressors that may impact one's credit score, being unable to respond to a financial emergency, and known constraints to financial situations. The purpose of the research described in this paper was to test the Northern et al. instrument with a different sample of students and identify factors that explain financial stress among college students.

### Methodology

The instrument was administered in class as an attendance activity in an elective personal finance course open only to college seniors. The instrument was administered twice each semester, once in about Week 5 and once in about Week 10; this paper uses data from the first administration of the test. Data from students who had signed the informed consent form were entered into Excel for analysis.

A Cronbach's alpha was estimated to assess the reliability of the instrument. Factor analysis identified the underlying components of the financial stress test. Multinomial logistic regression was used to investigate the student characteristics that influence financial stress.

### Results

Data were available from 378 students after incomplete records were removed. The students were from majors in 11 different colleges on campus; 37% were majors in Arts and Sciences; 20% were in Business; and 16% were in Journalism and Mass Communication. Most (89%) were 22 years old or younger, unmarried without children (90%), and female (64%).

The mean score on the financial stress test was 24.67, with a standard deviation of 6.50. The means and standard deviations for each item are reported in Table 1. The Cronbach's alpha was .829.

Consistent with Northern et al. (2010), factor analysis suggested a three-factor solution (see Table 2). The items loading on Factor 1 (difficulty responding to a financial emergency) were the same as in Northern et al.'s research. Relative to the previous research, one additional item (being behind on payments) loaded on Factor 2 (credit score related) and one additional item (knowing you make less money than most of your peers) loaded on Factor 3 (constraints to financial situation). Despite the additional items, each factor still seemed internally consistent. One item (#12) did not load on any of the three factors.

Table 1.  
Item Analysis of the Financial Stress Test

| Questions  | Mean | Standard Deviation |
|--|------|--------------------|
| 1. Being behind on payments  | 1.56 | 0.74               |
| 2. Having a low credit score                                       | 1.61 | 0.77               |
| 3. Not having any emergency money                                  | 2.24 | 0.92               |
| 4. Living paycheck to paycheck                                     | 2.15 | 1.04               |
| 5. Being in a job where work isn't steady/predictable              | 1.84 | 0.95               |
| 6. Barely making enough money to cover expenses                    | 2.14 | 0.93               |
| 7. Not making enough money to be able to cover unexpected expenses | 2.18 | 0.91               |
| 8. Knowing that you make less money than most of your peers        | 1.78 | 0.88               |
| 9. Having large debt   | 1.73 | 0.98               |
| 10. Having loans with high interest rates                          | 1.52 | 0.82               |
| 11. Christmas/Holiday expenses                                     | 2.06 | 0.81               |
| 12. Having to borrow money from family/friends                     | 2.03 | 0.92               |
| 13. Paying taxes   | 1.81 | 0.89               |

Table 2.  
Financial Stress Test Factor Loadings

| Item   | Factor 1   | Factor 2   | Factor 3   |
|--|------------|------------|------------|
| 3. Not having any emergency money                                  | <b>.63</b> | .43        | -.07       |
| 4. Living paycheck to paycheck                                     | <b>.72</b> | .37        | .03        |
| 5. Being in a job where work isn't steady/predictable              | <b>.63</b> | -.17       | .33        |
| 6. Barely making enough money to cover expenses                    | <b>.82</b> | .24        | .08        |
| 7. Not making enough money to be able to cover unexpected expenses | <b>.77</b> | .31        | .12        |
| 2. Having a low credit score                                       | .16        | <b>.54</b> | .10        |
| 9. Having large debt   | .23        | <b>.78</b> | .18        |
| 10. Having loans with high interest rates                          | .07        | <b>.77</b> | .29        |
| 1. Being behind on payments  | .22        | <b>.61</b> | -.09       |
| 11. Christmas/Holiday expenses                                     | .04        | -.02       | <b>.71</b> |
| 13. Paying taxes   | -.06       | .19        | <b>.72</b> |
| 8. Knowing that you make less money than most of your peers        | .38        | .14        | <b>.51</b> |
| 12. Having to borrow money from family/friends                     | .24        | .13        | .32        |

In Table 3 are the results of a multinomial logistic regression in which the financial stress score was the dependent variable and a set of student characteristics were the independent variables. Students who did not have a student loan were more likely to be in the low stress group (Estimate = 2.175,  $p=.000$ ) and the medium stress group (Estimate=1.224,  $p=.000$ ) than the high stress group. Leaving college without student loan debt gives students much-needed financial flexibility that likely contributes to lower stress. Students who reported they had financial education previously (Estimate=-1.102,  $p=.093$ ) were less likely to be in the low stress group than to be in the high stress group. Perhaps, as suggested in previous research, these students' previous financial education increased their expectations about their own financial behaviors. However, previous financial education was not related to being in the medium stress rather than the high stress group. Business majors were more likely to be in the low stress group (Estimate=1.002,  $p=.091$ ) and the medium stress group (Estimate=.934,  $p=.065$ ) than in the high stress group. This could perhaps be a combined effect of confidence about securing a competitive salary after graduation and knowledge acquired through their major about how to avoid and/or manage financial stress. Having a job lined up after graduation (Estimate=.586,  $p=.093$ ) was associated with being in the medium stress group rather than the high stress group. A job offer decreases financial uncertainty for one's future. Age, gender, having a credit card, and plans to live with parents after graduation were not significant in the analysis.

### Conclusions and Recommendations

The consistency of the results from this research with those of Northern et al. (2010) is confirmation that the financial stress instrument they created is a reliable measure of college student financial stress. The high Cronbach's alpha (.829) along with the relative consistency with Northern et al.'s means and standard deviations (27.54 and 7.39 in Northern's results; 24.67 and 6.50 in the current paper) suggest the instrument has merit for use in future work. Further confirmation of the instrument's value is the identification of the same three factors (with minor differences in item loading) in this research and Northern et al.'s.

Additional work is needed to explain difference in financial stress. Only having a student loan, previous financial education, being a business major, and having a job offer after graduation explained financial stress. Perhaps personal traits such as locus of control (see for example, Britt, Cumbie, & Bell, 2013) would strengthen the predictive value of the model.

Finally, although this research demonstrates the usefulness of the instrument, it may be that its applicability is limited in that the items are too narrowly targeted to middle-income students. The instrument may need to include a wider range of behaviors for use among lower-income college students. For example, Hornak, Farrell, and Jackson (2010) described students sending money home to provide financial assistance to their parents. Berg-Cross and Green (2010) wrote about students self-limiting their

career options for financial reasons. Barbara Duffield, policy director of the Washington, DC-based National Association for the Education of Homeless Children and Youth, was quoted as reporting that in 2009, "47,204 college students applying for financial aid checked a box that identified themselves as homeless" ("Homeless college students on the rise," 2011). Expansion of the instrument to include a broader range of financial situations that may create financial stress among some students is recommended.

Table 3.

Multinomial Logistic Regression Results: Financial Stress Score (1=Low, 2=Medium, 3=High) as Dependent Variable

| Students' Financial Stress Level |   | Estimate | SE   | Wald  | df   | p(Sig) | Odds Ratio |
|----------------------------------|---|----------|------|-------|------|--------|------------|
| 1 (Lowest stress)                | Intercept   | 0.69     | 1.80 | 0.15  | 1    | 0.70   |            |
|                                  | Has credit card (1=yes)                             | 0.60     | 0.42 | 1.98  | 1    | 0.16   | 1.80       |
|                                  | Has student loan (1=yes)                            | 2.18     | 0.51 | 18.52 | 1    | 0.00   | 8.80       |
|                                  | Has job offer for after graduation (1=yes)          | 0.55     | 0.46 | 1.43  | 1    | 0.23   | 1.73       |
|                                  | Plans to live with parents after graduation (1=yes) | 0.02     | 0.44 | 0.001 | 1    | 0.97   | 1.02       |
|                                  | Previous financial education (1=yes)                | -1.10    | 0.66 | 0.28  | 1    | 0.09   | 0.33       |
|                                  | Age (1=18-22, 2=23-29, 3=30-39, 4=40+)              | -1.61    | 1.09 | 2.10  | 1    | 0.14   | 0.20       |
|                                  | Gender (1=female)                                   | -0.22    | 0.47 | 0.21  | 1    | 0.65   | 0.81       |
| 2 (Medium stress)                | Major (1=business, 0=other)                         | 1.00     | 0.59 | 2.85  | 1    | 0.09   | 2.72       |
|                                  | Intercept   | 0.90     | 1.22 | 0.54  | 1    | 0.46   |            |
|                                  | Has credit card (1=yes)                             | 0.33     | 0.34 | 0.94  | 1    | 0.33   | 1.39       |
|                                  | Has student loan (1=yes)                            | 1.22     | 0.33 | 13.61 | 1    | 0.00   | 3.40       |
|                                  | Has job offer for after graduation (1=yes)          | 0.59     | 0.35 | 2.81  | 1    | 0.09   | 1.80       |
|                                  | Plans to live with parents after graduation (1=yes) | 0.15     | 0.36 | 0.19  | 1    | 0.66   | 1.17       |
|                                  | Previous financial education (1=yes)                | -0.58    | 0.55 | 1.04  | 1    | 0.31   | .570       |
|                                  | Age (1=18-22, 2=23-29, 3=30-39, 4=40 or older)      | 0.12     | 0.46 | 0.06  | 1    | 0.80   | 1.12       |
| Gender (1=female)                | -0.50   | 0.38     | 1.72 | 1     | 0.19 | 0.61   |            |
| Major (1=business, 0=other)      | 0.93  | 0.51     | 3.40 | 1     | 0.07 | 2.55   |            |

Notes: Reference group was students in high stress group, defined as a score more than one standard deviation above the mean. "Low" stress was a score more than one standard deviation below the mean. The rest were classified as "medium" stress scores.

N=307

$\chi^2$  (df=16)=299.545

Pseudo R<sup>2</sup> Cox and Snell=0.160, Nagelkerke=0.190, McFadden=0.095

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