

The influences of financial self-efficacy and financial socialization on college students' financial stress and coping

by

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B.B.A., University of Wisconsin, 1979  
M.S., College for Financial Planning, 2010

AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

DOCTOR OF PHILOSOPHY

School of Family Students and Human Services  
College of Human Ecology

KANSAS STATE UNIVERSITY  
Manhattan, Kansas

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## **Abstract**

There were 19.8 million college students in the U.S. in the fall of 2017 (NCES, 2017). These students face many challenges and opportunities including new social networks, enhanced academic pressures, new living arrangement and new financial responsibilities. Many of these students have had positive role models who have socialized them through discussion and example (Shim, Barber, Card, Xiao, & Serido, 2010). These role models may have instilled positive self-efficacy in these students as well helping to prepare the students for the many challenges and opportunities in college. Some students have not had those role models. This research seeks to understand the impact of positive socialization and self-efficacy on students' feelings of financial stress and then on their choices of how to cope with that stress.

The financial challenges of paying for college are well publicized with 44.2 million Americans currently owing over \$1.48 trillion in student loan debt (NCES, 2017). In this study, the impact of these financial challenges is viewed through the lens of the Transactional Model of Stress and Coping Theory which proposes that stress is an individual perception influenced by that individual's sense of threat, vulnerability, and ability to cope (Lazarus & Folkman, 1984). There are two sets of empirical models; the first examines the influences in the appraisal process on perceptions of financial stress using OLS regression with the second empirical model examining the influences on their coping choices using logistic regression. Both models control for influences on stress and coping choices including demographic, socio-economic and academic factors. The results inform how financial self-efficacy and financial socialization influence financial stress as they suggest the importance of enabling financial self-efficacy by parents, educators and other leaders of children.

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Approved by:

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## **Abstract**

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At the beginning of my Ph.D. program I was filled with feelings of confidence quickly followed by deeper feelings of terror. The research I've conducted with stress theory explains both the confidence and the terror. The terror is simply the result of my not completely understanding or using all the resources available. The confidence is the result of relying on those resources.

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## **Dedication**

This is dedicated to my family.

To my mother who taught us the importance of managing money and keeping a spotless check register, a great role model.

To my wife Sue who makes everything better.

To my children, Jessica and Joe, you are the joys of my life.

To Brogan, you are only person who is required to call me “Doc”.

# **Chapter 1 - Introduction**

## **Introduction and Statement of the Problem**

College is the overwhelming choice for high school graduates in the United States with over 1.9 million 2017 high school graduates enrolled in college (BLS, 2017). Those 1.9 million students represent approximately 66.7% of 2017 high school graduates (BLS, 2017). The transition from high school to college creates both considerable opportunity and considerable challenge to these students. The many changes facing college students have been termed ecological transitions and include reduced parental supervision, increased autonomy and new interpersonal relationships (Bronfenbrenner, 1979; Holinka, 2015). College student ecological transitions are associated with increased feelings of stress (King, Vidourek, Merianous, & Singh, 2014). As an example, increased academic expectations, both real and perceived, influence feelings of stress (Holinka, 2015). The rate of increase in college student stress has been described as “alarming” (King et al., 2014, p. 133).

The initiators of this stress, known as stressors, take many forms including academic pressures and lifestyle changes which have been linked to feelings of stress in many college students (Friedlander, Reid, Shupak, & Cribbie, 2007; King et al., 2014). These feelings of stress have a negative impact on mental and physical health including decreased mental acuity, depression, suicide, and musculoskeletal disorders (Bauer, Chesin, & Jeglic, 2014; Ekpenyong, Daniel, & Aribio, 2013; Lester, 2014; Pedersen, 2012; Pelletier, Lytle, & Laska, 2016). Students may choose to cope with their stress by making risky lifestyle choices such as binge drinking, drug use and promiscuity further negatively impacting their mental and physical health (Lester, 2014; Pedersen, 2012; Pelletier et al., 2016).

Feelings of stress have been shown to be mitigated by high levels of self-efficacy and active socialization (Bandura, 1977; Lown, 2011; Solheim, Zuiker, & Levchenko, 2011). Self-efficacy is a person's belief they can accomplish what they set out to do (Bandura, 1977). Feelings of stress may be influenced by positive socialization by parents, other family members, teachers and social networks. The impact of stress is considerable and well documented. This research seeks to understand further how a student's financial self-efficacy and financial socialization may impact feelings of financial stress and influence the resulting coping choices.

This deeper understanding may provide insight into the steps that parents, educators, counselors and others may take to moderate a college student's sense of financial stress and increase the likelihood they do not make choices to compromise their college education. Further, a deeper understanding of how financial self-efficacy and financial socialization influence financial stress may help parents, educators, counselors and other leaders of youth to better implement strategies intended to increase financial self-efficacy and better financially socialize young people. This deeper understanding may help educators and administrators develop and implement education programs and counseling designed to improve the likelihood of students not considering coping choices harmful to their academic performance or opportunities.

Approximately 28% of incoming college freshman drop out of college after their first year while 57% of those who stay take longer than 6 years to complete their undergraduate studies (BLS, 2017). Keeping students in school and on track to graduate in a timely manner is a priority for parents, educators, administrators and the students themselves. This research provides insights that may positively influence those results.

## **Transactional Model of Stress and Coping Theory**

Medically, stress is defined as the deviation in an individual's homeostasis caused by the circumstances of life (Lazarus, 1990). Stress has been studied for several centuries, initially focusing on the physiological and the fight or flight response to stress (Cannon, 1932). These early studies of the flight or fight response were the first examination of coping responses (Lazarus & Folkman, 1984). The Transactional Model of Stress and Coping Theory (stress theory) proposes the deviations from homeostasis are the result of individual reactions to life events (Lazarus & Folkman, 1984). Stress theory goes beyond the traditional medical view of physiological status to the psychology and suggests stress can be positive or negative. The underlying assumption of stress theory is that stress results from individual perceptions and assessment of threat and perceived resources thus stress is not perceived uniformly across a population. Our individual perceptions are the result of personal antecedents which are our individual characteristics or circumstances. These personal antecedents affect the appraisals throughout the stress and coping framework (Jerusalem & Schwarzer, 1992).

These perceptions and assessments occur as an individual is exposed to an event or situation (Folkman, Lazarus, Pimley, & Novacek, 1987). The individual makes a primary appraisal to understand if the situation poses a threat. Should that individual perceive the situation poses no threat to them, then no stress is created, and the individual remains at homeostasis (Folkman et al., 1987). If the individual perceives that situation is threatening to them, then the second appraisal is made where the individual assesses their perceived ability to manage the threat (Folkman et al., 1987). This primary appraisal considers the individual's personal antecedents and their current situation including considering their sense of vulnerability. In the second appraisal the individual takes account of their resources including physical,

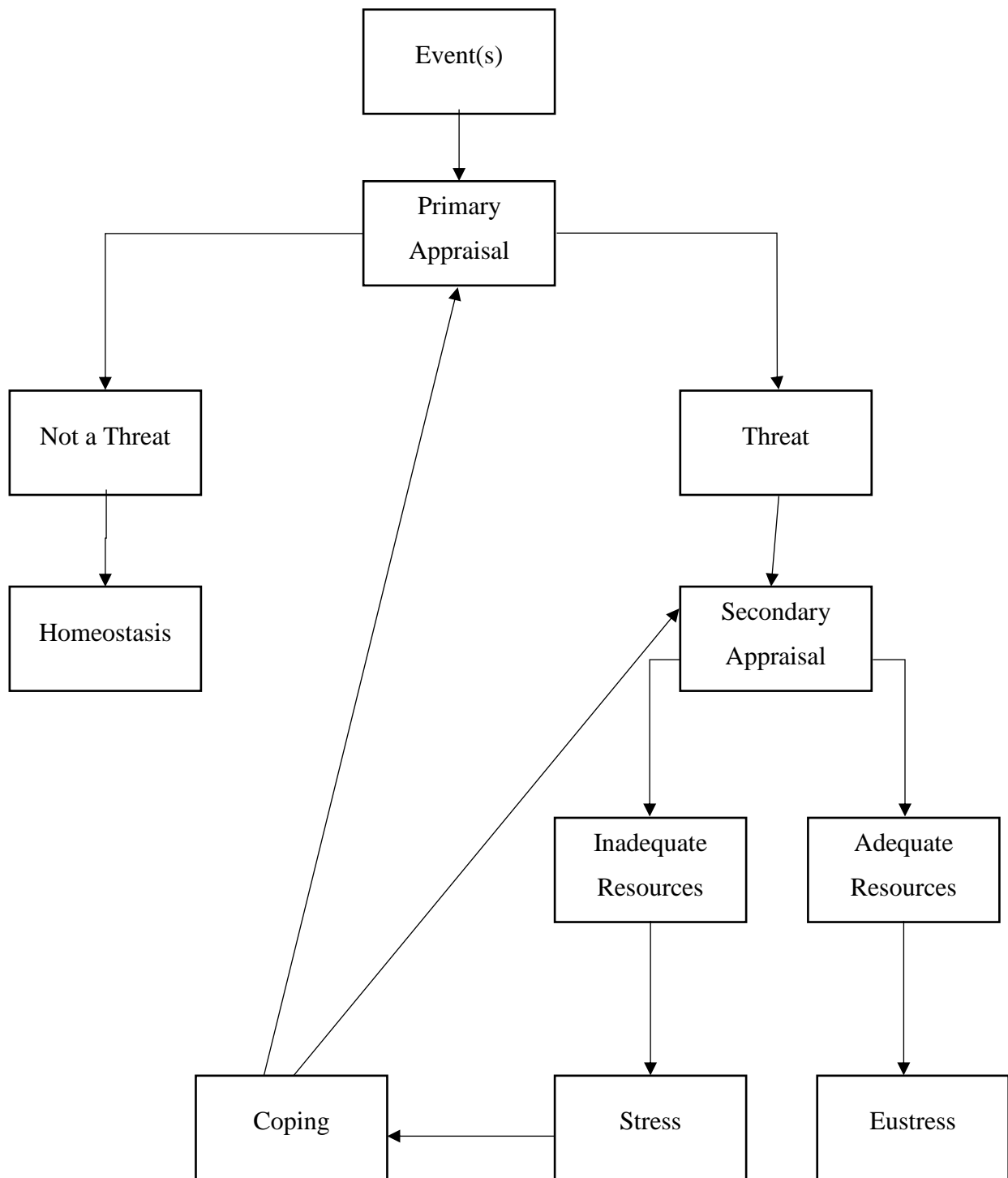
cognitive, financial, and other resources they believe are available to them (Folkman et al., 1987). An assumption of stress theory is that the individual assesses their perception of the strength and availability of those resources; thus, this is not an objective assessment but rather the individual's perceptions of those resources and their access to those resources. The individual's view of stress in general influences their perception of the stressor at hand so if the individual believes that stress is debilitating, they are likely to appraise the negative aspects of their situation thus reinforcing their stress in a debilitating belief leading to further appraisal of the negative aspects of the situation (Crum, Salovey, & Achor, 2013; Kilby & Sherman, 2016). Ultimately, this circular reinforcement may lead to coping strategies to avoid the potentially stress filled situations entirely (Crum et al., 2013; Kilby & Sherman, 2016). However, those who may be energized by stress may focus on those positive aspects of the situation which reinforces their belief that stress is energizing (Crum et al., 2013; Kilby & Sherman, 2016). An example of this mindset might be those who thrive on competition. An important understanding is that this stress mindset is subjective and is a "continuum from stress is debilitating to stress is enhancing, whereby it is possible to hold a mix of both enhancing and debilitating beliefs" (Crum et al., 2013, p. 716; Kilby & Sherman, 2016).

The circumstances of life that may create stress, stressors, take many forms. The stressors may be a single event or a series of events, regardless of severity as even seemingly minor events may be stressors especially if they are chronic. Chronic stressors are recurring, persistent challenges which may be the result of conflicting social roles, the variety and complexity of choices we face, or they may be a part of our physical environment (Serido, Almeida, & Wethington, 2004). As with chronic illnesses, the uncertainty of a resolution and a lack of control make chronic stressors particularly difficult to cope with (Serido et al., 2004). Another

form of potential stress are daily hassles, defined as more minor aspects of daily living such as commuting, shopping, or working. Daily hassles may also include unexpected minor disruptions such as a car that doesn't start or a longer than usual commute due to weather. Though minor in impact the unanticipated nature of those disruptions makes coping challenging (Serido et al., 2004). The accumulation of daily hassles may result in more significant negative health outcomes than less frequent major stressful events (Serido et al., 2004; Lazarus, 1984). The most severe set of stressors occurs when an individual is appraising both chronic stressors and daily hassles. The presence of either chronic stressors or daily hassles may be amplified when the other presents as well working in combination to accelerate or increase perceptions of stress (Serido et al., 2004). If the person who views the stressor as a threat assesses that they control the resources necessary to manage the situation then stress theory suggests positive stress, eustress, is created. On the other hand, if the person perceives their resources are not adequate to manage the situation then negative stress is created. Figure 1-1 outlines the Transactional Model of Stress and Coping.



**Figure 1-1: Transactional Model of Stress and Coping Theory (Lazarus & Folkman, 1984)**



Positive stress, or eustress, is a feeling of accomplishment or achievement (Nelson & Simmons, 2004). The term was created by Selye (1974) to distinguish between the results of various stressors. Eustress is a result of the primary and secondary appraisals of stressors and resources (Lazarus & Folkman, 1984). For example, some may view an event as discouraging while others may view the same event as a positive challenge. Eustress may be indicated by a person responding to a stressor with a sense of meaning, hope, or vigor. Eustress has been positively associated with life satisfaction and well-being (Nelson & Simmons, 2004). The intensity of feeling eustress may not be related to the significance of the event. Studies have found that relatively small episodes of positive stress, known as uplifts, may result in profound feelings of accomplishment or achievement (Aldwin, Jeong, Igarashi, & Spiro, 2014). The magnitude of the sense of uplift is a function of both individual and environmental characteristics (Aldwin et al., 2014).

An example of eustress explored in this research may be work study, a form of financial aid. Work study gives select students the opportunity to pay a portion of their tuition by working at the university (U.S. Department of Education, 2015). This type of financial aid may be viewed as a threat to some students in that it affects a resource, their time. Of these students, some may find they have the time to devote to work study which would likely create eustress for them. Or they may perceive the financial return on their time investment as greater than the other uses of their time. They have perceived a threat to their time, assessed that threat as within their control and believe it is a positive event for them.

Negative stress is created when an event is considered threatening and outside of the control and resources of the impacted individual (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986; Lazarus & Folkman, 1984). Some types of financial aid may create negative

stress. Student loans may be perceived as threatening by some students. Of these students, some may perceive this commitment of future resources to be beyond their control leading to negative stress. They may assess student loan debt as a threat or perceive their resources to cope with that threat to be limited thus creating negative stress.

### **Appraisals**

The Transactional Model of Stress and Coping Theory states that individuals make assessments of events they face, and these events may be singular, or an accumulation of lesser, routine events termed hassles (Vossel, 1990). An accumulation of these hassles more often leads to perceptions of stress than do singular events (Lazarus, 1990; Vossel, 1990). This potentially increased magnitude due to hassles has also been observed in college students (Britt, Mendiola, Schink, Tibbetts, & Jones, 2016). The initial appraisal is threat assessment. The individual assesses if the event or accumulation of events is a threat. The secondary appraisal is made by those who perceive a threat and they assess their abilities to manage that threat. These appraisals occur concurrently as the secondary appraisal may influence the primary appraisal and the primary appraisal will influence the secondary (Jerusalem & Schwarzer, 1992; Lazarus, 1990). These appraisals lead directly to the choices made by the individual to cope with the event(s) at hand. In theory, if an appraisal assesses inadequate resources, then the coping choice may be more problem-focused. Conversely, if the appraisal assesses the situation as overwhelming then more emotion-focused coping choices are likely to be used (Johnstone & Feeney, 2015).

The result of the primary appraisal is the situation is either benign or potentially stressful (Lazarus & Folkman 1984). Appraisals viewing the events as stressful may further be defined as challenge, threat or harm/loss (Jerusalem & Schwarzer, 1992). The challenge stress appraisal occurs when the individual views the situation as an opportunity with a potentially positive

outcome or one for which the person feels particularly well-prepared (Jerusalem & Schwarzer, 1992). The threat stress appraisal occurs when the situation is appraised as potentially harmful or when the person senses they lack adequate resources to avoid harm (Jerusalem & Schwarzer, 1992). The harm/loss appraisal happens when harm or loss has already occurred, and the person is faced with attempting to mitigate that harm or loss (Jerusalem & Schwarzer, 1992). Factors influencing the primary appraisal are those subject to harm or loss such as employment, other income sources, and obligations such as debt which may increase (Lazarus & Folkman, 1984; Sincero, 2012)

These appraisals are influenced by personal antecedents, that which has already occurred and understood by the person (Jerusalem & Schwarzer, 1992). Anxiety or unease of facing an expected event such as an exam has been found to impact the appraisal process. If the anxiety is perceived as facilitative those individuals were less likely to appraise that event as a threat (Strack & Esteves, 2015). Conversely, when anxiety was considered non-facilitative, that it is perceived to be a hindrance, the individual is more likely to appraise the situation as threatening (Strack & Esteves, 2015). Social networks may play a role in the appraisal process. Members within a social network are more likely to sense stress across group members than with those outside of their social network (Gallagher, Meaney, & Muldoon, 2014). Social networks with higher levels of communication and sharing may lead to lower stress levels in their members (Guo, Mrug, & Knight, 2017; Kim, Spangler, & Gutter, 2016). This socialization is hypothesized to improve understanding of resources and access to those resources thus influencing both the appraisal of a threat and the means to cope with that threat (Guo et al., 2017). Self-efficacy has been positively associated with lower levels of perceived stress (Schönfeld, Preusser, & Margraf, 2017).

Personal antecedents such as demographic characteristics including gender, ethnicity, income, and age have been correlated to perceptions of stress (Folkman & Lazarus, 1980; Valentino, Moore, Cleveland, Greenberg, & Tan, 2014). Age is related to the perception of daily hassles, older adults have been shown to perceive fewer daily hassle compared to younger adults (Serido et al., 2004). Additional research demonstrated a U-shaped relationship between age and perception of daily hassles with young adults and older adults (over age 65) both feeling higher levels of daily hassles while middle aged adults perceived lower levels of daily hassles (Aldwin et al., 2014). Both studies agree that young adults perceive higher levels of daily hassles. Females tend to sense stress more than males, which is theorized to be linked to different socialization of males and females (Matud, 2004; Ptacek, Smith, & Dodge, 1994). Knowledge has been associated with lowering levels of stress through increasing education around resources (Pelletier, Lytle, & Laska, 2016).

The current study used demographic characteristics as personal antecedents (Jerusalem & Schwarzer, 1992). In addition to personal antecedents, the student's circumstances perceived to be at risk of harm or loss influenced their primary appraisal of threat or not threat (Lazarus & Folkman, 1984; Sincero, 2012). The current study measured these student's at risk circumstances considering their current employment, expected income at graduation and ten years hence, the sources of funds used for their college expenses, and their expected student loan total amount at graduation. These variables are included in this model as influences of the primary appraisal. Secondary appraisals are influences by feelings, attitudes and beliefs (Lazarus & Folkman, 1984; Sincero, 2012). Therefore, the final model considers the factors influencing the secondary appraisal including their objective financial knowledge, their financial behaviors, the extent to

which they rely on their parents for college expenses and the variables of interest; financial self-efficacy and financial socialization.

## **Coping**

Coping is a process to deal with the life circumstances to balance our biological, psychological, and social processes and includes the steps taken by those feeling stress to mediate or to moderate those feelings of stress (Selye, 1974; Lazarus, 1993). While appraisals rely on personal antecedents and perceptions of threat and resources, coping relies on anticipated results (Jerusalem & Schwarzer, 1992). Generally, coping steps attempt to change the emotions created in the appraisals or to change the circumstances creating the feelings of stress.

Attempting to change the individual reaction to stress is emotion-focused coping while attempting to change the circumstance creating the stress is problem-focused coping (Folkman & Lazarus, 1980; Krohne, 2002). Examples of emotion-focused coping include ignoring the problem or seeking refuge by indulging in alcohol, drugs or other escaping behaviors. Examples of problem-focused coping choices include earning more income, seeking counseling, and reducing expenses. Gender, race, socialization, and financial situation have been shown to influence the type of coping strategy chosen (Brougham, Zail, Mendoza, & Miller, 2009). Females, ethnic minorities and those with fewer financial resources tend to choose emotion-focused coping strategies (Brougham et al., 2009).

Individuals employing problem-focused coping are perceived to have more success in coping with stress and a higher level of achievement (Thomas, Cassady & Heller, 2017). Conversely individuals who employ emotion-focused coping strategies perceive a lower level of success or achievement (Thomas et al., 2017). Some researchers have suggested problem-focused coping is not always the preferred choice especially when facing a problem, such as

chronic health condition, that cannot be corrected (O'Driscoll, 2013). Coping has been described as proactive or reactive, the difference being the timing of the coping.

In college students, females report higher levels of stress than males and are more likely to choose emotion-focused coping. Although college males and females choose different coping methods for different sources of stress, both choose emotion-focused coping more than problem-focused coping choices (Brougham, et al., 2009). Coping choices are influenced by many factors. An individual's belief in their ability to cope, their self-efficacy, is one of the factors influencing the coping choice (MacNeil, Esposito-Smythers, Mehlenbeck, & Weismoore, 2012). Individuals who have lower levels of belief in their ability to cope are more likely to choose emotion-focused coping methods and are more likely to engage in riskier behaviors (MacNeil et al., 2012).

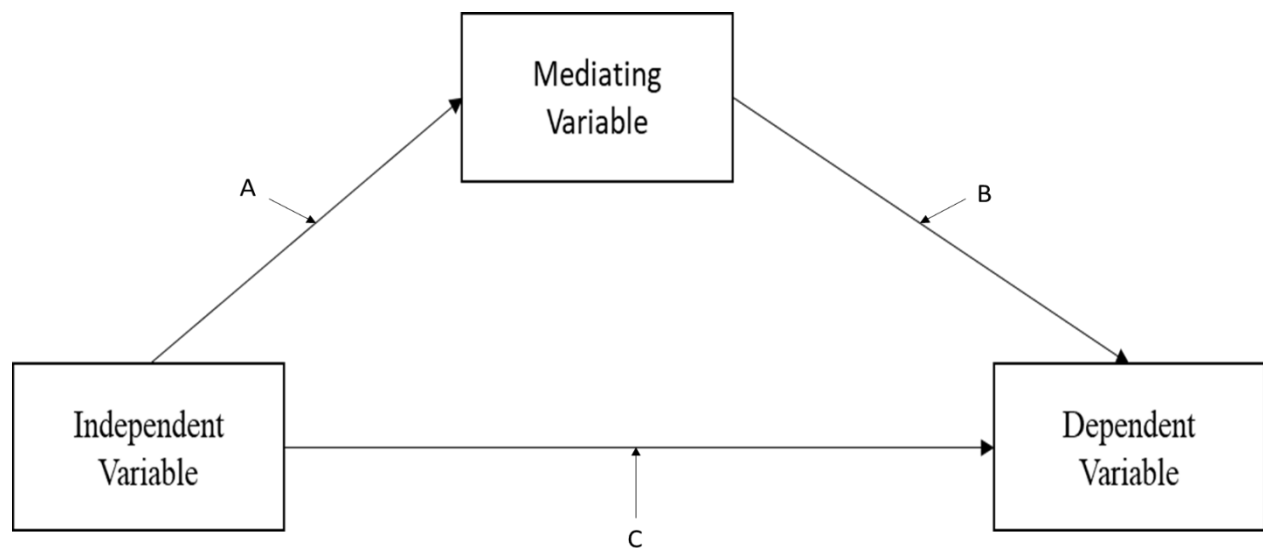
### **Factors Influencing Financial Stress and Coping Choices**

#### **Types of Influence**

Independent factors may influence feelings of stress in a number of ways. The relationship may be causative, where the changes in an independent factor or variable causes or creates corresponding changes in a dependent variable. These causative events are the stressors in the Theoretical Model of Stress and Coping (Lazarus & Folkman, 1984; Lazarus, 1993). The influences of independent variables on feelings of stress may impact stress beyond causation. These influences include mediating stress or moderating feelings of stress (MacKinnon, Krull, & Lockwood, 2000). Mediators are considered the cause of the relationship between the independent variables and the dependent variable, mediators are the matchmakers bringing together independent and dependent variables (Baron & Kenny, 1986; MacKinnon, 2011). Moderating variables influence the strength or direction of the relationship between independent and dependent variables (Baron & Kenny, 1986; MacKinnon, 2011).

A mediating variable accounts for the relationship between the independent or predictor variable and the dependent variable. For example, study of mediating variables have explained how physical events such as the weather influence our internal psychological processes (MacKinnon, 2011). Figure 1-2 outlines the mediating relationship.

**Figure 2-2 Mediation Model**

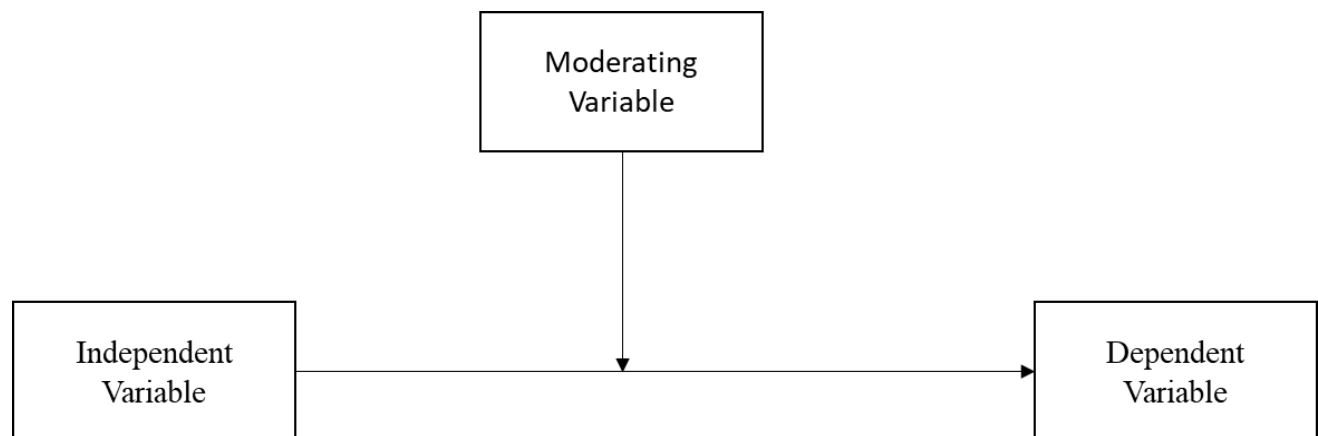


Baron and Kenny (1986) explain that mediation occurs when; (a) changes in the independent variable significantly account for dependent variable changes; (b) changes in the mediator significantly account for changes in the dependent variable, and (c) when paths a and b in Figure 2.1 are controlled, a previously significant relation between the independent and dependent variables is no longer significant. If path c in Figure 2.1 becomes zero, then there is evidence for complete mediation. Mediating variables are identified more accurately when there is a strong statistical relationship between independent and dependent variables and a low presence of moderating variables (Baron & Kenny, 1985; MacKinnon, 2011)



Moderating variables influence the strength or direction of a relationship (Baron & Kenny, 1986). Moderator variables are typically found when the relationship between independent and dependent variables is not consistent or when the relationship is expected to be strong but is not (Baron & Kenny, 1986). Moderating variables are quantitative and qualitative independent variables where mediating variables may be independent or dependent depending on the research (Baron & Kenny, 1986). Figure 1-3 outlines the relationships between independent, dependent and moderator variables.

**Figure 3-3 Moderation Model**



The influence of moderating variables is measured by evaluating the relationships between the independent variable and the dependent variable, the moderating variable and the dependent and the effects of the relationship between the independent variable and the moderating variable (Baron & Kenny, 1986; MacKinnon, 2011). Evidence for the presence of a moderating variable is found when the relationship between the independent variable and dependent variable is influenced in magnitude or direction (Baron & Kenny, 1986). In multivariate analysis, moderation is measured by evaluating the impact of a variable on the

strength of the analysis and the fit of the model (Harzer & Ruch, 2015). Researchers have proposed the presence of variables that moderate the mediators or mediate the moderators. A proposed example is the introduction of an independent variable which influence the strength of a mediator relationship thus moderating the mediator variable. These complex interactions are in theory only today as no consistent statistical methods exist to accurately measure these proposed variable influences. The recommendation is to rely on research construction and theory to assess the influences of mediators and moderators (Fairchild, & MacKinnon, 2009).

## **Research Questions and Hypotheses**

### **Research Questions**

The impact of stress, including financial stress, may significantly impact the health and relationships of university students. Understanding the potential causes of financial stress and the influences on how students may cope with financial stress is important to developing steps to moderate the creation of stress and to encourage the choice of effective coping strategies.

Therefore, this research seeks to answer the following questions:

1. What are the contributors to undergraduate student's feelings of financial stress?
2. What influences undergraduate student's coping choices

### **Hypotheses**

The appraisal and coping processes in stress theory are influenced by our personal antecedents, our perceptions of threat and our perceptions of our resources to manage that threat and our perceived access to those resources. Personal antecedents such as gender, age and ethnicity have been linked to higher levels of perceived stress. The primary appraisal of threat is connected to perceptions of harm such as loss of income. Secondary appraisal influences such as

self-efficacy and socialization have been found to moderate those feelings of stress. Those with higher levels of financial stress and higher levels of financial self-efficacy have been shown to choose the problem-focused coping choice of help seeking. This research explores the influences on college student financial stress and the influences on problem-focused coping choices. The variables of interest are financial self-efficacy and financial socialization. Thus, the hypotheses tested by this research are:

**Personal Antecedents:**

*H<sub>1</sub>* Personal antecedents of female and ethnic minority students will perceive higher levels of negative stress

**Appraisal Influences:**

*H<sub>2</sub>* Higher levels of financial self-efficacy will be associated with lower levels of negative stress and financial self-efficacy will be a moderating influence

*H<sub>3</sub>* Higher levels of financial socialization will be associated with lower levels of negative stress and financial socialization will be a moderating influence

**Coping Choice Influences:**

*H<sub>4</sub>* Those with higher financial knowledge scores will be less likely to cope by adjusting academic schedules

*H<sub>5</sub>* Those with higher levels of financial self-efficacy will be less likely to cope by adjusting academic schedules

*H<sub>6</sub>* Those with higher levels of financial socialization will be less likely to cope by adjusting academic schedules.

## **Summary**

The many ecological changes college students face may potentially lead to feelings of stress. They face increased autonomy, different social networks and increase pressures. Stress theory explains how those feelings of stress may arise and the personal antecedents, primary appraisal influences and secondary appraisal influences leading to the feeling of stress. These feelings of stress are individual and influenced by many factors. This research explores the influences on college students' financial stress and the resulting coping choices. The results help inform parents, educators, administrators, policy-makers and others as they look to help moderate feelings of financial stress and influence coping choices in college students.

## **Chapter 2 - Literature Review**

### **Introduction to Stress**

Stress is a term used to describe the reaction of an item to increased or unusual external forces. Robert Hooke was one of the early prominent scientists measuring stress by observing the impact of weight on bridges (Lazarus, 1993). Hooke's studies considered the reaction of the structure, the bridge, to external forces, the weight of the load. Lazarus (1993) credited Hooke with the foundational understanding of stress as used by engineers, physicians, psychologists and researchers. The stress of soldering in both World War I and World War II was the subject of extensive research. The results evolved the theory of stress from neurological, war neurosis in WWI, to the psychological, shell shock, in WWII (Lazarus, 1993). The psychological impact of stress was further advanced by Hans Selye and Richard Lazarus (1993) who found the soldier's reactions to circumstances would vary significantly by individual rather than a more consistent reaction across troops. Contemporaries of Lazarus including Bandura and Antonovsky found individual characteristics such as self-efficacy or self-coherence influenced individual reactions to their circumstances reinforcing the premise that individual characteristics influence feelings of stress (Bandura, 1977; Antonovsky, 1987).

### **Causes of Stress**

Feelings of stress are individual reactions to their circumstances they perceive as threatening and they perceive as lacking the resources or access to resources to manage. These perceptions are individual based on our personal antecedents thus stress is individual and different for each of us (Selye, 1973). Hans Selye (1936) defined stress as "the non-specific response of the body to any demand for change" (p. 32). The non-specific nature of stress is in our reaction to stressors, those situations or circumstances we face in life (Selye, 1973).

Biologists study the influence of nutrition, hypoxia, dehydration, thermal stress, hypercapnia, pollution and other environmental stressors to understand the impact of these stressors on the physical person (Killen, Marras, Metcalfe, McKenzie, & Domenici, 2013). Their research found a relationship between environment stressors, stress and coping choices. The relationships may be direct or indirect where circumstances such as environmental factors mediate or moderate the impact of other stressors (Killen et al. 2013). Consistent with the Selye's (1973) foundational work continued through stress theory, our individual responses to environmental stressors will differ. For example, individuals facing food deprivation lose body mass at different rates impacting their stress and coping choices individually (Killen et al., 2013). As another example, two people may be cold when the temperature drops, but the rate and amount of change will be different for each (Selye, 1973). Like environmental stressors, emotional stressors may directly impact the assessment or coping process or may moderate or mediate other relationships in those processes (Chrousos, Loriaux, & Gold, 2013). Emotional stressors such as fear, frustration, conflict, and uncertainty are processed directly through our central nervous system or indirectly to the central nervous system through our limbic system (Chrousos et al., 2013). Neurologists suggest these different physiological stress processes are responsible for our individual choices when facing stress (Chrousos et al., 2013).

Another example of a potential source of stress are our social networks and interactions. Social stress is defined by psychologists as the daily social circumstances and social roles that the person or others may perceive to be problematic or undesirable (Ilfeld, 1977). Opportunities for social stress permeate our lives through interpersonal relationships at work, school and home. An example of a social stressor in the workplace is customer related social stress created when customers hold disproportionate or ambiguous expectations, are disliked or are verbally

aggressive. The results are stress leading to employee burnout and turnover (Dormann & Zapf, 2004). For college students, social networks play an important role in stress appraisals and coping choices, especially for first generation college students (Jenkins, Belanger, Connally, Boals, & Durón, 2013).

### **Financial Stress**

Financial stress is the emotional, intellectual, and behavioral responses that may occur as an individual assesses their financial resources relative to their financial obligations (Aldana & Liljenquist, 1998). Further, financial stress may be positive when the individual views their resources as adequate to meet their obligations and negative when they perceive those resources to be inadequate (Prawitz et al., 2006). Financial stress is not only the inability to meet financial obligations; it is influenced by attitudes, beliefs, perceptions and appraisals of resources and access to those resources (Northern, O'Brien, & Goetz, 2010). While financial stress is clearly linked to personal finances there are many other factors which have been linked to overall stress and to financial stress including (a) age, (b) gender, (c) ethnicity, and (d) socioeconomic status (Folkman & Lazarus, 1980; Heckman, Lim & Montalto, 2014; Northern et al., 2010; Valentino et al., 2014). For general stress and financial stress, these characteristics are the stressors and are moderators of other stressors relative to stress (Romo, 2014). Financial issues especially concern over family finances, the ability to pay for college and becoming a financial burden to one's family are associated with stress in college students (Aselton, 2012).

Researchers have found associations between overall stress and age in a U-shaped relationship where younger and older ages perceive higher levels of stress while those who are middle-aged tend to perceive less stress (Folkman et al., 1987). However, the relationship between age and financial stress is more complex. Generally, age has been inversely associated

with financial stress, we perceive less financial stress as we age, but that relationship is influenced by socioeconomic factors (Valentino et al., 2014). As individual's age they are prone to emotion-focused coping choices such as positive reappraisals as they face financial stress (Wrosch, Heckhausen & Lachman, 2000). With positive reappraisals the person reframes the circumstance they are facing into a more positive perspective. It is theorized older adults choose these coping actions as they lack access to problem-focused choices such as finding a more lucrative career (Wrosch et al., 2000). Female and minority college students have been shown to perceive higher levels of financial stress than their male or white peers (Gutter & Copur, 2011).

Socioeconomic status has been shown to have a significant impact on financial stress (Romo, 2014; Valentino et al., 2014). Having fewer financial resources available to an individual lead to higher levels of financial stress (Valentino et al., 2014) as would be predicted by stress theory. Income has been demonstrated to have a negative relationship with financial stress, lower income leads to higher financial stress levels (Valentino et al., 2014). The influences of self-efficacy, socialization, and knowledge have been found to mitigate financial stress as well (Solberg & Viliarreal, 1997; Robb, 2017). Attitudes toward finances may also play a role in a feeling of financial stress. Financial self-efficacy and optimism have been shown to be inversely related to financial stress (Heckman et al., 2014). Optimism has been defined as a positive expectation or expectations that positive outcomes for the individual (Heckman et al., 2014; Scheier & Carver, 1987). College student optimism is associated with positive health results, improved academic performance, and lower reported stress levels (Heckman et al., 2014).

### **College Student Stress**

As students enter college, they often face new potential stressors (Bronfenbrenner, 1979; Holinka, 2015). These stressors may be academic, financial, time, social and a combination of



these stressors. The many changes facing college students have been termed ecological transitions (Bronfenbrenner, 1979). The ecological transitions facing college students include less parental supervision, more autonomy and new interpersonal relationships (Holinka, 2015). Increased academic expectations, both real and perceived, influence feelings of stress (Holinka, 2015). College age students have the highest levels of stress of any age group (Coccia & Darling, 2016). More specifically, studies have shown that up to 80% of college students are moderately stressed and 10 to 12% are severely stressed (Coccia & Darling, 2016). The rate of increase in college student stress has been described as “alarming” (King et al., 2014, p. 133). These increasing levels of stress are resulting in increasing levels of mental and physical health problems in college students (King et al., 2014). Research suggests that stressors narrow the perceived choices available for college students and may limit their ability to fully understand the consequences of their choices resulting in an increase in riskier choices (Wemm & Wulfert, 2017).

The mental health results associated with college student stress are significant. Mental health problems in student populations range from 2% to over 50% with estimates of students who need professional mental health intervention ranging up to 10% of the population (Kumaraswamy, 2013). Anxiety and depression are common mental health problems on college campuses with 25% of students reporting some symptoms of anxiety or depression (Kumaraswamy, 2013). Stress related mental health problems in college students have been found to be significantly associated with gender, ethnicity, religiosity, social network, living on campus, and financial situation (Eisenberg, Hunt, & Speer, 2013). Females, ethnic minorities, those less religious, those lacking a strong social network, those living off campus and those feeling financial pressures are associated with higher rates of mental health issues (Eisenberg et

al., 2013). Other studies have found higher mental health problems associated with living off campus, higher class rank and academic performance (Beiter et al., 2015). While the stressors may differ among studies and students, there is agreement that stress adversely impacts the mental health of college students. Adverse mental health outcomes such as depression and suicide occur at high rates in college students with suicide being the second leading cause of death for college youth (Schwartz, 2011; ACHA, 2016).

The physical results associated with college student stress are also significant. Academic stress, especially during exams, and coping with that stress may be significantly associated with musculoskeletal disorders that impact muscles, tendons, ligaments, nerves, discs and blood vessels (Ekpenyong et al. 2013). Physical exercise may be negatively related to feelings of stress and those with higher levels of stress are less likely to exercise (Winnick & Porretta, 2016). Similarly, it has been found that students with lower levels of perceived stress are more likely to engage in health promoting behaviors than their more stressed peers (Li & Lindsey, 2013).

### **College Student Financial Stress**

One area of potential stress for college students, funding their college education, has grown significantly the past three decades. In today's dollars, the average cost of total tuition, fees, room and board rates charged for full-time undergraduate students has grown from \$3,682 in 1985 to \$18,632 in 2016 (US Department of Education, 2017). This increase of over 500% is more than twice the rate of inflation during these same 30 years (US Department of Labor, 2017). Researchers found these financial items are among the most stressful for college students: (a) the need to repay loans, (b) the cost of education, (c) borrowing money for college, and (d) the need to find a job after graduation being four of the top five stressors for college students (Trombitas, 2012). Stress theory would explain the stress created by those sampled as they

viewed these items as threatening to them and then viewed their resources, or control of those resources, to be lacking. Even broader financial issues, such as the economic downturn in 2008, were positively related with poor mental health and have been found to create stress in college students (Guo, Wang, Johnson & Diaz, 2011; Trombitas, 2012).

An increasing number of undergraduates are turning to financial aid to help with these costs (US Department of Education, 2017). Financial aid takes many forms from loans to grants to merit-based scholarships. The structure of a student's aid package has been found to influence the choice to enroll, where to enroll and once enrolled, the choice to stay in school. Research has found connections between financial aid and (a) higher enrollment rates and (b) improved scholastic performance (Dynarski & Scott-Clayton, 2013). The attendance and performance results from aid in the form of loans or grants has been inconclusive resulting in a call for more research on the effects on students of types of financial aid, especially loans (Dynarski & Scott-Clayton, 2013; Gross, Torres, & Zerquera, 2013).

The US federal government became a financier of post-secondary education with the enactment of the Higher Education Act in 1965 (Dynarski & Scott-Clayton, 2013). The premise underlying this legislation was to promote more education by effectively lowering college cost thereby lowering the general reduction in dropout rates leading to higher attainment rates, especially in minority students (Dynarski & Scott-Clayton, 2013; Gross et al., 2013). In 2016-17, undergraduate students received an average of \$14,400 per full-time student in financial aid: \$8,440 in grants, \$4,620 in federal loans, \$1,280 in education tax credits and deductions, and \$60 in Federal Work-Study. Of the total federal financial aid, 58% was in the form of grants and 32% was in the form of federal loans (College Board, 2017). Loan amounts are positively related to tuition costs; however, tuition costs are not related to repayment or default rates. American

College Testing (ACT) scores have no influence on debt amounts, but are inversely related to default rates (Belfield, 2013).

Financial aid has been linked to stress in college students in several ways. Although financial aid has grown it has not kept pace with the cost of tuition thus less financial aid relative to tuition costs may create stress (Dynarski & Scott-Clayton, 2013). Debt has been shown to be a stressor in college students, so financial aid in the form of debt may create stress (Heckman et al., 2014). The financial pressures on undergraduates go beyond those of tuition costs and paying for it to include other forms of debt. Financial pressures facing college students have grown significantly the past 30 years and have the potential to create financial stress in those students. There is evidence that aid in the form of student loans is linked to lesser mental acuity and psychological functioning both during enrolment and after school (Walsemann, Gee, & Gentile, 2015). A criticism of the financial aid program is the complexity in the application process. This complexity may create decision paralysis for families who need financial aid the most (Belfield, 2013). A disconnect between the granting of financial aid and its impact elsewhere has been demonstrated, especially between aid and income taxes, deepening that confusion noted earlier. In these cases, financial aid reduce may have the unintended consequence of reducing college availability (Dynarski & Scott-Clayton, 2013). Students self-reporting higher student loan amounts are linked to higher odds of choosing to drop out compared to students with no debt (Britt, Ammerman, Barrett & Jones, 2017). Interestingly, student loan debt amounts have also been linked to college students coping by seeking financial help (Lim, Heckman, S. Montalto & Letkiewicz, 2014).

In college students, objective financial knowledge and financial resources are related to their feelings of financial stress (Britt et al., 2016). These students with high levels of financial

stress may be more likely to seek help as well (Lim et al., 2014). Financial stress in college students may not directly impact their academic performance as measured by GPA however items considered as part of the stress appraisal process such as financial resources do impact GPA (Britt et al., 2016). This research investigates the impact of personal antecedents, primary appraisal variables and secondary appraisal variables on academic outcomes beyond GPA such as neglecting academics and considering stopping or dropping out.

### **Summary of Stress**

Stress is a concept studied by engineers, physicians, physicists, psychologists and researchers seeking to understand reactions to circumstances. The reactions may be physical as in the case of a bridge flexing to a weight or psychological as one copes emotionally with the rigors of the day. Reactions to stressor are individual as individual appraise the stressors and their resources leading to feeling of accomplishment, apathy stress. Those feeling stress will take coping steps to influence those feelings with some of those steps dealing with the stress while others deal with their reaction to the stress. Stress appraisal and coping is an ongoing process which has significant impact on the individual.

### **Coping**

Stressors demand for change in response to that stressor. For example, a temperature drop demands that we shiver or add clothing or some other coping choice (Selye, 1973). Ignoring the stressor is a response as well (Selye, 1973). In his pioneering research on General Adaptive Theory and ultimately stress, Selye (1965) suggested that an individual is constantly under some form of stress. This constancy which demands a response creates an ongoing process of stressor to response to new or modified stressor to response. This is an ongoing process where each

demand is met with a response which in turn is intended to influence the demand which then creates another response (Selye, 1965).

Our physical reactions to stress have been described as three phases; a) initially the stress is hardship, b) then the individual adjusts to the stress, c) finally they are unable to respond or adjust to the stressor at all (Selye, 2013). Physical fatigue has been described as the primary reason for this progression. We learn to adjust and expend considerable energy until exhaustion and inability to adjust (Selye, 2013). Considerable research has linked this progression to undesirable health outcomes known as “diseases of adaptation or stress diseases” (Selye, 2013, p. 29). These diseases occur when we lack or lose the ability to adapt (Selye, 2013). These health outcomes are physical, psychological or a combination of those. Stress has been linked to suppression of our immune system leading to various physical ailments including increased risk for cancer (Dhabhar, 2014). Estimates show 73% of the population experience psychological symptoms of stress while 77% exhibit physical symptoms of stress (Chudzik, Jarosz, Gołębiowska, & Gołębiowska, 2017).

Lazarus (1998) expanded Selye’s work and included social as an outcome of the stressor-response process. Further, Lazarus claimed the most “potentially pathological” stress interactions occur at the social level (1998, p. 191). The social system may also provide context for stressor created physical and psychological responses as individuals will rely on their social context to inform their stress response (Lazarus, 1998). Stressors create emotional responses complementing or supplementing the physical, social or physiological responses noted (Lazarus & Cohen, 1977). These stress emotions include anxiety, fear, guilt, anger, sadness-depression, and jealousy and are linked to life satisfaction and overall morale (Lazarus & Cohen, 1977). Further, these stress emotions are linked to our perspective and impact our ability to solve

problems, interact with our social networks and our physical and mental health (Lazarus & Cohen, 1977). For researchers, the presence of these stress emotions indicates a stressor has been introduced and a response has been made (Lazarus & Cohen, 1977). The presence of this evidence may improve researcher ability to identify feelings of stress and the corresponding coping choices (Lazarus & Cohen, 1977). Stress is a process shrouded in emotion where specific stressors will result in non-specific coping steps. The social, physical and psychological outcomes of this stress process are significant.

Financial coping strategies have been found to include problem – focused choices such as expense management, debt management, increased employment, seeking financial help as well as emotion-focused strategies such as denial, avoidance and ignorance (Grable & Joo, 1999; Lim et al., 2014). This research found financial self-efficacy to be a moderating influence for the financially stressed to seek help (Lim et al., 2014).

### **College Student Coping**

College students are more likely than their non-college attending peers to choose undesirable emotion focused coping choices such as binge drinking (Johnston, O'Malley, & Bachman, 2000; Johnston et al., 2015) Almost half of all college students reporting binge drinking behavior (NLAA, 2015b). Eating disorders, especially among female college students, have been associated with stress (Bennett, Greene, & Schwartz-Barcott, 2013). The stressors for eating pathology tend to be feelings of failure in female college students and feelings of anxiety in their male peers. Both genders use unhealthy eating to cope with stress (Boggiano et al., 2017).

Social networks are also impacted by the feelings of stress. Perceived stress impacts the individual and their social interactions. There is a documented withdrawal from interpersonal relationships and an increase in smartphone and internet usage and addiction because of feeling

stress (Deatherage, Servaty-Seib, & Aksoz, 2014). Research on the impact of withdrawing to the internet or smartphones links those coping choices to higher levels of perceived stress and to lower levels of life satisfaction (Samaha & Hawi, 2016).

Those sensing stress may take actions to reduce the threat of the event at the center of the stress or to produce resources to manage the threat. These are known as coping strategies and take the form of focusing on the problem or focusing on the individual's reaction to the threat (Lazarus, 1993). Those choosing problem-focused coping report higher levels of success and achievement (Thomas et al., 2017). Withdrawing from social networks may be an emotion-focused coping mechanism to moderate perceived stress but withdrawing socially may contribute to higher levels of stress (Friedlander et al., 2007).

College students facing financial stress choose to cope with that stress by either facing the problem or by working to adjust their reactions to it. Facing the problem directly is problem-focused coping while attempting to adjust the reaction is emotion-focused coping. Examples of problem-focused coping choices are those studied here, adjusting academic schedules to better manage finances and time. Emotion-focused coping choices chosen by college students include ignoring the problem or avoiding it through excessive use of alcohol or drugs. The choice of coping strategy, either problem or emotion focused, has been found to impact career choices (Tsaur, Ku, & Luoh, 2016). Some problem focused coping strategies will directly impact academic achievement when students drop classes or leave school, the coping options explored in this research. Academic performance has been found to be negatively impacted by those student's using emotion-focused coping strategies. Students utilizing emotion-focused strategies were found to be less academically motivated (Struthers, Perry, & Menec, 2000). There are many



factors influencing the individual's coping strategy choice, this research's influences of interest are financial knowledge, financial self-efficacy, and financial socialization.

Financial stress and the resulting coping choices may impact the student's prospects, directly through problem-focused coping and indirectly through emotion-focused coping. College student optimism about their future has been associated with depressive symptoms and suicide rates, those with higher levels of optimism demonstrated lower reported levels of depression and suicides (Chang et al., 2016). This research will examine the factors influencing college student's future expectations with an interest in understanding the influences of financial stress and problem-focused coping.

### **Financial Self-Efficacy**

Self-efficacy is defined as the conviction that a person can execute the behavior necessary to produce a specific outcome (Bandura, 1977). The individual possesses a belief which may be demonstrated in action but may not be in reality. Bandura suggested that the stronger the perceived self-efficacy, the more effort and persistence a person will demonstrate to overcome obstacles to attain efficacy expectations (1977). Therefore, the individuals with higher levels of self-efficacy are more confident in their ability to achieve a desired result and deal with adversity (Bandura, 1977). Self-efficacy is considered an important component in managing stress (Robb, 2017). Experiments have shown those with high levels of self-efficacy more favorably view stressors than do their peers with lower levels of self-efficacy (Schwarzer, 2014).

The stability of these self-efficacy levels may influence the significance of the self-efficacy. Research had found the more stable the self-efficacy over time, the more likely the individuals are to experience events which positively reinforce their self-efficacy (Bandura, 1982; Peng, Schaubroeck, & Xie, 2015). Importantly, those with low or unstable, self-efficacy

are less likely to employ problem-focused coping strategies and may use more emotion-focused coping and reinforce their lower or unstable self-efficacy (Mikulincer & Shaver, 2007, 2013).

Self-efficacy is a major influence on consumer behavior (Lown, 2011). Research finds a positive relationship between higher levels of financial self-efficacy lower feelings of financial stress (Heckman et al., 2014). Greater levels of financial self-efficacy are associated with greater feelings of financial well-being (Robb, 2017). Researchers find a positive relationship between financial well-being and overall well-being and as important to overall well-being as health, job satisfaction and relationship satisfaction (Netemeyer, Warmath, Fernandes, & Lynch, 2017).

### **Financial Socialization**

As children and youth many of us learn about finance from those in our environment, most often our parents. Through these environmental interactions we learn the skills and knowledge that help build the basis for our financial well-being (Drever, Odders-White, Kalish, Else-Quest, Hoagland, & Nelms, 2015). While one's social network is important in early development, research finds that parents are more important in socialization, including financial socialization than are teachers, friends or self-learning (Gudmunson & Danes, 2011; Shim et al., 2010). Moschis consumer socialization model suggests learning in families happens in three ways: (a) conscious or unconscious communication of norms and expectations resulting from observations or imitation of behaviors, (b) family members' positive and negative reinforcement, and (c) overt communication (1985).

A considerable amount of research has been conducted exploring the impact of parents in the development of children's attitudes about money; which has been termed financial socialization (Gudmunson & Danes, 2011). Research has identified the importance of early learning in the areas of consumption, spending, and saving (Allen & Oliva, 2001). Others have

noted the importance of teaching children about finances in an age appropriate fashion (Danes & Dunrud, 1993). This family financial socialization most often is informal daily interactions about money and family finances (Gudmunson & Danes, 2011). Students who reported having over-controlling parents reported significantly higher levels of depression and less satisfaction with life. Furthermore, the negative effects of helicopter parenting on college students' well-being were largely explained by the perceived violation of students' basic psychological needs for autonomy and competence (Schiffrin et al., 2014). Research has found that parents and financial education could predict young adults' financial acumen. Further, parents played a significant role in this financial socialization process and a greater role than experiences at work or financial education combined (Shim et al., 2010). A positive association between supportive financial socialization and financial practices has been found, reinforcing the positive impact of financial socialization (Kim & Chatterjee, 2013). The research suggest that financial socialization begins early in the home and tools such as childhood savings accounts and teaching children about credit may contribute to later positive financial behaviors (Kim & Chatterjee, 2013).

### **Financial Knowledge**

Research has found a positive relationship between financial knowledge and financial self-efficacy (Heckman & Grable, 2011). The connection between financial knowledge and financial stress has not been consistently demonstrated. Researchers find a significant relationship between perceived financial knowledge and financial stress though there was no significant relationship between actual financial knowledge and financial stress (Britt et al., 2016). Recent research also did not link financial knowledge to financial stress (Brooks &

Wheeler, 2018). This research uses both financial knowledge and financial self-efficacy as independent variables.

### **Literature Review Summary and Gap**

College students face major life changes, each with an opportunity to create stress. Their financial lives are increasingly more complex with a corresponding increase in stress creation opportunities. The result may be increased levels of stress, particularly financial stress, in those students. These levels of stress may be influenced by the student's socialization and self-efficacy. The coping choices students make to deal with that stress may profoundly impact their lives now and into the future. It is important to understand financial stress and coping choices in college students further with research methods to mitigate that stress. Therefore, it is important to understand influences on problem-focused coping choices so to provide guidance on those influences for parents, educators and policy makers.

Financial stress in college students has been associated with many negative outcomes including academic struggles, undesirable health and risky choices, and poor financial decisions (Aselton, 2012; Ross, Cleland, & Macleod, 2006; Trombitas, 2012). Understanding the significant consequences is important to understand the relationships and patterns better that contribute to college student feelings of financial stress. Research on the patterns leading to financial stress in college students does not consistently account for the financial self-efficacy, financial socialization, and financial resource considerations offered by this research (Northern et al., 2010). Researchers have called for more research "to more strongly establish the causal relationship between financial stress, financial education, financial knowledge, and financial self-efficacy" (Lim et al., 2014, p. 158 - 159). This research adds to the body of knowledge by

providing additional understanding of the influencers on financial stress and coping in college students, and the impact on their assessment of their future.

## **Chapter 3 - Methods**

### **Sample**

The National Student Financial Wellness Study (NSFWS) is a national survey of college students examining the financial attitudes, practices, and knowledge of students from institutions of higher education across the United States and one institution in Canada. This research focused on the respondents in the US. The purpose of the 2014 NSFWS is to gain a more thorough and accurate picture of the financial wellness of college students. The NSFWS was developed and administered by The Ohio State University in collaboration with coinvestigators from Cuyahoga Community College, DePaul University, Iowa State University, Oberlin College, Ohio University, and Santa Fe College. The survey was administered online during autumn 2014 or winter 2014 to random samples of students from 52 participating institutions. The overall response rate was 11.5% with 18,795 respondents from the US.

### **Independent Variables**

The appraisal processes in stress theory have been operationalized most often by considering the impact of personal antecedents, circumstances influencing the primary appraisal of threat and circumstances influences the secondary appraisal of resources and access to those resources (Lazarus & Folkman, 1984; Smith & Lazarus, 1993; Sincero, 2012). The personal antecedents are innate personal characteristics influencing the entire appraisal process (Smith & Lazarus, 1993). The primary appraisal process is influenced by personal antecedents and by those situations perceived as at risk of harm or loss (Lazarus & Folkman, 1984; Sincero, 2012). The secondary appraisal is influenced by personal antecedents, primary appraisal factors and by attitudes, beliefs and behaviors (Lazarus & Folkman, 1984; Smith & Lazarus, 1993; Sincero, 2012). Smith and Lazarus (1993) theorized the primary and secondary appraisals in stress theory

do not occur consecutively but rather concurrently with the secondary appraisal of resources influencing the primary appraisal of threat. Dealing with a series of minor life challenges, hassles, has been another way the appraisal concepts have been assessed (Schuster, Hammitt, & Moore, 2006). This method is founded in the belief that stress may be a function of an accumulation of events rather than a single event.

### **Personal Antecedents**

Demographic characteristics were used for the personal antecedents of stress theory (Jerusalem & Schwarzer, 1992) This research used personal antecedents of gender, race/ethnicity, actual age, grade point average, type of educational institution, qualification for in-state tuition, citizenship and if the student was a first generation college student. Prior research has demonstrated the impact of each of these on the perception of stress (Brougham et al., 2009; Li & Lindsey, 2013; Ptacek et al., 1994). The personal antecedents are outlined in Table 3-1.

**Table 3-1 Personal Antecedents**

Variable	Description
Gender	Gender is self-identified by the respondent.  This research categorizes gender into male, female and gender-other. The reference group is male.
Ethnicity	Ethnicity is self-identified by the respondent.  This research uses white, African American, Hispanic, Asian American and Ethnicity – other. White is the reference group.

Age	Age is categorized into 6 groups; 18-23,24-29, 30-39, 40-49, 50-59 and 60 or older.
Grade Point Average	Grade point average is a dichotomous variable of below 3.0 and above or equal to 3.0.
Type of Institution	Institution type is the type of school, four-year public university four year private university and two year public university. Four-year public university is the reference group.
Eligibility for in-state tuition	In state tuition is a dichotomous variable answering if the student qualifies for in state tuition.
International Citizen	International citizen is a dichotomous variable answering if the student is an international citizen.
First Generation	First generation college students are those who responded that neither of their parents attended college

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### **Primary Appraisal Variables**

The second hierarchical model introduced variables influencing the assessment of threat. The threat could be financial, physical, psychological, or emotional (Lazarus & Folkman, 1984).



This appraisal is influenced by their personal antecedents including the student's current situation. Their current situation included the student's financial circumstances such as employment. Employment was full-time or part-time with not working as the reference group. These choices were used as they reflect the student's perception of their work status. This model also included the student's future student loan and income expectations as categorical variables. This primary appraisal hierarchical tier included the sources of funds used to pay for college expenses including student loans, parent's income, parent's loans, scholarships/grants, employment, savings and other loans. These primary appraisal variables are outlined in Table 3-2.

**Table 3-2 Primary Appraisal Variables**

Variable	Description
Employment	Employment answers the question if the student is working at all, part-time, or full-time. Not working is the reference.
Expected Salary	Expected salary is a categorical variable asking what income the student expects at graduation when they enter the workforce and again at 10 years after they enter the workforce.
Sources of Funds used to Pay for College Expenses	Each source of funds used on college expenses are evaluated

- Student loans the student has taken out for themselves
- Parents or other family members from their current income or past savings
- Parents or other family members from loans taken out to assist me
- Scholarships or grants that don't need to be repaid
- Money from the student's current job
- Money from the student's savings
- Money borrowed from family or friends
- Credit cards

#### Student Loan Expected Amount

Student loan expected amount is the total amount of student loans the student expects to hold at graduation. This is asked of those who currently have student loans. Those who answered that question no were included in this variable as expecting no student loans at graduation.

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## Secondary Appraisal Variables

The final hierarchical model added to the personal antecedents and primary appraisal variables those items which influenced the secondary appraisal of resources. The secondary appraisal considered the resources available to the student including physical, financial, emotional, social, and psychological (Lazarus & Folkman, 1984). This appraisal also considered the student's access to these resources. Both their appraisal of resources and of access were subjective assessments. The secondary appraisal variables in this model were financial attitudes, behaviors, and the variables of interest, financial self-efficacy and financial socialization. These are outlined in Table 3-3.

**Table 3-3 Secondary Appraisal Variables**

Variable	Description
Financial Knowledge	Financial knowledge is assessed by the total number of correct responses of five financial knowledge questions.
Financial Behaviors	Financial behavior is the sum of these five financial behaviors; I have a weekly or monthly budget that I follow, I track my spending in order to stay within my budget, I track all debit card transactions/ checks to balance my account, I pay my bills on time every month, I add to my savings on a regular basis. The responses for each behavior ranges from 1 = Never to 4 = Always. The

standardized Cronbach Alpha for this scale is .64.

#### Reliance on Parental Support

Parental support is measured by how often parents are cited as the primary source of funding for these college expenses; tuition, housing, books, food, entertainment, apparel, family expenses, transportation or other purchases. Respondents choose from 7 categories for each of 9 expenses to pick which is the primary source of funds for that expense. The results are summed to determine how often parents are chosen as the primary source of funds for an expense to create a categorical scale. The possible range of summed responses is 0, parents are not chosen at all to 9 where parents are the primary source for all of their college related expenses.

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#### Financial Self-Efficacy

The one question, “I manage my money well”, was used to assess financial self-efficacy (Lim et al., 2014).

## **Financial Socialization**

Financial socialization was assessed by creating a scale compiling answers to questions asking to what extent parents or guardians were comfortable talking about money with the student, telling the student what the student needed to know about money management, and if the parents or guardians were role models of sound financial management. The Standardized Cronbach Alpha for this scale was .85. The questions and results may be found in Table A-3.

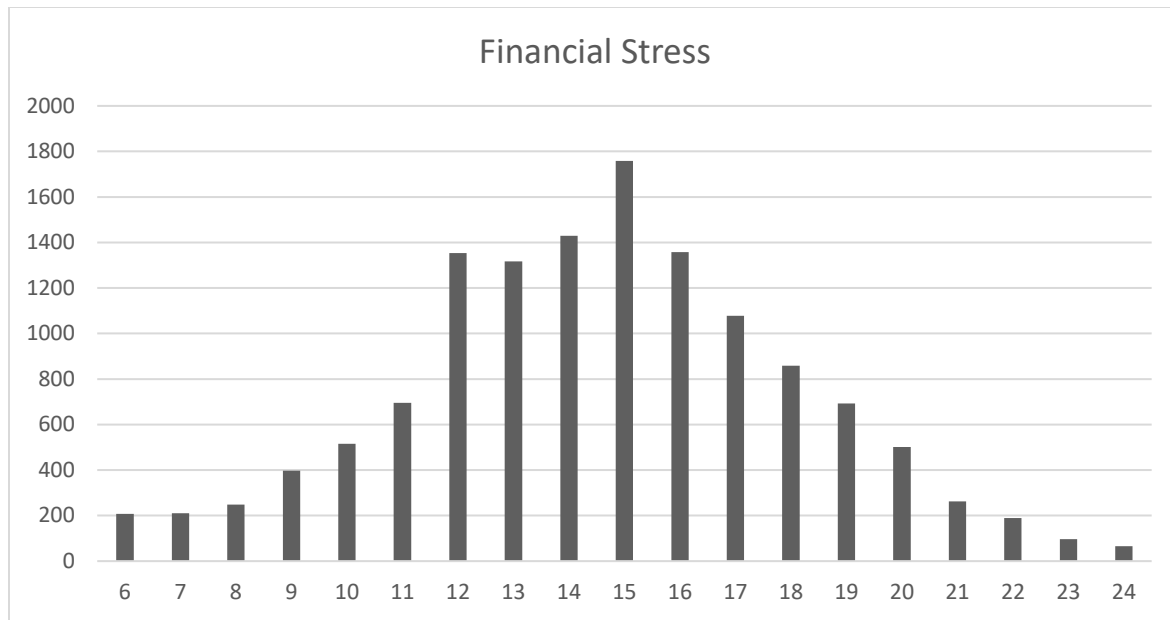
## **Dependent Variables**

This research examined two sets of dependent variables: financial stress and coping choices. The first set of empirical models examined the influences on a student's feeling of financial stress. The second set of empirical models sought to identify the influences on the problem-focused coping choices the students have made or considered.

### **Dependent Variable - Financial Stress**

The dependent variable in the first analysis was financial stress. Financial stress was measured by constructing a scale from the six questions in Table A-1. The possible responses were a 4-point Likert type scale from 1 = strongly disagree to 4 = strongly agree. Three of those six questions were reverse coded for consistent directionality. Scores were summated so that higher scores indicated higher levels of perceived financial stress. The scale had possible total scores of 6 – 24. The Standardized Cronbach Alpha for this scale was .77. As shown in Figure 3-1, this scale had a normal distribution with little kurtosis and skewness.

### **Figure 3-1 Financial Stress Scale**



### **Dependent Variable – Coping Choices**

The dependent variables in the second set of models were four problem-focused coping choices. The coping aspects of stress theory suggests those who perceive stress then take steps to cope with that stress (Lazarus, 1984). This research relied upon the questions in Table A-2. Each of these questions was analyzed separately using ordinal logistic regression to help understand the likely influences on these coping decisions. The independent variables were the personal antecedents, primary appraisal variables, and the secondary appraisal variables including the variables of interest: financial self-efficacy and financial socialization.

### **Empirical Models**

The influences on the continuous dependent variable of financial stress were examined with ordinary least squares regression models. Ordinary Least Squares regression is appropriate for continuous dependent variables where the data meets certain assumptions. These assumptions are (a) a linear relationship between the independent and dependent variables, (b) the sample is representative of the population, (c) the variance of error is the same for all observations, (d) the independent variables have little collinearity (Allison, 2012). These assumptions are met as this

sample has a linear relationship between independent and dependent variables, the sample was parametric, there was a similar error variance with minimal collinearity among the independent variables. The independent variables were tested for multicollinearity with variance inflation factors.

This was a three stage hierarchical analysis beginning with Model 1 examining the influences of personal antecedents on feelings of stress. Model 2 added to the personal antecedents from Model 1 with variables influencing the primary appraisal of threat/no-threat. Model 3 added the variables influencing the secondary appraisal to the variables from Model 2 and included the variables of interest: financial self-efficacy and financial socialization. Analysis was restricted to those who answered the financial stress scale questions with missing responses analyzed for patterns and impact on results. A robustness test was made using mean imputation for the missing responses with no impact on the results.

A further hierarchical regression analysis was conducted to investigate the types of influence the variables of interest may have on the overall relationship between the independent variables and the dependent variable of financial stress. The variables of interest were examined separately to the hierarchical model to investigate potential mediating and moderating effects. Mediation is indicated when independent variables have a significant relationship with the dependent variable where that relationship did not exist prior to the introduction of the mediating variable. Evidence of moderation was the impact of including the variable of interest on the strength of the model as measured by F Values and  $R^2$  (Harzer & Ruch, 2015).

The four coping choices were dichotomous variables analyzed with logistic regression. Logistic regression analysis is appropriate for dichotomous dependent variables (Allison, 2012). The analysis followed the same hierarchical pattern as the ordinary least-squares models for

financial stress. Three hierarchical models were constructed, each built on the prior model. Multi-collinearity was measured using ordinary least squares regression with variance inflation and tolerance factors. The four coping options of neglecting academic studies, reducing class load, taking a break from college/university, and dropping out of college/university were considered separately using logistic regression to determine which predictor variables influenced those choices. Table A-2 outlines the responses to these questions. Concordance was measured along with tests for multicollinearity. As with the financial stress models, these coping choice models were hierarchical beginning with the personal antecedents, adding the primary and secondary appraisal variables including the variables of interest to understand their potential impact on the dependent variables.

### **Summary**

The hypotheses were tested with regression analysis for each of the five dependent variables. The independent variables in each model represented the phases of stress; personal antecedents, primary appraisal variables and secondary appraisal variables. These were analyzed in a hierarchical analysis beginning with personal antecedents, adding primary appraisal influences and concluding with secondary appraisal influences including the variables of interest. The specific influences of financial self-efficacy and financial socialization were tested for mediation and moderation.



## Chapter 4 - Findings and Results

### Descriptive Statistics of the Sample

The final sample size for this research was 13,235 after list-wise deletion of non-responses and variable recoding. Those who did not respond to their age or grade point average were imputed at the mean to test the robustness of the results discussed later. This sample had a higher representation of females (56.8%), whites (57.6%) and public school students, both four year and two year, (73.5%) than the national averages represented in parentheses (National Center for Education Statistics, 2017). This sample did not include for-profit universities which are considered private for the NCES reports. This sample was considerably younger than overall college enrollment with 72.2% under age 24 while the national enrollment under age 25 is 59.3% (NCES, 2017). The grade point averages for this sample were somewhat higher than the national average of 74% over 3.0 (NCES, 2017)

The ethnicity other category included Hawaiian or other-Pacific Islander, Native America/American Indian/Alaskan Native, Middle Eastern/Arab American and those who choose other or prefer not to answer. The demographic characteristics of this sample are outlined in Table 4-1.

**Table 4-1 Descriptive Statistics**

Variable	Frequency	Percentage
Gender		
Male	4002	30.3%
Female	8322	63.0%
Other and no response	157	1.2%
Ethnicity		
White	9120	68.9%
African American	553	4.2%
Hispanic	703	5.3%
Asian American	680	5.1%
Other	2179	16.5%
Age		

18 – 23	8866	72.2%
24 – 29	1682	13.7%
30 – 39	1019	8.3%
40 – 49	478	3.9%
50 – 59	200	1.6%
60+	28	.2%
Did not respond	962	7.3%
Grade Point Average		
Below 3.0	2652	20.0%
3.0 and above	10583	80.0%
Type of Institution		
Four Year Public	10903	82.4%
Four Year Private	1238	9.3%
Two Year Public	1094	8.3%
Eligible for In-State Tuition	9934	75.1%
First Generation Student	5344	40.4%
International Citizen	347	2.6%
Employment Status		
Not Employed	4330	32.7%
Part-time	6807	51.4%
Full-time	2098	15.9%

---

*Source: Complete cases of the 2014 Student Financial Wellness (n = 13,235)*

### **Dependent Variable – Financial Stress**

A three model hierarchical ordinary least squares regression analyzed the associations of the independent variables and the dependent variable of financial stress. Model 1 analyzed personal antecedents including demographic and academic independent variables, Model 2 added primary appraisal financial variables and Model 3 added secondary appraisal considerations including the variables of interest.

The first hierarchical model demonstrated a positive relationship between financial stress and females, students identifying as gender-other, ethnicity-other, those with a GPA less than 3.0 and first generation college students. These variables were associated with higher levels of negative stress in this study. Those variables negatively associated with financial stress in model 1 were age, students attending private school and those eligible for in-state tuition.

The second hierarchical model also had female, gender-other, ethnicity-other, GPA less than 3.0 and first generation students associated with higher levels of negative financial stress. This model added variables for sources of funds to pay college expenses with sources of student loans, parental loans and other types of loans positively associated with negative financial stress. Age and paying for college expenses were found to be negatively associated with negative stress. The results of these two models were consistent with prior research on the influence of gender and to a lesser extent, ethnicity, on feelings of financial stress. The result indicated the use of debt to pay for college expenses are associated with greater feelings of negative financial stress. The variables moderating negative financial stress were age and paying for college expenses with resources that may not have to be repaid such as scholarships or current parental income.

Model 3 added the secondary appraisal influences and the variables of interest. Consistent with the first two models, female, gender-other, ethnicity-other, GPA less than 3.0 and first generation college students were positively associated with negative stress. Paying for college expenses with student loans, parental loans, other types of loans and the student's expected total loan amount were again positively associated with negative stress. Age and paying for college expenses with scholarships/grants remained negatively associated with negative financial stress as they were in Model 2. The variables added in model 3, financial knowledge, relying on parents, financial self-efficacy, and financial socialization, were all negatively associated with negative financial stress. These variables moderate the sense of financial stress by influencing the student's assessment of resources or access to those resources as suggested in stress theory. The only variable added in model 3 with no significant relationship with financial stress is financial behavior. The adjusted  $R^2$  for Model 3 was 30.3 indicating the model accounts for approximately 30% of the reason for a change in financial stress.

The results of ethnicity and financial stress were different than prior research with only ethnicity-other showing a significant relationship. Borrowing money from others, student loans by the student, loans taken out by their parents and the anticipated student loan total amount were the next variables most highly associated with financial stress. The results of the hierarchical ordinary least squares analysis are in Table 4-2.

**Table 4-2 Hierarchical OLS Regression Analysis of the Influences on Financial Stress**

	Model 1		Model 2		Model	
	Est	Pr >  t	Est	Pr >  t	Est	Pr > (t)
<u>Personal Antecedents</u>						
Gender						
Female	1.235	<.0001	.860	<.0001	.695	<.0001
Gender-Other	2.214	<.0001	1.908	<.0001	1.434	<.0001
Ethnicity						
African American	.038	0.8035	-.097	0.4924	-.289	0.0310
Hispanic	.203	0.1415	.479	0.0001	.347	0.0036
Asian American	.056	0.7049	.524	0.0001	.423	0.0008
Ethnicity – other	.490	<.0001	.562	<.0001	.425	<.0001
Age	-.024	<.0001	-.055	<.0001	-.065	<.0001
GPA less than 3.0	1.287	<.0001	.700	<.0001	.488	<.0001
Institution Type						
4 Year Private	-.044	0.7508	.033	0.7244	-.015	0.8296
2 Year Public	.208	0.0807	.420	0.0676	.382	0.0002
Instate Tuition	-.112	0.2774	.091	0.4885	-.014	0.8704
First Generation	.802	<.0001	.381	<.0001	.276	<.0001
International Citizen	-.260	0.2148	.350	0.5552	.182	0.2673
<u>Primary Appraisal Variables</u>						
Employment						
Full Time			.048	0.6338	-.118	0.2241
Part-Time			.049	0.4806	-.034	0.5694
Expected Salary						
At Graduation			-.127	<.0001	-.112	<.0001
10 years past Graduation			-.254	<.0001	-.212	<.0001
Sources of Funds for College						
Student Loans			.264	<.0001	.212	<.0001
Parents Income			-.171	<.0001	-.072	0.0247
Parents Loans			.234	<.0001	.202	<.0001

Scholarships/Grants	-.228	<.0001	-.227	<.0001
Employment	.145	<.0001	.148	<.0001
Savings	.106	0.002	.179	<.0001
Other Loans	.522	<.0001	.465	<.0001
Credit Cards	.212	.0001	.098	.0707
Student Loan Expected Total	.351	<.0001	.310	<.0001
<u>Secondary Appraisal Variables</u>				
Financial Knowledge			-.117	<.0001
Financial Behaviors			.035	0.0007
Reliance on Parental Support			-.074	<.0001
Financial Self-Efficacy			-1.140	<.0001
Financial Socialization			-.207	<.0001
Adjusted R <sup>2</sup>	.067	.237	.303	

*Source: Complete cases of the 2014 Student Financial Wellness (n = 13,235)*

### **Dependent Variable – Coping Choices**

The four problem-focused coping choices included in this data set were analyzed with a hierarchical logistic regression to assess the influences on those choices. Each choice was examined individually with the same models as were used in the financial stress analysis. The term adjusting academic schedules was used to describe all four of the coping choices. The percentage of students who have considered these coping choices ranged from 27.8% to 40.6% of the sample. These high percentages support the need to explore influences to reduce these results. The frequency of these coping choices is outlined in Table 4-3.

**Table 4-3 Dependent Variables – Coping Choices**

Has the amount of money you owe ever caused you to	Never	Sometimes or Frequently
Neglect Your Academics	66.8%	33.2%
Consider Reducing Your Class Load	70.8%	29.2%
Consider Taking a Break from College/university (stopping out)	59.4%	40.6%

Consider Dropping Out of  
College/university

72.2%

27.8%

---

*Source: Complete cases of the 2014 Student Financial Wellness (n = 13,235)*

The variables associated with the four coping choices were relatively consistent across the four coping choices with some minor variations. Students in this sample who paid for college expenses with scholarships or grants, who relied on parental financial support, who reported higher levels of financial self-efficacy or who reported higher levels of financial socialization had lower odds of choosing one of these coping choices. Students with higher odds of adjusting their academic programs were those with a GPA less than 3.0, those working full-time, ethnicity-other, using other loans to pay for college expenses, those using credit cards to pay for college expenses. Students with higher expected student loan amounts at graduation had slightly higher odds of adjusting their academic schedules, all else being equal. Age, Hispanic, ethnicity – other, attending a 4-year private school, those working part-time, and even those paying for school with student loans have varying levels of odds to adjust their academic schedules. For example, those working part-time had higher odds of neglecting their academics or considering reducing their class loads but working part-time had no relationship with stopping or dropping out. Perhaps the perceived severity of the choice influenced the students' considerations though the odds ratios were very consistent across the coping choices. The influence of financial self-efficacy was pronounced on these coping choices with a one point increase in financial self-efficacy reducing the odds of considering one of these coping choices by 19% to 25%, depending on the choice. Age, relying on parental income, paying for school with scholarships/grants, parental support and financial socialization all also reduced the likelihood of considering on of the academic coping choices.

The summarized results of the logistic regression for each of the four considered coping choices is in Table 4-4. The complete hierarchical results by coping choice are in Appendix A, Tables A-4 through A-7.

**Table 4-4 Logistic Regression Analysis of Coping Choice Influences**

	1 <sup>†</sup>	2 <sup>†</sup>	3 <sup>†</sup>	4 <sup>†</sup>
Predictors	Odds Ratios			
<u>Personal Antecedents</u>				
Gender				
Female	.987	1.071	.984	.903
Gender-Other	1.487	1.422	1.593	1.351
Ethnicity				
African American	.899	.939	.927	.850
Hispanic	1.318	1.333*	1.467***	1.330
Asian American	1.350	1.240	1.019	1.159
Ethnicity – other	1.401***	1.172	1.303***	1.312***
Age	.980***	1.001	.989	1.000
GPA less than 3.0	1.928***	1.693***	1.972	1.914***
Institution Type				
4 Year Private	.709*	.528***	.818	.821
2 Year Public	.862	1.149	.931	.984
Instate Tuition	.927	1.048	.961	.890
First Generation	1.045	1.095	1.119	1.172*
International Citizen	1.186	1.572*	1.138	1.096
<u>Primary Appraisal</u>				
Employment				
Full Time	1.730***	2.128	1.645***	1.386***
Part-Time	1.415***	1.349	1.066	.950
Expected Salary				
At Graduation	1.011	.998	.983	1.017
10 years	1.003	.994	.937***	.896***
Sources of Funds				
Student Loans	1.096***	1.077**	1.128***	1.126***
Parents Income	.905**	.885***	.866***	.874***
Parents Loans	1.080	1.043	1.063	1.048
Scholarship/Grant	.897***	.844***	.827***	.872***
Employment	1.148***	1.180***	1.126***	1.112***
Savings	1.066	1.060	1.148***	1.113***
Other Loans	1.402***	1.443***	1.407***	1.345***
Credit Cards	1.331***	1.338***	1.259***	1.168**
Student Loan Total	1.105***	1.068***	1.116***	1.129***
<u>Secondary Appraisal</u>				
Financial Knowledge	.993	.994	1.010	.969
Financial Behaviors	1.021	1.031**	1.026**	1.017

Parental Support	.930***	.939***	.938***	.976
Fin. Self-Efficacy	.734***	.802***	.790***	.781***
Fin. Socialization	.900***	.914***	.910***	.906***

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*Source: Complete cases of the 2014 Student Financial Wellness (n = 13,235)*

\* $p < .050$ , \*\* $p < .010$ , \*\*\* $p < .0001$

<sup>†</sup> *Has the amount of money you owe ever caused you to*

1. *Neglect Your Academics*
2. *Consider Reducing Your Class Load*
3. *Consider Taking a Break from College/university (stopping out)*
4. *Consider Dropping Out of College/university*

Variance inflation and tolerance factors were used in all models with no indications of multicollinearity. All models were coded for robustness to assess impact of missing data. The robustness checks used imputed mean substitution for missing GPA and age variables data. No impact was noted on the results.

### **Influences of Variables of Interest**

Financial self-efficacy and financial socialization are both found to be associated with lower levels of negative stress and reduced odds of choosing one of the academic coping choices. The specific influences of financial self-efficacy and financial socialization are then assessed within the hierarchical OLS models to examine if they mediated and/or moderated financial stress. When each was introduced into the model separately no evidence for mediation was found, there were no significant new relationships among the independent variables and financial stress. Both financial self-efficacy and financial socialization were found to be moderators of financial stress. Financial self-efficacy and financial socialization were negatively related to negative financial stress. Each variable of interest strengthened the model as measured by the adjusted  $R^2$  and increased the F-Values providing evidence to support accepting the alternate hypotheses. Both variables of interest influenced the models by moderating, reducing financial stress when they were introduced individually. The results are in Table 4-5.



**Table 4-5 Type of Influences of Financial Self-Efficacy and Financial Socialization**

	Without Self-Efficacy or Socialization		With Self-Efficacy		With Socialization	
	Est.	Pr >  t	Est.	Pr > (t)	Est.	Pr >  t
<u>Personal Antecedents</u>						
Gender						
Female	.808	<.0001	.716	<.0001	.773	<.0001
Gender-Other	1.773	<.0001	1.560	<.0001	1.601	<.0001
Ethnicity						
African American	-.229	.1105	-.266	.0571	-.261	.0645
Hispanic	.458	.0003	.357	.0037	.436	.0005
Asian American	.558	<.0001	.466	.0005	.498	.0002
Ethnicity – other	.567	<.0001	.488	<.0001	.484	<.0001
Age	-.053	<.0001	-.055	<.0001	-.064	<.0001
GPA less than 3.0	.645	<.0001	.514	<.0001	.601	<.0001
Institution Type						
4 Year Private	.055	.6691	.016	.8975	.014	.9124
2 Year Public	.419	.0001	.402	.0002	.393	.0003
Instate Tuition	.074	.4361	.045	.6242	.001	.9950
First Generation Student	.366	<.0001	.382	<.0001	.241	<.0001
International Citizen	.340	.0782	.300	.1107	.197	.3021
<u>Primary Appraisal Variables</u>						
Employment						
Full Time	.027	.7988	-.083	.4135	-.026	.7988
Part-Time	.016	.8301	-.061	.3900	.039	.5820
Expected Salary						
At Graduation	-.127	<.0001	-.119	<.0001	-.118	<.0001
10 years past Graduation	-.235	<.0001	-.218	<.0001	-.227	<.0001
Sources of Funds for College						
Student Loans	.244	<.0001	.224	<.0001	.228	<.0001
Parents Income	-.123	.0002	-.134	<.0001	-.050	.1212
Parents Loans	.214	<.0001	.193	<.0001	.224	<.0001
Scholarships/Grants	-.249	<.0001	-.235	<.0001	-.238	<.0001
Employment	.144	<.0001	.147	<.0001	.145	<.0001
Savings	.118	.0007	.153	<.0001	.151	<.0001
Other Loans	.504	<.0001	.469	<.0001	.496	<.0001
Credit Cards	.185	.0010	.140	.0103	.131	.0175
Student Loan Total	.346	<.0001	.325	<.0001	.326	<.0001
<u>Secondary Appraisal Variables</u>						
Financial Knowledge	-.132	<.0001	-.118	<.0001	-.129	<.0001

Financial Behaviors	-.089	<.0001	.023	.0282	-.063	<.0001
Parental Support	-.078	<.0001	-.085	<.0001	-.065	.0004
Financial Self-Efficacy			-1.243	<.0001		
Financial Socialization					-.247	<.0001
F-Value	136.13		163.16		148.78	
Adjusted R <sup>2</sup>	.245		.287		.268	

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*Source: Complete cases of the 2014 Student Financial Wellness (n = 13,235)*

## Chapter 5 - Discussion

This research develops a further understanding of the circumstances contributing to college student financial stress and those circumstances which influence the choices college students make to cope with their financial stress. This deeper understanding helps parents, educators, administrators and others build programs and processes to moderate financial stress and to lower the odds of students making coping choices that may disrupt their academics. The independent variables of interest for both feelings of financial stress and coping choices are financial self-efficacy and financial socialization. The impact of stress, including financial stress, may significantly impact the health and relationships of college students. The influences of the student's financial self-efficacy and financial socialization positively moderate their feelings of financial stress and positively influence coping choices improving the student's chances for academic success.

### Influences on Financial Stress

The results presented in Chapter 4 provide evidence to evaluate the research hypotheses regarding financial stress. The results indicate that higher levels of financial self-efficacy and financial socialization are associated with lower levels of negative financial stress supporting hypotheses  $H_2$  and  $H_3$ . The results present partial support for hypothesis  $H_1$ . Evidence was not found that either financial self-efficacy or financial socialization mediated any relationships between independent variables and financial stress. Both are found to moderate the relationships between the independent variables and financial stress.

The personal antecedents of demographic and academic characteristics associated with higher levels of negative stress were consistent with prior research. Gender other than male, ethnicity-other, grade point average less than 3.0, paying for college expenses through current

work and/or debt are all associated with higher levels of negative stress. Working while in college may provide financial gain for those students while increasing their feelings of financial stress. Not surprisingly the assumption of debt of any type also increases those feeling of financial stress.

Those characteristics associated with lower levels of negative stress include age, expected salary levels, paying for school with scholarships or grants, higher objective financial knowledge scores, higher levels of parental financial support, financial self-efficacy and financial socialization. The higher the expected salaries at graduation and then at 10 years post-graduation, the lower the levels of perceived financial stress. This finding may support Becker's (1962) Human Capital Theory where it is proposed students make investments in themselves in anticipation of increasing their productivity and thereby their incomes. The association of higher objective financial knowledge scores and lower negative stress is inconsistent with prior findings. The relationship between objective financial knowledge and financial stress should continue to be investigated considering the significant commitment toward financial literacy by educator and practitioners. The financial behavior to financial stress relationship was not as strong, significance of .0007, though interesting to note these proactive financial behaviors are associated with higher levels of financial stress.

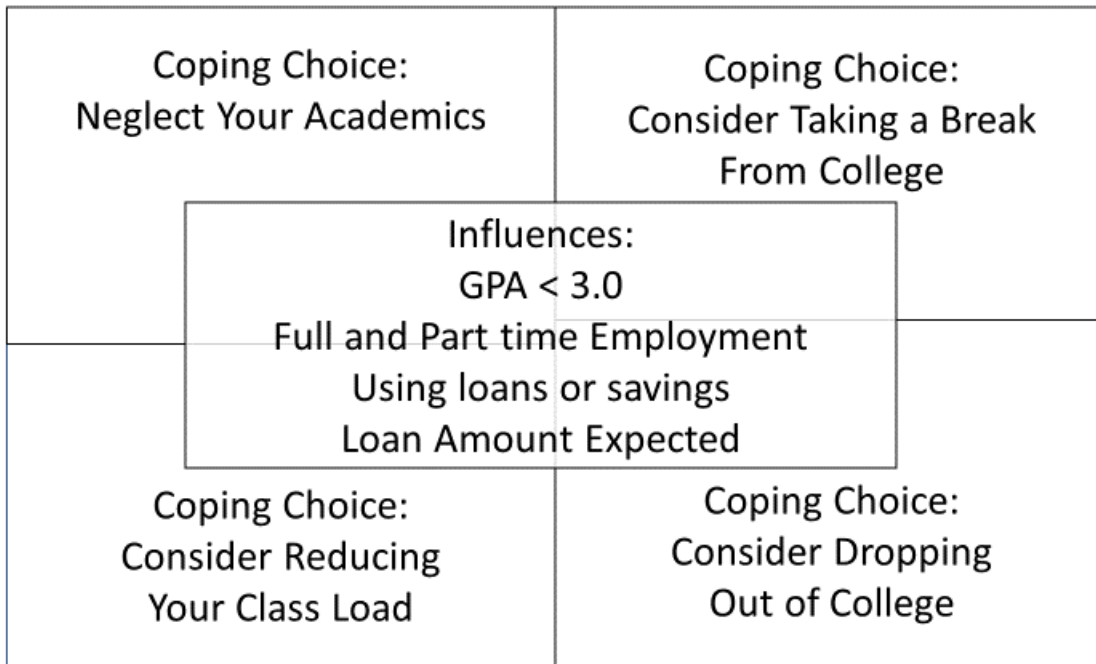
It is interesting to consider the variables where no influence on financial stress is found. These include African-Americans, Hispanics, Asian-Americans, those who work either part or full time and salary expectations at graduation or 10 years post-graduation. Prior research has found associations between ethnic minorities and financial stress and for those college students who work while in school. Education investment theories propose the investment in oneself through school is made to enhance future productivity and thus income. Research has also found

a consistent association between higher levels of education and higher levels of income. An association between first generation college students and negative financial stress was found throughout these models. There may be several reasons for this association. College education and income have been found to be correlated so the lack of parental college experience may be a sign of lower household income. First generation college students may also have greater ecological transitions to college as they parents lack that experience to have helped socialize their children. These other sources of potential stress may contribute to feelings of financial stress.

### **Influences on Coping Choices**

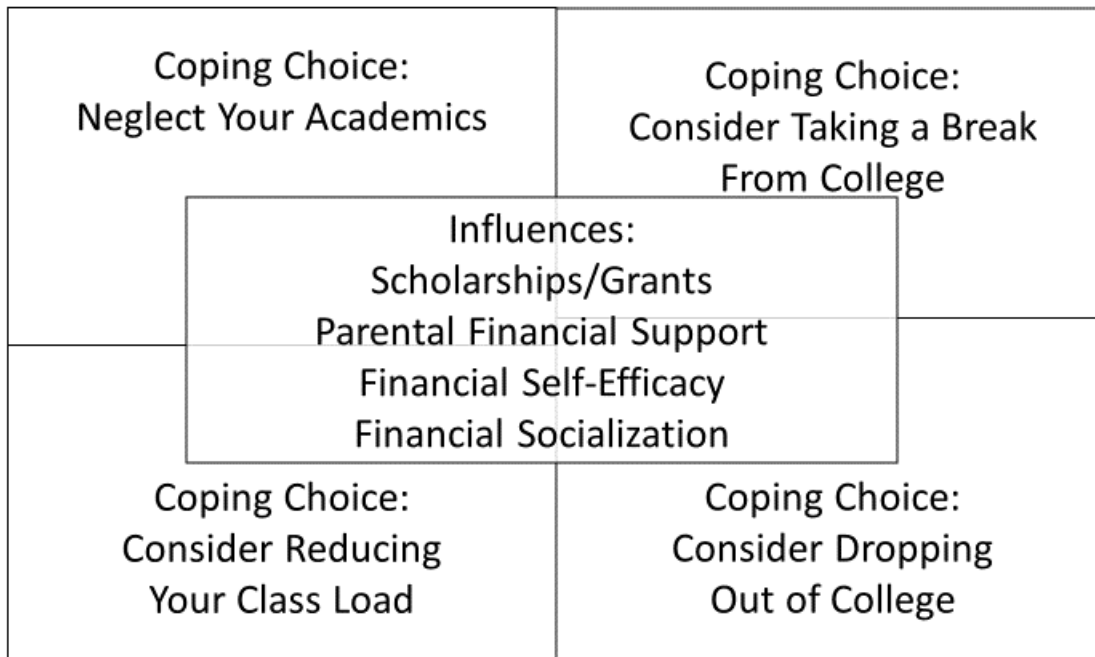
The logistic regression analysis indicates those reporting higher levels of financial self-efficacy and financial socialization are less likely to consider the academic choices thus supporting hypotheses  $H_4$  and  $H_6$ . These results do not support hypothesis  $H_5$ . The influences increasing the likelihood of choosing any of these coping choices are a GPA less 3.0, full or part-time employment and using loans or savings to pay for college expenses. These influences are outlined in Figure 5.1.

**Figure 5-1 Influences Increasing Likelihood of Coping Choice**



The influences reducing the likelihood of choosing one of these coping choices is outlined in Figure 5.2.

**Figure 5-2 Influences Reducing the Likelihood of Coping Choice**



Figures 5-1 and 5-2 depict the four examined problem-focused coping choices and the significant influences increasing the likelihood of students choosing the coping options (Figure 5-1) and those significant influences decreasing the odds of students choosing those coping options (Figure 5-2). The logistic regression results support the influences of financial self-efficacy and financial socialization on considering these coping choices. The coping choice odds ratios for financial self-efficacy range from .745 to .944 indicating a one point increase in the financial self-efficacy response reduces the likelihood of considering these coping choices by 25.5% to 5.6% depending on the coping choice. Financial socialization's odds ratios were consistent between .901 and .909 thus a one point increase in the financial socialization scale reduces the likelihood of a student considering these coping choices by approximately 10%. The practical implication is a student strongly agreeing compared to simply agreeing that their parents or guardians are perceived to talk to the students about money or the parents or guardians were sound financial role models.

## **Intervention Opportunities**

The stress theory framework provides potential intervention opportunities prior to the introduction of the stressor, during the primary appraisal of threat and during the secondary appraisal of resources and access (Lazarus & Folkman, 1984; Crum et al., 2013). The personal antecedents cannot generally be changed; they can be recognized for important intervention opportunities. Antecedents such as female, gender-other and first generation college student are specific populations at risk for financial stress. Working with these at-risk populations with specifically designed interventions may create positive results.

The secondary appraisal influences of financial self-efficacy and financial socialization were shown to moderate feelings of financial stress. Bandura (1977, 2006) proposed four means of creating self-efficacy; a) performance accomplishments; b) vicarious experience; c) verbal persuasion; d) physiological states. Researchers have applied Bandura's self-efficacy model to personal finances however a need to understand how financial self-efficacy is created remains (Lown, 2011). This research demonstrates the significant impact of financial self-efficacy on perceptions of stress and the resulting coping choices. The implication for leaders is to instill positive self-efficacy in youth leading to potentially reduced financial stress while the youth are in college and a reduced likelihood those students will choose coping steps that may negatively impact their academic performance.

Bandura's model of creating self-efficacy most effective technique is through mastery of a task or tasks (1977, 2006). Successfully completing a task builds confidence in our ability to do so again in the future increasing our self-efficacy about that task. Personal finance tasks such as budgeting or paying bills on time are examples of tasks to master. This research did not find a direct relationship between these financial behavioral tasks and financial stress; however,



mastery of these tasks may improve our financial self-efficacy which has an important moderating influence on financial stress. The second method is creating self-efficacy is through vicarious experience or social modeling (Bandura, 1977, 2006). This make take the form of a peer leading by example or a parent modeling appropriate financial behavior. The third method is through verbal persuasion, convincing an individual to attempt and complete a task. Behavior theories outline how persuasion make effectively operate beginning with a belief the person can complete the task, that others believe they should complete the task and they have the resources to do so. The final option to create self-efficacy is through physiological states, a process perhaps most difficult to accomplish. Research has found the relationship between physiological arousal and the intent to engage in financial planning is a U-shaped relationship with moderate levels of arousal leading to the best results (Grable, Heo, & Rabbani, 2015).

This model of creating self-efficacy reinforces the important role of parents, educators, administrators and highlights the important role of peers. The most effectives means of instilling self-efficacy, mastery and observation, may be led by peers in addition to adult role models. Several colleges have built peer financial counseling departments where they train students to work with other students who are seeking financial help. Often those seeking help are those with the highest level of financial stress (Lim, 2014).

Socialization is a learning process employing observation, activity, and experiences (Drever et al., 2015). Positive role models, learning activities and discussion leads to positive learning and socialization. The influences of positive financial socialization may be reduced financial stress and a reduced likelihood of coping that may negatively impact academic performance. The implications for those socialization youth are to seek means to perform

activities and roles leading to positive financial self-efficacy in that youth. These leaders include parents, educators and others in a youth leadership role.

### **Limitations**

This research has its limitations. This research is focused on one dataset and is limited to that sample and may not be generalizable to the entire United States college student population. Most of the responses in this data set are self-reported, as a result those responses may not be accurate as it has been demonstrated that college students are challenged to report accurate financial information. An example of information many college students lack awareness of is the amount of their student debt (Akers & Chingos, 2014; Britt et al., 2017). Further research into the influences on financial stress in other student populations such as students in for-profit universities and historically black colleges is recommended. There has been considerable scrutiny of for-profit universities regarding their financial aid practices and investigating the impact on their students' financial stress and coping is important. As noted, ethnicity has been found to be related to stress thus research on financial stress at historically black colleges would add to the understanding of college student stress and ethnicity.

Financial self-efficacy has been shown to significantly moderate feelings of financial stress and to influence students to lessen consideration of coping choices which may damage their academic performance. It is important to note the measure of financial self-efficacy in this research is assessed by the answers to one question. The important results should be verified with more complete measuring tools (Lown, 2011).

The coping choices in this research are limited to four problem-focused choices the student may have made or are considering. Coping with stress takes many forms; this research considers only several problem-focused coping choices. Further research on the many other

problem-focused coping choices available to college students is recommended. It is highly recommended for research into how financial self-efficacy and financial socialization influence emotion-focused coping strategies. Those emotion-focused coping choices are less effective and may be more harmful to the individual than the problem-focused choices explored in this research. Understanding how to direct students toward problem-focused solutions is very important for parents, educators, policy-makers and others who influence young people.

This research is diagnostic, more research into the formulation of financial self-efficacy is encouraged. Further research into implementation of positive financial socialization is also encouraged.

### **Conclusion**

This research provides insight into the stressors leading to financial stress in college students. Both financial self-efficacy and financial socialization moderated the impact of those stressors to lower feelings of negative stress. These influences of financial self-efficacy and financial socialization had a similar impact on the likelihood of a student adjusting their academic schedules to cope with their feelings of financial stress. Both variables are inversely related to the likelihood of choosing one of these coping choices thus reducing the likelihood a student will choose to cope with their feelings of financial stress by negatively adjusting their academic schedules.

This research strengthens the importance of positive financial socialization moderating feelings of financial stress and reducing the likelihood of a student considering a coping choice that may negatively impacting their academic performance. This research also highlights the importance of financial self-efficacy. The influence of both variables is documented as leading to

less negative financial stress and a lower likelihood to cope by negatively impacting their academics.

The implication for parents, guardians and other thought-leaders is compelling. Being perceived as a strong financial role model and willing to discuss finances leads to reduced feeling of financial stress and a lower likelihood in considering negative coping choices in college students. Guided by Bandura's model, helping students master good financial behaviors and modeling those behaviors may greatly influence higher levels of financial self-efficacy (1977, 2006). Further, learning the tools and techniques to instill positive financial self-efficacy in youth may have significant positive results in their college years. These steps may help reduce feelings of financial stress and may help students lessen the likelihood of choosing option that harm their academic performance.

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## Appendix A - Tables

**Table A-1 Financial Stress Scale**

Please indicate to what extent you agree or disagree with the following statements.

Scale 1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree

	Mean Score
	<i>n = 13,235</i>
I feel stressed about my personal finances in general (1 – 4)	2.96
I worry about being able to pay my current monthly expenses (1 – 4)	2.57
I worry about having enough money to pay for school (1 – 4)	2.74
When I think about my financial situation, I am optimistic about the future (1 – 4)*	2.75
After graduation, I will be able to support myself financially (1 – 4)*	2.93
I think that the cost of college or university is a good investment for my financial future (1 – 4)*	2.99

. \* Reverse Coded

**Table A-2 Coping Questions**

Please indicate the best response to the following questions:

	Percentage <i>n = 13,235</i>	
	1 Never N/A	2 Sometimes or Frequently
Has the amount of money you owe ever caused you to neglect your academic studies?	67.85	33.15
Has the amount of money you owe ever caused you to reduce your class load?	71.85	29.15
Has the amount of money you owe ever caused you to consider taking a break from college/university?	59.38	40.62
Has the amount of money you owe ever caused you to consider dropping out of college/university?	73.29	27.81

**Table A-3 Financial Socialization**

Please indicate the extent to which you agree or disagree with the statements below about your experience prior to college or university.

	<u>Percentage</u> <i>n = 13,235</i>			
	1 Strongly Disagree	2 Disagree	3 Agree	4 Strongly Agree
My parents or guardians were comfortable talking about money with me.	6.97%	13.68%	42.86%	36.49%
My parents or guardians told me what I needed to know about money management.	9.65%	19.545	44.18%	26.635
My parents or guardians were role models of sound financial management.	12.29%	18.36%	36.80%	32.55%

**Table A-4 Logistic Regression – Neglect Academics**

Has the amount of money you owe ever caused you to neglect your academic studies?

Predictor	Sometimes or Frequently					
	Est.	P	Est.	P	Est.	P
<u>Personal Antecedents</u>						
Gender						
Female	0.078	0.0685	0.017	0.7067	-0.014	0.7757
Gender-Other	0.448	0.0707	0.497	0.0585	0.397	0.1392
Ethnicity						
African American	0.024	0.8048	-0.065	0.5304	-0.107	0.3144
Hispanic	0.180	0.0343	0.291	0.0014	0.276	0.0029
Asian American	0.060	0.5288	0.286	0.0059	0.300	0.0044
Ethnicity – other	0.292	<.0001	0.367	<.0001	0.337	<.0001
Age	0.010	0.0002	-0.013	<.0001	-0.020	<.0001
GPA less than 3.0	0.906	<.0001	0.702	<.0001	0.656	<.0001
Institution Type						
4 Year Private	-0.311	0.0007	-0.291	0.0029	-0.344	0.0005
2 Year Public	-0.156	0.0386	-0.123	0.1230	-0.149	0.0667
Instate Tuition	-0.041	0.5342	0.001	0.9873	-0.076	0.2927
First Generation	0.313	<.0001	0.100	0.0236	0.044	0.3281
International Citizen	-0.136	0.3165	0.234	0.1126	0.170	0.2596
<u>Primary Appraisal</u>						
Employment						
Full Time			0.668	<.0001	0.548	<.0001
Part-Time			0.417	<.0001	0.347	<.0001
Expected Salary						
At Graduation			0.004	0.7244	0.011	0.3569
10 years			-0.012	0.4175	0.003	0.814
Sources of Funds						
Student Loans			0.114	<.0001	0.092	<.0001
Parents Income			-0.185	<.0001	-0.100	0.0001
Parents Loans			0.067	0.0261	0.077	0.0128
Scholarship/Grant			-0.102	<.0001	-0.109	<.0001
Employment			0.139	<.0001	0.138	<.0001
Savings			0.047	0.0587	0.064	0.0132
Other Loans			0.350	<.0001	0.338	<.0001
Credit Cards			0.328	<.0001	0.286	<.0001
Student Loan Total			0.115	<.0001	0.100	<.0001
<u>Secondary Appraisal</u>						
Financial Knowledge					-0.007	0.6964

Financial Behaviors			0.021	0.0101
Parental Support			-0.073	<.0001
Fin. Self-Efficacy			-0.309	<.0001
Financial Socialization			-0.106	<.0001
$R^2$	.062	.189	.214	
Concordance	62.1%	72.8%	74.2%	
$Df$	1	1	1	

---

*Source: Complete cases of the 2014 Student Financial Wellness (n = 13,235)*

**Table A-5 Logistic Regression – Reducing Class Load**

Has the amount of money you owe ever caused you to consider reducing your class load?

Predictor	Sometimes or Frequently					
	Est.	P	Est.	P	Est.	P
<u>Personal Antecedents</u>						
Gender						
Female	.132	0.0030	.087	0.0720	.069	0.1656
Gender-Other	.382	0.1420	.429	0.1203	.352	0.2092
Ethnicity						
African American	.001	0.9980	-.037	0.7286	-.063	0.5612
Hispanic	.180	0.0390	.301	0.0013	.287	0.0026
Asian American	-.025	0.8060	.191	0.0819	.215	0.0527
Ethnicity – other	.125	0.0530	.190	0.0054	.158	0.0223
Age	.030	<.0001	.006	0.0660	.001	0.7943
GPA less than 3.0	.775	<.0001	.559	<.0001	.527	<.0001
Institution Type						
4 Year Private	-.621	<.0001	-.610	<.0001	-.638	<.0001
2 Year Public	.139	0.0600	.139	0.0750	.139	0.0810
Instate Tuition	.056	0.4170	.095	0.2046	.047	0.5366
First Generation	.338	<.0001	.148	0.0012	.091	0.0519
International Citizen	.175	0.2080	.487	0.0014	.452	0.0033
<u>Primary Appraisal</u>						
Employment						
Full Time			.859	<.0001	.755	<.0001
Part-Time			.365	<.0001	.299	<.0001
Expected Salary						
At Graduation			-.006	0.6047	-.002	0.8672
10 years			-.017	0.2542	-.006	0.7145
Sources of Funds						
Student Loans			.091	<.0001	.075	0.0013
Parents Income			-.200	<.0001	-.122	<.0001
Parents Loans			.024	0.4434	.042	0.1926
Scholarship/Grant			-.160	<.0001	-.169	<.0001
Employment			.173	<.0001	.165	<.0001
Savings			.051	0.0476	.058	0.0264
Other Loans			.362	<.0001	.367	<.0001
Credit Cards			.321	<.0001	.291	<.0001
Student Loan Total			.083	<.0001	.066	<.0001
<u>Secondary Appraisal</u>						
Financial Knowledge					-.007	0.7139
Financial Behaviors					.031	0.0003
Parental Support					-.063	<.0001
Financial Self-Efficacy					-.221	<.0001
Financial Socialization					-.090	<.0001



$R^2$	.075	.197	.211
Concordance	64.8%	74.1%	74.8%
$Df$	1	1	1

---

*Source: Complete cases of the 2014 Student Financial Wellness (n = 13,235)*

**Table A-6 Logistic Regression – Stopping Out**

Has the amount of money you owe ever caused you to consider taking a break from college/university?

Predictor	Sometimes or Frequently					
	Est.	P	Est.	P	Est.	P
<u>Personal Antecedents</u>						
Gender						
Female	.098	.017	-.001	.9821	-.016	.7330
Gender-Other	.562	.022	.595	.0245	.466	.0823
Ethnicity						
African American	.011	.911	-.037	.7181	-.076	.4654
Hispanic	.206	.013	.385	<.0001	.383	<.0001
Asian American	-.258	.007	-.003	.9789	.018	.8613
Ethnicity – other	.214	.000	.302	<.0001	.265	<.0001
Age	.023	<.0001	-.004	.1804	-.011	.0007
GPA less than 3.0	.915	<.0001	.711	<.0001	.679	<.0001
Institution Type						
4 Year Private	-.216	.013	-.173	.0652	-.201	.0353
2 Year Public	-.076	.294	-.064	.4076	-.071	.3664
Instate Tuition	-.044	.494	.012	.8615	-.040	.5700
First Generation	.384	<.0001	.161	.0002	.113	.0104
International Citizen	-.197	.141	.151	.3019	.130	.3818
<u>Primary Appraisal</u>						
Employment						
Full Time			.617	<.0001	.498	<.0001
Part-Time			.134	.0094	.064	.2368
Expected Salary						
At Graduation			-.020	.0695	-.017	.1293
10 years			-.075	<.0001	-.066	<.0001
Sources of Funds						
Student Loans			.138	<.0001	.120	<.0001
Parents Income			-.220	<.0001	-.144	<.0001
Parents Loans			.050	.0982	.061	.0455
Scholarship/Grant			-.182	<.0001	-.190	<.0001
Employment			.125	<.0001	.119	<.0001
Savings			.129	<.0001	.138	<.0001
Other Loans			.332	<.0001	.342	<.0001
Credit Cards			.262	<.0001	.230	<.0001
Student Loan Total			.123	<.0001	.110	<.0001
<u>Secondary Appraisal</u>						
Financial Knowledge					.010	.5556
Financial Behaviors					.026	.0014
Parental Support					-.064	<.0001

Financial Self-Efficacy			-.236	<.0001
Financial Socialization			-.094	<.0001

$R^2$	.078	.227	.243
Concordance	64.1%	74.4%	75.3%
$Df$	1	1	1

---

*Source: Complete cases of the 2014 Student Financial Wellness (n = 13,235)*

**Table A-7 Logistic Regression – Consider Dropping Out**

Has the amount of money you owe ever caused you to consider dropping out of college/university?

Predictor	Sometimes or Frequently					
	P	eB	P	eB	P	eB
<u>Personal Antecedents</u>						
Gender						
Female	.060	.185	-.062	.199	-.102	.042
Gender-Other	.497	.051	.458	.093	.301	.281
Ethnicity						
African American	-.056	.578	-.112	.295	-.162	.138
Hispanic	.158	.075	.310	.001	.285	.003
Asian American	-.105	.322	.145	.204	.147	.201
Ethnicity – other	.234	.001	.305	<.0001	.271	<.0001
Age	.027	<.0001	.004	.165	.001	.954
GPA less than 3.0	.901	<.0001	.692	<.0001	.649	<.0001
Institution Type						
4 Year Private	-.234	.015	-.177	.081	-.198	.056
2 Year Public	-.023	.763	.008	.917	-.016	.848
Instate Tuition	-.152	.028	-.075	.313	-.117	.122
First Generation	.415	<.0001	.208	<.0001	.159	.001
International Citizen	-.204	.169	.151	.344	.092	.569
<u>Primary Appraisal</u>						
Employment						
Full Time			.390	<.0001	.327	<.0001
Part-Time			-.021	.709	-.051	.394
Expected Salary						
At Graduation			.010	.407	.017	.164
10 years			-.117	<.0001	-.110	<.0001
Sources of Funds						
Student Loans			.134	<.0001	.119	<.0001
Parents Income			-.179	<.0001	-.135	<.0001
Parents Loans			.049	.121	.047	.144
Scholarship/Grant			-.127	<.0001	-.137	<.0001
Employment			.105	<.0001	.106	<.0001
Savings			.087	.001	.107	<.0001
Other Loans			.300	<.0001	.296	<.0001
Credit Cards			.194	<.0001	.155	.001
Student Loan Total			.132	<.0001	.121	<.0001
<u>Secondary Appraisal</u>						
Financial Knowledge					-.032	.758
Financial Behaviors					.017	.048
Parental Support					-.024	.123
Financial Self-Efficacy					-.248	<.0001

Financial Socialization				-.099	<.0001
-------------------------	--	--	--	-------	--------

$R^2$	.077	.193	.212
Concordance	64.8%	73.7%	74.8%
$Df$	1	1	1

---

*Source: Complete cases of the 2014 Student Financial Wellness (n = 13,235)*

## **Appendix B - Codebook**

The executive summary and codebook for the National Student Financial Wellness Study – 2014 may be found at:

<https://cssl.osu.edu/research-projects/study-on-collegiate-financial-wellness/scfw-data-results/>

## Appendix C - SAS Coding

```
libname NSFWS 'C:\Users\Randy\Desktop\PhD Proposal';

data NSFWS.NSFWS12;
set NSFWS.NSFWS2014_US_deidentified;

/*Gender*/
male=gender=1;
female=gender=2;
gender_other=gender in (-99,3,4);

/*ethnicity*/
white=race=1;
AfAmerican=race=2;
Hispanic=race=3;
AsAmerican=race=4;
RaceOther=race in (5, 6, 7, 8, 9, 10, -99);

/*Type of Institution*/
fouryearpublic=insttype=1;
fouryearprivate=insttype=2;
twoyearpublic=insttype=3;

/*Financial Behavior*/
FinancialBehavior= havebudget + trackspending + trackchecks + paybills +
addsavings;
if 0>financialbehavior then delete;

/*Financial Socialization*/
financial_socialization = parents_comfortable + parents_moneymangement +
parents_rolemodel;

if 0>financial_socialization then delete;

/*In state tuition eligibility*/
Instate_tuition=tuitionstatus=1;

/*Citizenship*/
International_Citizen=citizenship=2;

/*First Generation College Student*/
FirstGeneration=firstgen=1;

/*Employment Status*/
fulltime=employmentstatus = 1;
parttime=Employmentstatus = 2;

/*College Expenses - sources of funding*/
if 0<expenses_studentloans;
if 0<expenses_parentincome;
if 0<expenses_parentloans;
```

```

if 0<expenses_scholarshipsgrants;
if 0<expenses_moneyfromjob;
if 0<expenses_moneyfromsavings;
if 0<expenses_moneyborrowed;
if 0<expenses_creditcard;

/*Financial Self-Efficacy*/
if 0<managemoneywell;

/*Parental Financial Support - sum of how often parents are chosen as the
primary source to fund these items*/
ParTuition = primarysource_tuition = 2;
ParHousing = primarysource_housing = 2;
ParBooks = primarysource_books = 2;
ParFood = primarysource_food = 2;
ParEnt = primarysource_entertainment = 2;
ParApp = primarysource_apparel = 2;
ParFam = primarysource_family = 2;
ParTrans = primarysource_transporation = 2;
ParOther = primarysource_otherpurchases= 2;

ParFinSupp = (ParTuition + ParHousing + ParBooks + ParFood + ParEnt + ParApp
+ ParFam + ParTrans + ParOther);

/*Student Loans - coding skip answer of no loans as zero*/
If studentloan in (2, 3) then studentloan_amount = 0;

If studentloan in (2, 3) then studentloan_expectedamount = 0;

if -1<studentloan_amount<10;

if -1< studentloan_expectedamount<10;

/*GPA*/
LowGPA = GPA_recode in (1, 2, 3);

/*FINANCIAL STRESS - reverse coding 3 items so all componants have same
direction*/
optimisticfuturerv = 5 - optimisticfuture;
if 0<optimisticfuturerv<6;
supportselfrv = 5 - supportself;
if 0<supportselfrv<6;
collegegoodinvestmentrv = 5 - collegegoodinvestment;
if 0<collegegoodinvestmentrv<6;

Financial_Stress = stress_general + stress_monthlyexpenses + stress_payschool
+ optimisticfuturerv + supportselfrv + collegegoodinvestmentrv;

if -1<financial_stress;

/*Coping Choices creating binary answers*/
if owe_neglectacademic = -99 then delete;
if owe_reduceclass = -99 then delete;
if owe_considerstopout = -99 then delete;
if owe_considerdropout = -99 then delete;

```



```

if owe_neglectacademic in (2, 3) then owe_neglectacademic = 2;
if owe_reduceclass in (2, 3) then owe_reduceclass = 2;
if owe_considerstopout in (2, 3) then owe_considerstopout = 2;
if owe_considerdropout in (2, 3) then owe_considerdropout = 2;

if owe_neglectacademic in (1, 4) then owe_neglectacademic = 1;
if owe_reduceclass in (1, 4) then owe_reduceclass = 1;
if owe_considerstopout in (1, 4) then owe_considerstopout = 1;
if owe_considerdropout in (1, 4) then owe_considerdropout = 1;

/*Listwise Deletions*/
if expectedsalary= -99 then delete;
if expectedsalary_10years = -99 then delete;
if gender = -99 then delete;
if race = -99 then delete;
if age_category = -99 then delete;
if gpa_recode = -99 then delete;
if insttype = -99 then delete;
if tuitionstatus = -99 then delete;
if education_mother = -99 then delete;
if education_father = -99 then delete;
if firstgen = -99 then delete;
if citizenship = -99 then delete;
if live_with = -99 then delete;
if employmentstatus = -99 then delete;

/*Mean Imputation*/
/*proc stdize
oprefix=Orig_
    reonly
    method=MEAN;
    var GPA_value gpa_recode age age_category;
run;

/*OLS Regression - 3 hierarchical models with Financial Stress as DV*/
proc reg;
model financial_stress = female gender_other AfAmerican Hispanic AsAmerican
RaceOther age lowGPA fouryearprivate twoyearpublic Instate_tuition
firstgeneration International_Citizen/vif tol;
run;

proc reg;
model financial_stress = female gender_other AfAmerican Hispanic AsAmerican
RaceOther age lowGPA fouryearprivate twoyearpublic Instate_tuition
firstgeneration International_Citizen Fulltime Parttime expectedsalary
expectedsalary_10years expenses_studentloans expenses_parentincome
expenses_parentloans expenses_scholarshipsgrants expenses_moneyfromjob
expenses_moneyfromsavings expenses_moneyborrowed expenses_creditcard
studentloan_expectedamount /vif tol;
run;

proc reg;

```

```

model financial_stress = female gender_other AfAmerican Hispanic AsAmerican
RaceOther age lowGPA fouryearprivate twoyearpublic Instate_tuition
firstgeneration International_Citizen fulltime parttime expectedsalary
expectedsalary_10years expenses_studentloans expenses_parentincome
expenses_parentloans expenses_scholarshipsgrants expenses_moneyfromjob
expenses_moneyfromsavings expenses_moneyborrowed expenses_creditcard
studentloan_expectedamount finknowledge_score financialbehavior parfinsupp
managemoneywell financial_socialization /vif tol;
run;

/* Logistic Regression - heirarchical with coping choices as DV's*/
/* Neglect Academics*/
proc logistic descending;
model owe_neglectacademic = female gender_other AfAmerican Hispanic
AsAmerican RaceOther age lowGPA fouryearprivate twoyearpublic Instate_tuition
firstgeneration International_Citizen/ rsquare;
run;

proc logistic descending;
model owe_neglectacademic = female gender_other AfAmerican Hispanic
AsAmerican RaceOther age lowGPA fouryearprivate twoyearpublic Instate_tuition
firstgeneration International_Citizen fulltime parttime expectedsalary
expectedsalary_10years expenses_studentloans expenses_parentincome
expenses_parentloans expenses_scholarshipsgrants expenses_moneyfromjob
expenses_moneyfromsavings expenses_moneyborrowed expenses_creditcard
studentloan_expectedamount / rsquare;
run;

proc logistic descending;
model owe_neglectacademic = female gender_other AfAmerican Hispanic
AsAmerican RaceOther age lowGPA fouryearprivate twoyearpublic Instate_tuition
firstgeneration International_Citizen fulltime parttime expectedsalary
expectedsalary_10years expenses_studentloans expenses_parentincome
expenses_parentloans expenses_scholarshipsgrants expenses_moneyfromjob
expenses_moneyfromsavings expenses_moneyborrowed expenses_creditcard
studentloan_expectedamount finknowledge_score financialbehavior parfinsupp
managemoneywell financial_socialization/ rsquare;
run;

/* Reducing class load*/
proc logistic descending;
model owe_reduceclass = female gender_other AfAmerican Hispanic AsAmerican
RaceOther age lowGPA fouryearprivate twoyearpublic Instate_tuition
firstgeneration International_Citizen/ rsquare;
run;

proc logistic descending;
model owe_reduceclass = female gender_other AfAmerican Hispanic AsAmerican
RaceOther age lowGPA fouryearprivate twoyearpublic Instate_tuition
firstgeneration International_Citizen fulltime parttime expectedsalary
expectedsalary_10years expenses_studentloans expenses_parentincome
expenses_parentloans expenses_scholarshipsgrants expenses_moneyfromjob
expenses_moneyfromsavings expenses_moneyborrowed expenses_creditcard
studentloan_expectedamount / rsquare;
run;
proc logistic descending;

```

```

model owe_reduceclass = female gender_other AfAmerican Hispanic AsAmerican
RaceOther age lowGPA fouryearprivate twoyearpublic Instate_tuition
firstgeneration International_Citizen fulltime parttime expectedsalary
expectedsalary_10years expenses_studentloans expenses_parentincome
expenses_parentloans expenses_scholarshipsgrants expenses_moneyfromjob
expenses_moneyfromsavings expenses_moneyborrowed expenses_creditcard
studentloan_expectedamount finknowledge_score financialbehavior parfinsupp
managemoneywell financial_socialization/ rsquare;
run;

/* Taking a break from school*/
proc logistic descending;
model owe_considerstopout = female gender_other AfAmerican Hispanic
AsAmerican RaceOther age lowGPA fouryearprivate twoyearpublic Instate_tuition
firstgeneration International_Citizen/ rsquare;
run;

proc logistic descending;
model owe_considerstopout = female gender_other AfAmerican Hispanic
AsAmerican RaceOther age lowGPA fouryearprivate twoyearpublic Instate_tuition
firstgeneration International_Citizen fulltime parttime expectedsalary
expectedsalary_10years expenses_studentloans expenses_parentincome
expenses_parentloans expenses_scholarshipsgrants expenses_moneyfromjob
expenses_moneyfromsavings expenses_moneyborrowed expenses_creditcard
studentloan_expectedamount / rsquare;
run;

proc logistic descending;
model owe_considerstopout = female gender_other AfAmerican Hispanic
AsAmerican RaceOther age lowGPA fouryearprivate twoyearpublic Instate_tuition
firstgeneration International_Citizen fulltime parttime expectedsalary
expectedsalary_10years expenses_studentloans expenses_parentincome
expenses_parentloans expenses_scholarshipsgrants expenses_moneyfromjob
expenses_moneyfromsavings expenses_moneyborrowed expenses_creditcard
studentloan_expectedamount finknowledge_score financialbehavior parfinsupp
managemoneywell financial_socialization/ rsquare;
run;

/* Dropping out of School*/
proc logistic descending;
model owe_considerdropout = female gender_other AfAmerican Hispanic
AsAmerican RaceOther age lowGPA fouryearprivate twoyearpublic Instate_tuition
firstgeneration International_Citizen/ rsquare;
run;

proc logistic descending;
model owe_considerdropout = female gender_other AfAmerican Hispanic
AsAmerican RaceOther age lowGPA fouryearprivate twoyearpublic Instate_tuition
firstgeneration International_Citizen fulltime parttime expectedsalary
expectedsalary_10years expenses_studentloans expenses_parentincome
expenses_parentloans expenses_scholarshipsgrants expenses_moneyfromjob
expenses_moneyfromsavings expenses_moneyborrowed expenses_creditcard
studentloan_expectedamount / rsquare;
run;

proc logistic descending;

```

```

model owe_considerdropout = female gender_other AfAmerican Hispanic
AsAmerican RaceOther age lowGPA fouryearprivate twoyearpublic Instate_tuition
firstgeneration International_Citizen fulltime parttime expectedsalary
expectedsalary_10years expenses_studentloans expenses_parentincome
expenses_parentloans expenses_scholarshipsgrants expenses_moneyfromjob
expenses_moneyfromsavings expenses_moneyborrowed expenses_creditcard
studentloan_expectedamount finknowledge_score financialbehavior parfinsupp
managemoneywell financial_socialization/ rsquare;
run;

/*Frequencies*/
Proc Freq;
Table male female gender_other white AfAmerican Hispanic AsAmerican RaceOther
age_category lowGPA fouryearpublic fouryearprivate twoyearpublic
Instate_tuition firstgeneration International_Citizen fulltime parttime;
run;

/*Financial Behavior Alpha*/
proc corr alpha;
var havebudget trackspending trackchecks paybills addsavings;
run;

/*Financial Socialization Alpha*/
proc corr alpha;
var parents_comfortable parents_moneymangement parents_rolemodel;
run;

/*Financial Stress Alpha with reverse coded componants*/
proc corr alpha;
var stress_general stress_monthlyexpenses stress_payschool
optimisticfuturerv supportselfrv collegegoodinvestmentrv;
run;

/*Mediating and Moderating Models*/
/*without SE or socialization*/
proc reg;
model financial_stress = female gender_other AfAmerican Hispanic AsAmerican
RaceOther age lowGPA fouryearprivate twoyearpublic Instate_tuition
firstgeneration International_Citizen fulltime parttime expectedsalary
expectedsalary_10years expenses_studentloans expenses_parentincome
expenses_parentloans expenses_scholarshipsgrants expenses_moneyfromjob
expenses_moneyfromsavings expenses_moneyborrowed expenses_creditcard
studentloan_expectedamount finknowledge_score financialbehavior parfinsupp
/vif tol;
run;

/*with SE*/
proc reg;
model financial_stress = female gender_other AfAmerican Hispanic AsAmerican
RaceOther age lowGPA fouryearprivate twoyearpublic Instate_tuition
firstgeneration International_Citizen fulltime parttime expectedsalary
expectedsalary_10years expenses_studentloans expenses_parentincome
expenses_parentloans expenses_scholarshipsgrants expenses_moneyfromjob
expenses_moneyfromsavings expenses_moneyborrowed expenses_creditcard
studentloan_expectedamount finknowledge_score financialbehavior parfinsupp
managemoneywell /vif tol;
run;

```

```

/*with Socialization*/
proc reg;
model financial_stress = female gender_other AfAmerican Hispanic AsAmerican
RaceOther age lowGPA fouryearprivate twoyearpublic Instate_tuition
firstgeneration International_Citizen fulltime parttime expectedsalary
expectedsalary_10years expenses_studentloans expenses_parentincome
expenses_parentloans expenses_scholarshipsgrants expenses_moneyfromjob
expenses_moneyfromsavings expenses_moneyborrowed expenses_creditcard
studentloan_expectedamount finknowledge_score financialbehavior parfinsupp
financial_socialization /vif tol;
run;

```

## Appendix D - SAS Output

The SAS System

The REG Procedure

Model: MODEL1

Dependent Variable: Financial\_Stress

<b>Number of Observations Read</b>	13205
<b>Number of Observations Used</b>	12247
<b>Number of Observations with Missing Values</b>	958

### Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
<b>Model</b>	13	10588	814.42318	69.63	<.0001
<b>Error</b>	12233	143083	11.69648		
<b>Corrected Total</b>	12246	153671			

<b>Root MSE</b>	3.42001	<b>R-Square</b>	0.0689
<b>Dependent Mean</b>	14.54887	<b>Adj R-Sq</b>	0.0679
<b>Coeff Var</b>	23.50706		

### Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
<b>Intercept</b>	Intercept	1	13.66231	0.14728	92.76	<.0001	.	0
<b>female</b>		1	1.23361	0.06649	18.55	<.0001	0.97281	1.02795
<b>gender_other</b>		1	2.25874	0.40706	5.55	<.0001	0.98619	1.01400
<b>AfAmerican</b>		1	0.05414	0.15515	0.35	0.7271	0.95481	1.04733
<b>Hispanic</b>		1	0.20848	0.13786	1.51	0.1305	0.94523	1.05795

Variable	Label	Parameter Estimates						
		D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
<b>AsAmerican</b>		<b>1</b>	0.05032	0.14921	0.34	0.7359	0.85357	1.17155
<b>RaceOther</b>		<b>1</b>	0.49151	0.09892	4.97	<.0001	0.97011	1.03081
<b>age</b>	Age	<b>1</b>	-0.02343	0.00443	-5.28	<.0001	0.89244	1.12052
<b>LowGPA</b>		<b>1</b>	1.28508	0.07630	16.84	<.0001	0.97600	1.02459
<b>fouryearprivate</b>		<b>1</b>	-0.03957	0.13982	-0.28	0.7772	0.58328	1.71446
<b>twoyearpublic</b>		<b>1</b>	0.20354	0.11898	1.71	0.0872	0.90303	1.10738
<b>Instate_tuition</b>		<b>1</b>	-0.11320	0.10316	-1.10	0.2725	0.55500	1.80180
<b>FirstGeneration</b>		<b>1</b>	0.80259	0.06498	12.35	<.0001	0.92407	1.08217
<b>International_Citizen</b>		<b>1</b>	-0.27413	0.20994	-1.31	0.1917	0.82405	1.21352

The SAS System

The REG Procedure

Model: MODEL1

Dependent Variable: Financial\_Stress

<b>Number of Observations Read</b>	13205
<b>Number of Observations Used</b>	12247
<b>Number of Observations with Missing Values</b>	958

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
<b>Model</b>	26	36632	1408.92664	147.11	<.0001
<b>Error</b>	12220	117038	9.57761		
<b>Corrected Total</b>	12246	153671			

<b>Root MSE</b>	3.09477	<b>R-Square</b>	0.2384
<b>Dependent Mean</b>	14.54887	<b>Adj R-Sq</b>	0.2368
<b>Coeff Var</b>	21.27156		

**Parameter Estimates**

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
<b>Intercept</b>	Intercept	1	14.85975	0.26162	56.80	<.0001	.	0
<b>female</b>		1	0.86025	0.06213	13.85	<.0001	0.91242	1.09599
<b>gender_other</b>		1	1.90842	0.36895	5.17	<.0001	0.98298	1.01731
<b>AfAmerican</b>		1	-0.09729	0.14171	-0.69	0.4924	0.93716	1.06705
<b>Hispanic</b>		1	0.47866	0.12596	3.80	0.0001	0.92703	1.07871



Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
AsAmerican		1	0.52353	0.13661	3.83	0.0001	0.83376	1.19938
RaceOther		1	0.56159	0.08996	6.24	<.0001	0.96034	1.04129
age	Age	1	-0.05472	0.00439	-12.47	<.0001	0.74596	1.34056
LowGPA		1	0.69685	0.07043	9.89	<.0001	0.93816	1.06591
fouryearprivate		1	0.03287	0.12738	0.26	0.7964	0.57547	1.73770
twoyearpublic		1	0.42002	0.10867	3.87	0.0001	0.88642	1.12814
Instate_tuition		1	0.09142	0.09469	0.97	0.3343	0.53944	1.85376
FirstGeneration		1	0.38052	0.06061	6.28	<.0001	0.86987	1.14960
International_Citizen		1	0.34971	0.19239	1.82	0.0691	0.80342	1.24468
fulltime		1	0.04840	0.10158	0.48	0.6338	0.54567	1.83260
parttime		1	0.04935	0.06997	0.71	0.4806	0.64368	1.55356
expectedsalary	What do you expect your starting annual salary to be when you enter the workforce after completin...	1	-0.12672	0.01475	-8.59	<.0001	0.86061	1.16197

Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
<b>expectedsalary_10years</b>	What do you expect your annual salary to be 10 years after entering the workforce?	<b>1</b>	-0.25432	0.01901	-13.38	<.0001	0.82708	1.20907
<b>expenses_studentloans</b>	Please indicate how much of your college/university expenses are paid for by the following sou...- Student loans I have taken out for myself	<b>1</b>	0.26392	0.03172	8.32	<.0001	0.44639	2.24021
<b>expenses_parentincome</b>	Please indicate how much of your college/university expenses are paid for by the following sou...- Parents or other family members from their current	<b>1</b>	-0.17057	0.02874	-5.93	<.0001	0.58733	1.70261

Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
	income or past savings							
<b>expenses_parentloans</b>	Please indicate how much of your coll ege/ university expenses are paid for by the following sou...- Parents or other family members from loans taken out to assist me	<b>1</b>	0.23375	0.0416 7	5.61	<.00 01	0.86333	1.1583 1
<b>expenses_scholarships grants</b>	Please indicate how much of your coll ege/ university expenses are paid for by the following sou...- Scholarship s or grants that don't need to be repaid	<b>1</b>	- 0.22815	0.0266 1	-8.58	<.00 01	0.75685	1.3212 6
<b>expenses_moneyfromj ob</b>	Please indicate how much	<b>1</b>	0.14517	0.0337 4	4.30	<.00 01	0.63645	1.5712 2

Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
	of your college/university expenses are paid for by the following sou...- Money from my current job							
<b>expenses_moneyfromsavings</b>	Please indicate how much of your college/university expenses are paid for by the following sou...- Money from my savings	1	0.10613	0.03433	3.09	0.0020	0.77453	1.29111
<b>expenses_moneyborrowed</b>	Please indicate how much of your college/university expenses are paid for by the following sou...- Money borrowed	1	0.52197	0.05605	9.31	<.0001	0.87308	1.14538

Parameter Estimates								
Variable	Label	D F	Parame ter Estimate	Standar d Error	t Value	Pr >  t	Tolerance	Variance Inflation
	from family or friends							
<b>expenses_creditcard</b>	Please indicate how much of your coll ege/ university expenses are paid for by the following sou...- Credit cards	<b>1</b>	0.21267	0.0556 5	3.82	0.000 1	0.86164	1.1605 7
<b>studentloan_expecteda mount</b>	How much student loan debt do you EXPECT to have accumulate d when you complete your current degree?	<b>1</b>	0.35059	0.0168 0	20.86	<.00 01	0.44323	2.2561 7

The SAS System

The REG Procedure

Model: MODEL1

Dependent Variable: Financial\_Stress

<b>Number of Observations Read</b>	13205
<b>Number of Observations Used</b>	12085
<b>Number of Observations with Missing Values</b>	1120

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
<b>Model</b>	31	46377	1496.01876	170.65	<.0001
<b>Error</b>	12053	105665	8.76668		
<b>Corrected Total</b>	12084	152041			

<b>Root MSE</b>	2.96086	<b>R-Square</b>	0.3050
<b>Dependent Mean</b>	14.55134	<b>Adj R-Sq</b>	0.3032
<b>Coeff Var</b>	20.34766		

**Parameter Estimates**

Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
<b>Intercept</b>	Intercept	1	20.53117	0.31865	64.43	<.0001	.	0
<b>female</b>		1	0.69450	0.06071	11.44	<.0001	0.88469	1.13034
<b>gender_other</b>		1	1.43370	0.35567	4.03	<.0001	0.98183	1.01851
<b>AfAmerican</b>		1	-0.28946	0.13796	-2.10	0.0359	0.93070	1.07446
<b>Hispanic</b>		1	0.34657	0.12144	2.85	0.0043	0.92117	1.08558

Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
AsAmerican		1	0.42331	0.13192	3.21	0.0013	0.83115	1.20315
RaceOther		1	0.42543	0.08678	4.90	<.0001	0.95533	1.04675
age	Age	1	-0.06454	0.00435	-14.85	<.0001	0.70765	1.41312
LowGPA		1	0.48806	0.06813	7.16	<.0001	0.92728	1.07842
fouryearprivate		1	-0.01498	0.12284	-0.12	0.9030	0.57495	1.73929
twoyearpublic		1	0.38156	0.10506	3.63	0.0003	0.88369	1.13162
Instate_tuition		1	-0.01389	0.09135	-0.15	0.8792	0.53831	1.85765
FirstGeneration		1	0.27626	0.05882	4.70	<.0001	0.85620	1.16795
International_Citizen		1	0.18244	0.18584	0.98	0.3263	0.80504	1.24217
fulltime		1	-0.11812	0.10032	-1.18	0.2391	0.51861	1.92824
parttime		1	-0.03442	0.06973	-0.49	0.6215	0.60115	1.66348
expectedsalary	What do you expect your starting annual salary to be when you enter the workforce after completin...	1	-0.11215	0.01420	-7.90	<.0001	0.86089	1.16159
expectedsalary_10years	What do you expect your	1	-0.21221	0.01847	-11.49	<.0001	0.81630	1.22505

Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
	annual salary to be 10 years after entering the workforce?							
<b>expenses_studentloans</b>	Please indicate how much of your colle ge/ university expenses are paid for by the following sou...- Student loans I have taken out for myself	<b>1</b>	0.21196	0.03065	6.92	<.0001	0.44280	2.25837
<b>expenses_parentincome</b>	Please indicate how much of your colle ge/ university expenses are paid for by the following sou...- Parents or other family members from their current income or past savings	<b>1</b>	-0.07221	0.03146	-2.30	0.0217	0.45602	2.19287
<b>expenses_parentloans</b>	Please indicate how	<b>1</b>	0.20249	0.04033	5.02	<.0001	0.85789	1.16566



Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
	much of your colle ge/ university expenses are paid for by the following sou...- Parents or other family members from loans taken out to assist me							
<b>expenses_scholarships grants</b>	Please indicate how much of your colle ge/ university expenses are paid for by the following sou...- Scholarships or grants that don't need to be repaid	<b>1</b>	- 0.22690	0.0257 9	-8.80	<.00 01	0.74801	1.3368 8
<b>expenses_moneyfromj ob</b>	Please indicate how much of your colle ge/ university expenses are paid for by the following sou...-Money	<b>1</b>	0.14754	0.0326 5	4.52	<.00 01	0.62991	1.5875 4

Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
<b>expenses_moneyfromsavings</b>	from my current job Please indicate how much of your college/university expenses are paid for by the following sou...-Money from my savings	1	0.17859	0.03357	5.32	<.0001	0.75250	1.32891
<b>expenses_moneyborrowed</b>	Please indicate how much of your college/university expenses are paid for by the following sou...-Money borrowed from family or friends	1	0.46497	0.05421	8.58	<.0001	0.86748	1.15277
<b>expenses_creditcard</b>	Please indicate how much of your college/university expenses are paid for by the following sou...-Credit cards	1	0.09843	0.05382	1.83	0.0674	0.85542	1.16901

Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
<b>studentloan_expected amount</b>	How much student loan debt do you EXPECT to have accumulated when you complete your current degree?	<b>1</b>	0.30954	0.01628	19.02	<.0001	0.43803	2.28296
<b>finknowledge_SCORE E</b>	RECODE-SCORE_Number correct out of the 5 financial knowledge questions	<b>1</b>	-0.11677	0.02168	-5.39	<.0001	0.89221	1.12081
<b>FinancialBehavior</b>		<b>1</b>	0.03519	0.01036	3.40	0.0007	0.78876	1.26781
<b>ParFinSupp</b>		<b>1</b>	-0.07371	0.01798	-4.10	<.0001	0.47020	2.12675
<b>managemoneywell</b>	Please indicate the extent to which you agree or disagree with the following statements: - I manage my money well.	<b>1</b>	-1.14021	0.04641	-24.57	<.0001	0.77867	1.28423
<b>financial_socialization</b>		<b>1</b>	-0.20731	0.01236	-16.78	<.0001	0.79860	1.25220

The SAS System

The LOGISTIC Procedure

**Model Information**

<b>Data Set</b>	NSFWS.NSFWS12
<b>Response Variable</b>	owe_neglectacademic Please indicate the best response to the following questions:-Has the amount of money you owe ever caused you to neglect your academic studies?
<b>Number of Response Levels</b>	2
<b>Model</b>	binary logit
<b>Optimization Technique</b>	Fisher's scoring

**Number of Observations Read** 13205

**Number of Observations Used** 12247

**Response Profile**

Ordered Value	owe_neglectacademic	Total Frequency
1	2	4027
2	1	8220

Probability modeled is owe\_neglectacademic=2.

**Note: 958 observations were deleted due to missing values for the response or explanatory variables.**

**Model Convergence Status**

Convergence criterion (GCONV=1E-8) satisfied.

**Model Fit Statistics**

Criterion	Intercept Only	Intercept and Covariates
<b>AIC</b>	15514.942	14975.869
<b>SC</b>	15522.355	15079.651

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
-2 Log L	15512.942	14947.869

**R-Square** 0.0451 **Max-rescaled R-Square** 0.0628

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
<b>Likelihood Ratio</b>	565.0735	13	<.0001
<b>Score</b>	579.6864	13	<.0001
<b>Wald</b>	552.0565	13	<.0001

Analysis of Maximum Likelihood Estimates					
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
<b>Intercept</b>	1	-1.3406	0.0935	205.4552	<.0001
<b>female</b>	1	0.0776	0.0426	3.3185	0.0685
<b>gender_other</b>	1	0.4479	0.2478	3.2674	0.0707
<b>AfAmerican</b>	1	0.0239	0.0969	0.0611	0.8048
<b>Hispanic</b>	1	0.1800	0.0851	4.4792	0.0343
<b>AsAmerican</b>	1	0.0602	0.0956	0.3966	0.5288
<b>RaceOther</b>	1	0.2921	0.0613	22.7439	<.0001
<b>age</b>	1	0.0104	0.00275	14.2133	0.0002
<b>LowGPA</b>	1	0.9058	0.0459	388.8053	<.0001
<b>fouryearprivate</b>	1	-0.3107	0.0918	11.4440	0.0007
<b>twoyearpublic</b>	1	-0.1556	0.0752	4.2792	0.0386
<b>Instate_tuition</b>	1	-0.0408	0.0656	0.3865	0.5342
<b>FirstGeneration</b>	1	0.3133	0.0410	58.2922	<.0001
<b>International_Citize</b>	1	-0.1364	0.1362	1.0033	0.3165

<b>Odds Ratio Estimates</b>				
<b>Effect</b>	<b>Point Estimate</b>	<b>95% Wald Confidence Limits</b>		
<b>female</b>	1.081	0.994	1.175	
<b>gender_other</b>	1.565	0.963	2.543	
<b>AfAmerican</b>	1.024	0.847	1.238	
<b>Hispanic</b>	1.197	1.013	1.414	
<b>AsAmerican</b>	1.062	0.881	1.281	
<b>RaceOther</b>	1.339	1.188	1.510	
<b>age</b>	1.010	1.005	1.016	
<b>LowGPA</b>	2.474	2.261	2.707	
<b>fouryearprivate</b>	0.733	0.612	0.878	
<b>twoyearpublic</b>	0.856	0.739	0.992	
<b>Instate_tuition</b>	0.960	0.844	1.092	
<b>FirstGeneration</b>	1.368	1.262	1.483	
<b>International_Citize</b>	0.872	0.668	1.139	

<b>Association of Predicted Probabilities and Observed Responses</b>				
<b>Percent Concordant</b>	62.1	<b>Somers' D</b>	0.254	
<b>Percent Discordant</b>	36.7	<b>Gamma</b>	0.257	
<b>Percent Tied</b>	1.2	<b>Tau-a</b>	0.112	
<b>Pairs</b>	33101940	<b>c</b>	0.627	

The SAS System

The LOGISTIC Procedure

**Model Information**

<b>Data Set</b>	NSFWS.NSFWS12
<b>Response Variable</b>	owe_neglectacademic Please indicate the best response to the following questions:-Has the amount of money you owe ever caused you to neglect your academic studies?
<b>Number of Response Levels</b>	2
<b>Model</b>	binary logit
<b>Optimization Technique</b>	Fisher's scoring

**Number of Observations Read** 13205

**Number of Observations Used** 12247

**Response Profile**

<b>Ordered Value</b>	<b>owe_neglectacademic</b>	<b>Total Frequency</b>
1	2	4027
2	1	8220

Probability modeled is owe\_neglectacademic=2.

**Note: 958 observations were deleted due to missing values for the response or explanatory variables.**

**Model Convergence Status**

Convergence criterion (GCONV=1E-8) satisfied.

**Model Fit Statistics**

<b>Criterion</b>	<b>Intercept Only</b>	<b>Intercept and Covariates</b>
<b>AIC</b>	15514.942	13776.526
<b>SC</b>	15522.355	13976.678

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
-2 Log L	15512.942	13722.526

**R-Square** 0.1360 **Max-rescaled R-Square** 0.1894

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
<b>Likelihood Ratio</b>	1790.4160	26	<.0001
<b>Score</b>	1713.5128	26	<.0001
<b>Wald</b>	1460.2013	26	<.0001

Analysis of Maximum Likelihood Estimates					
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
<b>Intercept</b>	1	-2.1644	0.1967	121.1337	<.0001
<b>female</b>	1	0.0174	0.0462	0.1416	0.7067
<b>gender_other</b>	1	0.4970	0.2627	3.5808	0.0585
<b>AfAmerican</b>	1	-0.0648	0.1032	0.3935	0.5304
<b>Hispanic</b>	1	0.2906	0.0910	10.2070	0.0014
<b>AsAmerican</b>	1	0.2860	0.1039	7.5735	0.0059
<b>RaceOther</b>	1	0.3670	0.0651	31.7375	<.0001
<b>age</b>	1	-0.0131	0.00324	16.2738	<.0001
<b>LowGPA</b>	1	0.7024	0.0491	204.4428	<.0001
<b>fouryearprivate</b>	1	-0.2912	0.0977	8.8829	0.0029
<b>twoyearpublic</b>	1	-0.1225	0.0794	2.3793	0.1230
<b>Instate_tuition</b>	1	0.00113	0.0711	0.0003	0.9873
<b>FirstGeneration</b>	1	0.1000	0.0442	5.1249	0.0236
<b>International_Citize</b>	1	0.2343	0.1477	2.5171	0.1126
<b>fulltime</b>	1	0.6675	0.0742	81.0045	<.0001



<b>Analysis of Maximum Likelihood Estimates</b>					
<b>Parameter</b>	<b>DF</b>	<b>Estimate</b>	<b>Standard Error</b>	<b>Wald Chi-Square</b>	<b>Pr &gt; ChiSq</b>
<b>parttime</b>	1	0.4169	0.0546	58.3084	<.0001
<b>expectedsalary</b>	1	0.00396	0.0112	0.1243	0.7244
<b>expectedsalary_10yea</b>	1	-0.0116	0.0144	0.6574	0.4175
<b>expenses_studentloan</b>	1	0.1142	0.0223	26.2104	<.0001
<b>expenses_parentincom</b>	1	-0.1852	0.0226	66.9879	<.0001
<b>expenses_parentloans</b>	1	0.0674	0.0303	4.9470	0.0261
<b>expenses_scholarship</b>	1	-0.1016	0.0199	25.9687	<.0001
<b>expenses_moneyfromjo</b>	1	0.1391	0.0240	33.5805	<.0001
<b>expenses_moneyfromsa</b>	1	0.0473	0.0250	3.5744	0.0587
<b>expenses_moneyborrow</b>	1	0.3502	0.0401	76.1454	<.0001
<b>expenses_creditcard</b>	1	0.3284	0.0404	66.0576	<.0001
<b>studentloan_expected</b>	1	0.1145	0.0117	95.1098	<.0001

<b>Odds Ratio Estimates</b>			
<b>Effect</b>	<b>Point Estimate</b>	<b>95% Wald Confidence Limits</b>	
<b>female</b>	1.018	0.929	1.114
<b>gender_other</b>	1.644	0.982	2.751
<b>AfAmerican</b>	0.937	0.766	1.147
<b>Hispanic</b>	1.337	1.119	1.598
<b>AsAmerican</b>	1.331	1.086	1.632
<b>RaceOther</b>	1.443	1.270	1.640
<b>age</b>	0.987	0.981	0.993
<b>LowGPA</b>	2.019	1.833	2.223
<b>fouryearprivate</b>	0.747	0.617	0.905
<b>twoyearpublic</b>	0.885	0.757	1.034
<b>Instate_tuition</b>	1.001	0.871	1.151
<b>FirstGeneration</b>	1.105	1.014	1.205

<b>Odds Ratio Estimates</b>			
<b>Effect</b>	<b>Point Estimate</b>	<b>95% Wald Confidence Limits</b>	
<b>International_Citize</b>	1.264	0.946	1.689
<b>fulltime</b>	1.949	1.686	2.254
<b>parttime</b>	1.517	1.363	1.689
<b>expectedsalary</b>	1.004	0.982	1.026
<b>expectedsalary_10yea</b>	0.988	0.961	1.017
<b>expenses_studentloan</b>	1.121	1.073	1.171
<b>expenses_parentincom</b>	0.831	0.795	0.869
<b>expenses_parentloans</b>	1.070	1.008	1.135
<b>expenses_scholarship</b>	0.903	0.869	0.939
<b>expenses_moneyfromjo</b>	1.149	1.096	1.205
<b>expenses_moneyfromsa</b>	1.048	0.998	1.101
<b>expenses_moneyborrow</b>	1.419	1.312	1.535
<b>expenses_creditcard</b>	1.389	1.283	1.503
<b>studentloan_expected</b>	1.121	1.096	1.147

<b>Association of Predicted Probabilities and Observed Responses</b>			
<b>Percent Concordant</b>	72.8	<b>Somers' D</b>	0.459
<b>Percent Discordant</b>	26.9	<b>Gamma</b>	0.460
<b>Percent Tied</b>	0.3	<b>Tau-a</b>	0.203
<b>Pairs</b>	33101940	<b>c</b>	0.729

## The SAS System

### The LOGISTIC Procedure

#### Model Information

<b>Data Set</b>	NSFWS.NSFWS12
<b>Response Variable</b>	owe_neglectacademic Please indicate the best response to the following questions:-Has the amount of money you owe ever caused you to neglect your academic studies?
<b>Number of Response Levels</b>	2
<b>Model</b>	binary logit
<b>Optimization Technique</b>	Fisher's scoring

**Number of Observations Read** 13205

**Number of Observations Used** 12085

#### Response Profile

Ordered Value	owe_neglectacademic	Total Frequency
1	2	3983
2	1	8102

Probability modeled is owe\_neglectacademic=2.

**Note:** 1120 observations were deleted due to missing values for the response or explanatory variables.

#### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

#### Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
<b>AIC</b>	15322.935	13367.814
<b>SC</b>	15330.335	13604.605

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
-2 Log L	15320.935	13303.814

**R-Square** 0.1537 **Max-rescaled R-Square** 0.2139

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
<b>Likelihood Ratio</b>	2017.1217	31	<.0001
<b>Score</b>	1906.3794	31	<.0001
<b>Wald</b>	1597.4852	31	<.0001

Analysis of Maximum Likelihood Estimates					
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
<b>Intercept</b>	1	-0.3014	0.2501	1.4529	0.2281
<b>female</b>	1	-0.0136	0.0477	0.0812	0.7757
<b>gender_other</b>	1	0.3968	0.2683	2.1868	0.1392
<b>AfAmerican</b>	1	-0.1069	0.1062	1.0123	0.3144
<b>Hispanic</b>	1	0.2761	0.0928	8.8539	0.0029
<b>AsAmerican</b>	1	0.3004	0.1054	8.1199	0.0044
<b>RaceOther</b>	1	0.3370	0.0663	25.8160	<.0001
<b>age</b>	1	-0.0201	0.00341	34.5878	<.0001
<b>LowGPA</b>	1	0.6564	0.0502	171.2240	<.0001
<b>fouryearprivate</b>	1	-0.3440	0.0994	11.9744	0.0005
<b>twoyearpublic</b>	1	-0.1489	0.0812	3.3623	0.0667
<b>Instate_tuition</b>	1	-0.0761	0.0723	1.1072	0.2927
<b>FirstGeneration</b>	1	0.0443	0.0453	0.9566	0.3281
<b>International_Citize</b>	1	0.1703	0.1511	1.2710	0.2596
<b>fulltime</b>	1	0.5483	0.0772	50.3933	<.0001

<b>Analysis of Maximum Likelihood Estimates</b>					
<b>Parameter</b>	<b>DF</b>	<b>Estimate</b>	<b>Standard Error</b>	<b>Wald Chi-Square</b>	<b>Pr &gt; ChiSq</b>
<b>parttime</b>	1	0.3471	0.0571	36.9507	<.0001
<b>expectedsalary</b>	1	0.0105	0.0114	0.8489	0.3569
<b>expectedsalary_10yea</b>	1	0.00348	0.0148	0.0553	0.8140
<b>expenses_studentloan</b>	1	0.0919	0.0228	16.2169	<.0001
<b>expenses_parentincom</b>	1	-0.1003	0.0258	15.0667	0.0001
<b>expenses_parentloans</b>	1	0.0767	0.0308	6.1948	0.0128
<b>expenses_scholarship</b>	1	-0.1090	0.0204	28.5116	<.0001
<b>expenses_moneyfromjo</b>	1	0.1379	0.0245	31.5939	<.0001
<b>expenses_moneyfromsa</b>	1	0.0637	0.0257	6.1397	0.0132
<b>expenses_moneyborrow</b>	1	0.3380	0.0411	67.5316	<.0001
<b>expenses_creditcard</b>	1	0.2859	0.0412	48.2076	<.0001
<b>studentloan_expected</b>	1	0.0997	0.0120	69.0450	<.0001
<b>finknowledge_SCORE</b>	1	-0.00668	0.0171	0.1522	0.6964
<b>FinancialBehavior</b>	1	0.0212	0.00825	6.6150	0.0101
<b>ParFinSupp</b>	1	-0.0728	0.0151	23.1961	<.0001
<b>managemoneywell</b>	1	-0.3092	0.0365	71.8901	<.0001
<b>financial_socializat</b>	1	-0.1055	0.00945	124.6491	<.0001

<b>Odds Ratio Estimates</b>			
<b>Effect</b>	<b>Point Estimate</b>	<b>95% Wald Confidence Limits</b>	
<b>female</b>	0.987	0.899	1.083
<b>gender_other</b>	1.487	0.879	2.516
<b>AfAmerican</b>	0.899	0.730	1.107
<b>Hispanic</b>	1.318	1.099	1.581
<b>AsAmerican</b>	1.350	1.098	1.660
<b>RaceOther</b>	1.401	1.230	1.595
<b>age</b>	0.980	0.974	0.987

<b>Odds Ratio Estimates</b>			
<b>Effect</b>	<b>Point Estimate</b>	<b>95% Wald Confidence Limits</b>	
<b>LowGPA</b>	1.928	1.747	2.127
<b>fouryearprivate</b>	0.709	0.583	0.861
<b>twoyearpublic</b>	0.862	0.735	1.010
<b>Instate_tuition</b>	0.927	0.804	1.068
<b>FirstGeneration</b>	1.045	0.957	1.142
<b>International_Citize</b>	1.186	0.882	1.594
<b>fulltime</b>	1.730	1.487	2.013
<b>parttime</b>	1.415	1.265	1.582
<b>expectedsalary</b>	1.011	0.988	1.033
<b>expectedsalary_10yea</b>	1.003	0.975	1.033
<b>expenses_studentloan</b>	1.096	1.048	1.146
<b>expenses_parentincom</b>	0.905	0.860	0.952
<b>expenses_parentloans</b>	1.080	1.016	1.147
<b>expenses_scholarship</b>	0.897	0.862	0.933
<b>expenses_moneyfromjo</b>	1.148	1.094	1.204
<b>expenses_moneyfromsa</b>	1.066	1.013	1.121
<b>expenses_moneyborrow</b>	1.402	1.293	1.520
<b>expenses_creditcard</b>	1.331	1.228	1.443
<b>studentloan_expected</b>	1.105	1.079	1.131
<b>finknowledge_SCORE</b>	0.993	0.961	1.027
<b>FinancialBehavior</b>	1.021	1.005	1.038
<b>ParFinSupp</b>	0.930	0.903	0.958
<b>managemoneywell</b>	0.734	0.683	0.788
<b>financial_socializat</b>	0.900	0.883	0.917

**Association of Predicted Probabilities and Observed Responses**

**Percent Concordant** 74.2 **Somers' D** 0.487

<b>Association of Predicted Probabilities and Observed Responses</b>			
<b>Percent Discordant</b>	25.5	<b>Gamma</b>	0.488
<b>Percent Tied</b>	0.3	<b>Tau-a</b>	0.215
<b>Pairs</b>	32270266	<b>c</b>	0.743

## The SAS System

### The LOGISTIC Procedure

#### Model Information

<b>Data Set</b>	NSFWS.NSFWS12	
<b>Response Variable</b>	owe_reduceclass	Please indicate the best response to the following questions:-Has the amount of money you owe ever caused you to reduce your class load?
<b>Number of Response Levels</b>	2	
<b>Model</b>	binary logit	
<b>Optimization Technique</b>	Fisher's scoring	

**Number of Observations Read** 13205

**Number of Observations Used** 12247

#### Response Profile

Ordered Value	owe_reduceclass	Total Frequency
1	2	3537
2	1	8710

Probability modeled is owe\_reduceclass=2.

**Note: 958 observations were deleted due to missing values for the response or explanatory variables.**

#### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

#### Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
<b>AIC</b>	14724.819	14095.392
<b>SC</b>	14732.232	14199.174



Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
-2 Log L	14722.819	14067.392

**R-Square** 0.0521 **Max-rescaled R-Square** 0.0745

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
<b>Likelihood Ratio</b>	655.4279	13	<.0001
<b>Score</b>	663.7408	13	<.0001
<b>Wald</b>	622.3250	13	<.0001

Analysis of Maximum Likelihood Estimates					
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
<b>Intercept</b>	1	-2.0829	0.0975	456.6608	<.0001
<b>female</b>	1	0.1320	0.0445	8.8144	0.0030
<b>gender_other</b>	1	0.3819	0.2599	2.1590	0.1417
<b>AfAmerican</b>	1	-0.00024	0.0994	0.0000	0.9981
<b>Hispanic</b>	1	0.1802	0.0871	4.2757	0.0387
<b>AsAmerican</b>	1	-0.0249	0.1012	0.0604	0.8059
<b>RaceOther</b>	1	0.1248	0.0646	3.7385	0.0532
<b>age</b>	1	0.0297	0.00276	116.0872	<.0001
<b>LowGPA</b>	1	0.7750	0.0471	270.4941	<.0001
<b>fouryearprivate</b>	1	-0.6206	0.1026	36.5620	<.0001
<b>twoyearpublic</b>	1	0.1390	0.0738	3.5451	0.0597
<b>Instate_tuition</b>	1	0.0562	0.0692	0.6597	0.4167
<b>FirstGeneration</b>	1	0.3377	0.0425	63.0386	<.0001
<b>International_Citize</b>	1	0.1753	0.1392	1.5861	0.2079

<b>Odds Ratio Estimates</b>			
<b>Effect</b>	<b>Point Estimate</b>	<b>95% Wald Confidence Limits</b>	
<b>female</b>	1.141	1.046	1.245
<b>gender_other</b>	1.465	0.880	2.439
<b>AfAmerican</b>	1.000	0.823	1.215
<b>Hispanic</b>	1.197	1.009	1.420
<b>AsAmerican</b>	0.975	0.800	1.189
<b>RaceOther</b>	1.133	0.998	1.286
<b>age</b>	1.030	1.025	1.036
<b>LowGPA</b>	2.171	1.979	2.381
<b>fouryearprivate</b>	0.538	0.440	0.657
<b>twoyearpublic</b>	1.149	0.994	1.328
<b>Instate_tuition</b>	1.058	0.924	1.211
<b>FirstGeneration</b>	1.402	1.290	1.524
<b>International_Citize</b>	1.192	0.907	1.565

<b>Association of Predicted Probabilities and Observed Responses</b>			
<b>Percent Concordant</b>	64.8	<b>Somers' D</b>	0.306
<b>Percent Discordant</b>	34.2	<b>Gamma</b>	0.309
<b>Percent Tied</b>	1.0	<b>Tau-a</b>	0.126
<b>Pairs</b>	30807270	<b>c</b>	0.653

## The SAS System

### The LOGISTIC Procedure

#### Model Information

<b>Data Set</b>	NSFWS.NSFWS12	
<b>Response Variable</b>	owe_reduceclass	Please indicate the best response to the following questions:-Has the amount of money you owe ever caused you to reduce your class load?
<b>Number of Response Levels</b>	2	
<b>Model</b>	binary logit	
<b>Optimization Technique</b>	Fisher's scoring	

**Number of Observations Read** 13205

**Number of Observations Used** 12247

#### Response Profile

Ordered Value	owe_reduceclass	Total Frequency
1	2	3537
2	1	8710

Probability modeled is owe\_reduceclass=2.

**Note: 958 observations were deleted due to missing values for the response or explanatory variables.**

#### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

#### Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
<b>AIC</b>	14724.819	12961.743
<b>SC</b>	14732.232	13161.895

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
-2 Log L	14722.819	12907.743

**R-Square** 0.1377 **Max-rescaled R-Square** 0.1969

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
<b>Likelihood Ratio</b>	1815.0761	26	<.0001
<b>Score</b>	1747.4339	26	<.0001
<b>Wald</b>	1469.8313	26	<.0001

Analysis of Maximum Likelihood Estimates					
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
<b>Intercept</b>	1	-2.5642	0.2017	161.6524	<.0001
<b>female</b>	1	0.0866	0.0481	3.2378	0.0720
<b>gender_other</b>	1	0.4293	0.2763	2.4137	0.1203
<b>AfAmerican</b>	1	-0.0366	0.1055	0.1204	0.7286
<b>Hispanic</b>	1	0.3012	0.0936	10.3498	0.0013
<b>AsAmerican</b>	1	0.1914	0.1100	3.0274	0.0819
<b>RaceOther</b>	1	0.1900	0.0684	7.7244	0.0054
<b>age</b>	1	0.00586	0.00319	3.3806	0.0660
<b>LowGPA</b>	1	0.5586	0.0504	122.5940	<.0001
<b>fouryearprivate</b>	1	-0.6104	0.1084	31.7024	<.0001
<b>twoyearpublic</b>	1	0.1393	0.0783	3.1693	0.0750
<b>Instate_tuition</b>	1	0.0946	0.0745	1.6091	0.2046
<b>FirstGeneration</b>	1	0.1478	0.0457	10.4716	0.0012
<b>International_Citize</b>	1	0.4866	0.1521	10.2356	0.0014
<b>fulltime</b>	1	0.8591	0.0752	130.4517	<.0001

<b>Analysis of Maximum Likelihood Estimates</b>					
<b>Parameter</b>	<b>DF</b>	<b>Estimate</b>	<b>Standard Error</b>	<b>Wald Chi-Square</b>	<b>Pr &gt; ChiSq</b>
<b>parttime</b>	1	0.3645	0.0578	39.7368	<.0001
<b>expectedsalary</b>	1	-0.00609	0.0118	0.2679	0.6047
<b>expectedsalary_10yea</b>	1	-0.0170	0.0149	1.2998	0.2542
<b>expenses_studentloan</b>	1	0.0905	0.0227	15.8306	<.0001
<b>expenses_parentincom</b>	1	-0.1996	0.0237	70.7754	<.0001
<b>expenses_parentloans</b>	1	0.0244	0.0318	0.5876	0.4434
<b>expenses_scholarship</b>	1	-0.1599	0.0205	60.6960	<.0001
<b>expenses_moneyfromjo</b>	1	0.1733	0.0243	50.7441	<.0001
<b>expenses_moneyfromsa</b>	1	0.0506	0.0255	3.9228	0.0476
<b>expenses_moneyborrow</b>	1	0.3622	0.0406	79.5402	<.0001
<b>expenses_creditcard</b>	1	0.3207	0.0406	62.3453	<.0001
<b>studentloan_expected</b>	1	0.0825	0.0121	46.6410	<.0001

<b>Odds Ratio Estimates</b>			
<b>Effect</b>	<b>Point Estimate</b>	<b>95% Wald Confidence Limits</b>	
<b>female</b>	1.091	0.992	1.198
<b>gender_other</b>	1.536	0.894	2.640
<b>AfAmerican</b>	0.964	0.784	1.186
<b>Hispanic</b>	1.351	1.125	1.624
<b>AsAmerican</b>	1.211	0.976	1.502
<b>RaceOther</b>	1.209	1.058	1.383
<b>age</b>	1.006	1.000	1.012
<b>LowGPA</b>	1.748	1.584	1.930
<b>fouryearprivate</b>	0.543	0.439	0.672
<b>twoyearpublic</b>	1.149	0.986	1.340
<b>Instate_tuition</b>	1.099	0.950	1.272
<b>FirstGeneration</b>	1.159	1.060	1.268

<b>Odds Ratio Estimates</b>			
<b>Effect</b>	<b>Point Estimate</b>	<b>95% Wald Confidence Limits</b>	
<b>International_Citize</b>	1.627	1.207	2.192
<b>fulltime</b>	2.361	2.037	2.736
<b>parttime</b>	1.440	1.286	1.613
<b>expectedsalary</b>	0.994	0.971	1.017
<b>expectedsalary_10yea</b>	0.983	0.955	1.012
<b>expenses_studentloan</b>	1.095	1.047	1.145
<b>expenses_parentincom</b>	0.819	0.782	0.858
<b>expenses_parentloans</b>	1.025	0.963	1.091
<b>expenses_scholarship</b>	0.852	0.819	0.887
<b>expenses_moneyfromjo</b>	1.189	1.134	1.247
<b>expenses_moneyfromsa</b>	1.052	1.001	1.106
<b>expenses_moneyborrow</b>	1.437	1.327	1.556
<b>expenses_creditcard</b>	1.378	1.273	1.492
<b>studentloan_expected</b>	1.086	1.061	1.112

<b>Association of Predicted Probabilities and Observed Responses</b>			
<b>Percent Concordant</b>	74.1	<b>Somers' D</b>	0.484
<b>Percent Discordant</b>	25.7	<b>Gamma</b>	0.485
<b>Percent Tied</b>	0.3	<b>Tau-a</b>	0.199
<b>Pairs</b>	30807270	<b>c</b>	0.742

# The SAS System

## The LOGISTIC Procedure

### Model Information

<b>Data Set</b>	NSFWS.NSFWS12	
<b>Response Variable</b>	owe_reduceclass	Please indicate the best response to the following questions:-Has the amount of money you owe ever caused you to reduce your class load?
<b>Number of Response Levels</b>	2	
<b>Model</b>	binary logit	
<b>Optimization Technique</b>	Fisher's scoring	

**Number of Observations Read** 13205

**Number of Observations Used** 12085

### Response Profile

Ordered Value	owe_reduceclass	Total Frequency
1	2	3497
2	1	8588

Probability modeled is owe\_reduceclass=2.

**Note:** 1120 observations were deleted due to missing values for the response or explanatory variables.

### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

### Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
<b>AIC</b>	14542.283	12670.581
<b>SC</b>	14549.683	12907.372

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
-2 Log L	14540.283	12606.581

**R-Square** 0.1479 **Max-rescaled R-Square** 0.2113

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
<b>Likelihood Ratio</b>	1933.7020	31	<.0001
<b>Score</b>	1846.3618	31	<.0001
<b>Wald</b>	1538.1766	31	<.0001

Analysis of Maximum Likelihood Estimates					
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
<b>Intercept</b>	1	-1.3190	0.2561	26.5319	<.0001
<b>female</b>	1	0.0685	0.0494	1.9219	0.1656
<b>gender_other</b>	1	0.3518	0.2802	1.5770	0.2092
<b>AfAmerican</b>	1	-0.0627	0.1080	0.3377	0.5612
<b>Hispanic</b>	1	0.2871	0.0953	9.0833	0.0026
<b>AsAmerican</b>	1	0.2148	0.1109	3.7521	0.0527
<b>RaceOther</b>	1	0.1584	0.0693	5.2193	0.0223
<b>age</b>	1	0.000869	0.00333	0.0680	0.7943
<b>LowGPA</b>	1	0.5267	0.0513	105.3676	<.0001
<b>fouryearprivate</b>	1	-0.6382	0.1098	33.7860	<.0001
<b>twoyearpublic</b>	1	0.1386	0.0794	3.0453	0.0810
<b>Instate_tuition</b>	1	0.0467	0.0756	0.3819	0.5366
<b>FirstGeneration</b>	1	0.0906	0.0466	3.7793	0.0519
<b>International_Citize</b>	1	0.4522	0.1542	8.6065	0.0033
<b>fulltime</b>	1	0.7551	0.0781	93.5114	<.0001



<b>Analysis of Maximum Likelihood Estimates</b>					
<b>Parameter</b>	<b>DF</b>	<b>Estimate</b>	<b>Standard Error</b>	<b>Wald Chi-Square</b>	<b>Pr &gt; ChiSq</b>
<b>parttime</b>	1	0.2992	0.0602	24.7176	<.0001
<b>expectedsalary</b>	1	-0.00200	0.0119	0.0280	0.8672
<b>expectedsalary_10yea</b>	1	-0.00559	0.0153	0.1338	0.7145
<b>expenses_studentloan</b>	1	0.0745	0.0232	10.3477	0.0013
<b>expenses_parentincom</b>	1	-0.1217	0.0269	20.4410	<.0001
<b>expenses_parentloans</b>	1	0.0419	0.0322	1.6976	0.1926
<b>expenses_scholarship</b>	1	-0.1693	0.0209	65.5666	<.0001
<b>expenses_moneyfromjo</b>	1	0.1654	0.0247	44.6967	<.0001
<b>expenses_moneyfromsa</b>	1	0.0581	0.0262	4.9269	0.0264
<b>expenses_moneyborrow</b>	1	0.3667	0.0414	78.2823	<.0001
<b>expenses_creditcard</b>	1	0.2910	0.0413	49.6925	<.0001
<b>studentloan_expected</b>	1	0.0656	0.0123	28.3954	<.0001
<b>finknowledge_SCORE</b>	1	-0.00651	0.0177	0.1344	0.7139
<b>FinancialBehavior</b>	1	0.0307	0.00854	12.8847	0.0003
<b>ParFinSupp</b>	1	-0.0625	0.0159	15.3954	<.0001
<b>managemoneywell</b>	1	-0.2209	0.0375	34.6795	<.0001
<b>financial_socializat</b>	1	-0.0904	0.00963	88.0736	<.0001

<b>Odds Ratio Estimates</b>			
<b>Effect</b>	<b>Point Estimate</b>	<b>95% Wald Confidence Limits</b>	
<b>female</b>	1.071	0.972	1.180
<b>gender_other</b>	1.422	0.821	2.462
<b>AfAmerican</b>	0.939	0.760	1.161
<b>Hispanic</b>	1.333	1.106	1.606
<b>AsAmerican</b>	1.240	0.997	1.541
<b>RaceOther</b>	1.172	1.023	1.342
<b>age</b>	1.001	0.994	1.007

<b>Odds Ratio Estimates</b>			
<b>Effect</b>	<b>Point Estimate</b>	<b>95% Wald Confidence Limits</b>	
<b>LowGPA</b>	1.693	1.531	1.872
<b>fouryearprivate</b>	0.528	0.426	0.655
<b>twoyearpublic</b>	1.149	0.983	1.342
<b>Instate_tuition</b>	1.048	0.904	1.215
<b>FirstGeneration</b>	1.095	0.999	1.199
<b>International_Citize</b>	1.572	1.162	2.126
<b>fulltime</b>	2.128	1.826	2.480
<b>parttime</b>	1.349	1.199	1.518
<b>expectedsalary</b>	0.998	0.975	1.022
<b>expectedsalary_10yea</b>	0.994	0.965	1.025
<b>expenses_studentloan</b>	1.077	1.030	1.127
<b>expenses_parentincom</b>	0.885	0.840	0.933
<b>expenses_parentloans</b>	1.043	0.979	1.111
<b>expenses_scholarship</b>	0.844	0.810	0.880
<b>expenses_moneyfromjo</b>	1.180	1.124	1.238
<b>expenses_moneyfromsa</b>	1.060	1.007	1.116
<b>expenses_moneyborrow</b>	1.443	1.330	1.565
<b>expenses_creditcard</b>	1.338	1.234	1.451
<b>studentloan_expected</b>	1.068	1.042	1.094
<b>finknowledge_SCORE</b>	0.994	0.960	1.029
<b>FinancialBehavior</b>	1.031	1.014	1.049
<b>ParFinSupp</b>	0.939	0.911	0.969
<b>managemoneywell</b>	0.802	0.745	0.863
<b>financial_socializat</b>	0.914	0.896	0.931

**Association of Predicted Probabilities and Observed Responses**

**Percent Concordant** 74.8 **Somers' D** 0.498

Association of Predicted Probabilities and Observed Responses			
Percent Discordant	24.9	Gamma	0.500
Percent Tied	0.3	Tau-a	0.205
Pairs	30032236	c	0.749

## The SAS System

### The LOGISTIC Procedure

#### Model Information

<b>Data Set</b>	NSFWS.NSFWS12	
<b>Response Variable</b>	owe_considerstopout	Please indicate the best response to the following questions:-Has the amount of money you owe ever caused you to consider taking a break from college/university?
<b>Number of Response Levels</b>	2	
<b>Model</b>	binary logit	
<b>Optimization Technique</b>	Fisher's scoring	

**Number of Observations Read** 13205

**Number of Observations Used** 12247

#### Response Profile

<b>Ordered Value</b>	<b>owe_considerstopout</b>	<b>Total Frequency</b>
1	2	4941
2	1	7306

Probability modeled is owe\_considerstopout=2.

**Note: 958 observations were deleted due to missing values for the response or explanatory variables.**

#### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

#### Model Fit Statistics

<b>Criterion</b>	<b>Intercept Only</b>	<b>Intercept and Covariates</b>
<b>AIC</b>	16520.364	15816.558

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
SC	16527.777	15920.340
-2 Log L	16518.364	15788.558

**R-Square** 0.0578 **Max-rescaled R-Square** 0.0781

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
<b>Likelihood Ratio</b>	729.8062	13	<.0001
<b>Score</b>	727.5572	13	<.0001
<b>Wald</b>	686.8837	13	<.0001

Analysis of Maximum Likelihood Estimates					
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
<b>Intercept</b>	1	-1.3428	0.0907	219.1465	<.0001
<b>female</b>	1	0.0981	0.0410	5.7171	0.0168
<b>gender_other</b>	1	0.5622	0.2448	5.2743	0.0216
<b>AfAmerican</b>	1	0.0106	0.0946	0.0126	0.9107
<b>Hispanic</b>	1	0.2057	0.0831	6.1265	0.0133
<b>AsAmerican</b>	1	-0.2577	0.0953	7.3097	0.0069
<b>RaceOther</b>	1	0.2136	0.0600	12.6600	0.0004
<b>age</b>	1	0.0232	0.00268	74.9028	<.0001
<b>LowGPA</b>	1	0.9152	0.0460	396.4435	<.0001
<b>fouryearprivate</b>	1	-0.2155	0.0871	6.1142	0.0134
<b>twoyearpublic</b>	1	-0.0757	0.0722	1.1004	0.2942
<b>Instate_tuition</b>	1	-0.0435	0.0635	0.4683	0.4938
<b>FirstGeneration</b>	1	0.3844	0.0395	94.4738	<.0001
<b>International_Citize</b>	1	-0.1968	0.1337	2.1668	0.1410

<b>Odds Ratio Estimates</b>				
<b>Effect</b>	<b>Point Estimate</b>	<b>95% Wald Confidence Limits</b>		
<b>female</b>	1.103	1.018	1.195	
<b>gender_other</b>	1.755	1.086	2.835	
<b>AfAmerican</b>	1.011	0.840	1.217	
<b>Hispanic</b>	1.228	1.044	1.446	
<b>AsAmerican</b>	0.773	0.641	0.932	
<b>RaceOther</b>	1.238	1.101	1.393	
<b>age</b>	1.023	1.018	1.029	
<b>LowGPA</b>	2.497	2.282	2.733	
<b>fouryearprivate</b>	0.806	0.680	0.956	
<b>twoyearpublic</b>	0.927	0.805	1.068	
<b>Instate_tuition</b>	0.957	0.845	1.084	
<b>FirstGeneration</b>	1.469	1.359	1.587	
<b>International_Citize</b>	0.821	0.632	1.067	

<b>Association of Predicted Probabilities and Observed Responses</b>			
<b>Percent Concordant</b>	64.1	<b>Somers' D</b>	0.292
<b>Percent Discordant</b>	34.8	<b>Gamma</b>	0.296
<b>Percent Tied</b>	1.1	<b>Tau-a</b>	0.141
<b>Pairs</b>	36098946	<b>c</b>	0.646

## The SAS System

### The LOGISTIC Procedure

#### Model Information

<b>Data Set</b>	NSFWS.NSFWS12	
<b>Response Variable</b>	owe_considerstopout	Please indicate the best response to the following questions:-Has the amount of money you owe ever caused you to consider taking a break from college/university?
<b>Number of Response Levels</b>	2	
<b>Model</b>	binary logit	
<b>Optimization Technique</b>	Fisher's scoring	

**Number of Observations Read** 13205

**Number of Observations Used** 12247

#### Response Profile

<b>Ordered Value</b>	<b>owe_considerstopout</b>	<b>Total Frequency</b>
1	2	4941
2	1	7306

Probability modeled is owe\_considerstopout=2.

**Note: 958 observations were deleted due to missing values for the response or explanatory variables.**

#### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

#### Model Fit Statistics

<b>Criterion</b>	<b>Intercept Only</b>	<b>Intercept and Covariates</b>
<b>AIC</b>	16520.364	14320.936

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
SC	16527.777	14521.088
-2 Log L	16518.364	14266.936

**R-Square** 0.1679 **Max-rescaled R-Square** 0.2268

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
<b>Likelihood Ratio</b>	2251.4277	26	<.0001
<b>Score</b>	2100.8344	26	<.0001
<b>Wald</b>	1780.7766	26	<.0001

Analysis of Maximum Likelihood Estimates					
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
<b>Intercept</b>	1	-1.1299	0.1913	34.8764	<.0001
<b>female</b>	1	-0.00101	0.0451	0.0005	0.9821
<b>gender_other</b>	1	0.5952	0.2646	5.0605	0.0245
<b>AfAmerican</b>	1	-0.0367	0.1017	0.1303	0.7181
<b>Hispanic</b>	1	0.3850	0.0895	18.4933	<.0001
<b>AsAmerican</b>	1	-0.00276	0.1045	0.0007	0.9789
<b>RaceOther</b>	1	0.3016	0.0644	21.9104	<.0001
<b>age</b>	1	-0.00414	0.00309	1.7943	0.1804
<b>LowGPA</b>	1	0.7109	0.0496	205.4481	<.0001
<b>fouryearprivate</b>	1	-0.1734	0.0941	3.3996	0.0652
<b>twoyearpublic</b>	1	-0.0640	0.0773	0.6859	0.4076
<b>Instate_tuition</b>	1	0.0122	0.0698	0.0304	0.8615
<b>FirstGeneration</b>	1	0.1613	0.0431	13.9980	0.0002
<b>International_Citize</b>	1	0.1507	0.1460	1.0656	0.3019



Analysis of Maximum Likelihood Estimates					
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
fulltime	1	0.6165	0.0722	72.8773	<.0001
parttime	1	0.1341	0.0516	6.7407	0.0094
expectedsalary	1	-0.0198	0.0109	3.2937	0.0695
expectedsalary_10yea	1	-0.0754	0.0139	29.2088	<.0001
expenses_studentloan	1	0.1383	0.0221	39.1205	<.0001
expenses_parentincom	1	-0.2200	0.0218	102.2802	<.0001
expenses_parentloans	1	0.0495	0.0300	2.7338	0.0982
expenses_scholarship	1	-0.1816	0.0194	87.2829	<.0001
expenses_moneyfromjo	1	0.1250	0.0238	27.5044	<.0001
expenses_moneyfromsa	1	0.1291	0.0245	27.7327	<.0001
expenses_moneyborrow	1	0.3320	0.0404	67.6649	<.0001
expenses_creditcard	1	0.2615	0.0413	40.0239	<.0001
studentloan_expected	1	0.1229	0.0117	109.5695	<.0001

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
female	0.999	0.914	1.091
gender_other	1.813	1.080	3.046
AfAmerican	0.964	0.790	1.177
Hispanic	1.470	1.233	1.752
AsAmerican	0.997	0.813	1.224
RaceOther	1.352	1.192	1.534
age	0.996	0.990	1.002
LowGPA	2.036	1.847	2.244
fouryearprivate	0.841	0.699	1.011
twoyearpublic	0.938	0.806	1.091
Instate_tuition	1.012	0.883	1.161

<b>Odds Ratio Estimates</b>			
<b>Effect</b>	<b>Point Estimate</b>	<b>95% Wald Confidence Limits</b>	
<b>FirstGeneration</b>	1.175	1.080	1.279
<b>International_Citize</b>	1.163	0.873	1.548
<b>fulltime</b>	1.852	1.608	2.134
<b>parttime</b>	1.144	1.033	1.265
<b>expectedsalary</b>	0.980	0.960	1.002
<b>expectedsalary_10yea</b>	0.927	0.902	0.953
<b>expenses_studentloan</b>	1.148	1.100	1.199
<b>expenses_parentincom</b>	0.803	0.769	0.837
<b>expenses_parentloans</b>	1.051	0.991	1.114
<b>expenses_scholarship</b>	0.834	0.803	0.866
<b>expenses_moneyfromjo</b>	1.133	1.081	1.187
<b>expenses_moneyfromsa</b>	1.138	1.084	1.194
<b>expenses_moneyborrow</b>	1.394	1.288	1.508
<b>expenses_creditcard</b>	1.299	1.198	1.408
<b>studentloan_expected</b>	1.131	1.105	1.157

<b>Association of Predicted Probabilities and Observed Responses</b>			
<b>Percent Concordant</b>	74.4	<b>Somers' D</b>	0.491
<b>Percent Discordant</b>	25.3	<b>Gamma</b>	0.492
<b>Percent Tied</b>	0.2	<b>Tau-a</b>	0.236
<b>Pairs</b>	36098946	<b>c</b>	0.746

## The SAS System

### The LOGISTIC Procedure

#### Model Information

<b>Data Set</b>	NSFWS.NSFWS12
<b>Response Variable</b>	owe_considerstopout Please indicate the best response to the following questions:-Has the amount of money you owe ever caused you to consider taking a break from college/university?
<b>Number of Response Levels</b>	2
<b>Model</b>	binary logit
<b>Optimization Technique</b>	Fisher's scoring

**Number of Observations Read** 13205

**Number of Observations Used** 12085

#### Response Profile

Ordered Value	owe_considerstopout	Total Frequency
1	2	4883
2	1	7202

Probability modeled is owe\_considerstopout=2.

**Note:** 1120 observations were deleted due to missing values for the response or explanatory variables.

#### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

#### Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
<b>AIC</b>	16307.601	13967.574

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
SC	16315.000	14204.365
-2 Log L	16305.601	13903.574

**R-Square** 0.1803 **Max-rescaled R-Square** 0.2434

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
<b>Likelihood Ratio</b>	2402.0263	31	<.0001
<b>Score</b>	2220.6516	31	<.0001
<b>Wald</b>	1856.2469	31	<.0001

Analysis of Maximum Likelihood Estimates					
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
<b>Intercept</b>	1	0.2907	0.2443	1.4155	0.2341
<b>female</b>	1	-0.0158	0.0464	0.1163	0.7330
<b>gender_other</b>	1	0.4658	0.2681	3.0193	0.0823
<b>AfAmerican</b>	1	-0.0762	0.1044	0.5330	0.4654
<b>Hispanic</b>	1	0.3833	0.0910	17.7277	<.0001
<b>AsAmerican</b>	1	0.0184	0.1055	0.0305	0.8613
<b>RaceOther</b>	1	0.2645	0.0655	16.3269	<.0001
<b>age</b>	1	-0.0110	0.00324	11.5402	0.0007
<b>LowGPA</b>	1	0.6789	0.0505	180.8091	<.0001
<b>fouryearprivate</b>	1	-0.2010	0.0955	4.4299	0.0353
<b>twoyearpublic</b>	1	-0.0710	0.0786	0.8157	0.3664
<b>Instate_tuition</b>	1	-0.0402	0.0708	0.3227	0.5700
<b>FirstGeneration</b>	1	0.1129	0.0441	6.5620	0.0104
<b>International_Citize</b>	1	0.1296	0.1482	0.7649	0.3818

Analysis of Maximum Likelihood Estimates					
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
fulltime	1	0.4975	0.0752	43.8293	<.0001
parttime	1	0.0640	0.0541	1.3995	0.2368
expectedsalary	1	-0.0168	0.0111	2.3009	0.1293
expectedsalary_10yea	1	-0.0656	0.0143	21.0742	<.0001
expenses_studentloan	1	0.1204	0.0225	28.5808	<.0001
expenses_parentincom	1	-0.1441	0.0247	33.9186	<.0001
expenses_parentloans	1	0.0608	0.0304	3.9999	0.0455
expenses_scholarship	1	-0.1899	0.0198	91.6124	<.0001
expenses_moneyfromjo	1	0.1187	0.0243	23.8693	<.0001
expenses_moneyfromsa	1	0.1376	0.0252	29.8080	<.0001
expenses_moneyborrow	1	0.3416	0.0412	68.6020	<.0001
expenses_creditcard	1	0.2304	0.0421	29.9880	<.0001
studentloan_expected	1	0.1099	0.0120	84.3718	<.0001
finknowledge_SCORE	1	0.00982	0.0167	0.3475	0.5556
FinancialBehavior	1	0.0255	0.00800	10.1690	0.0014
ParFinSupp	1	-0.0643	0.0143	20.2809	<.0001
managemoneywell	1	-0.2362	0.0356	44.0552	<.0001
financial_socializat	1	-0.0942	0.00927	103.3450	<.0001

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
female	0.984	0.899	1.078
gender_other	1.593	0.942	2.695
AfAmerican	0.927	0.755	1.137
Hispanic	1.467	1.227	1.754
AsAmerican	1.019	0.828	1.253
RaceOther	1.303	1.146	1.481

<b>Odds Ratio Estimates</b>			
<b>Effect</b>	<b>Point Estimate</b>	<b>95% Wald Confidence Limits</b>	
<b>age</b>	0.989	0.983	0.995
<b>LowGPA</b>	1.972	1.786	2.177
<b>fouryearprivate</b>	0.818	0.678	0.986
<b>twoyearpublic</b>	0.931	0.798	1.087
<b>Instate_tuition</b>	0.961	0.836	1.104
<b>FirstGeneration</b>	1.119	1.027	1.220
<b>International_Citize</b>	1.138	0.851	1.522
<b>fulltime</b>	1.645	1.419	1.906
<b>parttime</b>	1.066	0.959	1.185
<b>expectedsalary</b>	0.983	0.962	1.005
<b>expectedsalary_10yea</b>	0.937	0.911	0.963
<b>expenses_studentloan</b>	1.128	1.079	1.179
<b>expenses_parentincom</b>	0.866	0.825	0.909
<b>expenses_parentloans</b>	1.063	1.001	1.128
<b>expenses_scholarship</b>	0.827	0.796	0.860
<b>expenses_moneyfromjo</b>	1.126	1.074	1.181
<b>expenses_moneyfromsa</b>	1.148	1.092	1.206
<b>expenses_moneyborrow</b>	1.407	1.298	1.526
<b>expenses_creditcard</b>	1.259	1.159	1.367
<b>studentloan_expected</b>	1.116	1.090	1.143
<b>finknowledge_SCORE</b>	1.010	0.977	1.043
<b>FinancialBehavior</b>	1.026	1.010	1.042
<b>ParFinSupp</b>	0.938	0.912	0.964
<b>managemoneywell</b>	0.790	0.736	0.847
<b>financial_socializat</b>	0.910	0.894	0.927

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	75.3	Somers' D	0.507
Percent Discordant	24.5	Gamma	0.509
Percent Tied	0.2	Tau-a	0.244
Pairs	35167366	c	0.754

## The SAS System

### The LOGISTIC Procedure

#### Model Information

<b>Data Set</b>	NSFWS.NSFWS12
<b>Response Variable</b>	owe_considerdropout Please indicate the best response to the following questions:-Has the amount of money you owe ever caused you to consider dropping out of college/university?
<b>Number of Response Levels</b>	2
<b>Model</b>	binary logit
<b>Optimization Technique</b>	Fisher's scoring

**Number of Observations Read** 13205

**Number of Observations Used** 12247

#### Response Profile

Ordered Value	owe_considerdropout	Total Frequency
1	2	3363
2	1	8884

Probability modeled is owe\_considerdropout=2.

**Note: 958 observations were deleted due to missing values for the response or explanatory variables.**

#### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

#### Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
<b>AIC</b>	14399.048	13759.464



Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
SC	14406.461	13863.246
-2 Log L	14397.048	13731.464

**R-Square** 0.0529 **Max-rescaled R-Square** 0.0765

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
<b>Likelihood Ratio</b>	665.5839	13	<.0001
<b>Score</b>	688.9667	13	<.0001
<b>Wald</b>	646.7285	13	<.0001

Analysis of Maximum Likelihood Estimates					
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
<b>Intercept</b>	1	-1.9633	0.0974	406.3929	<.0001
<b>female</b>	1	0.0597	0.0450	1.7563	0.1851
<b>gender_other</b>	1	0.4968	0.2548	3.8012	0.0512
<b>AfAmerican</b>	1	-0.0563	0.1012	0.3100	0.5777
<b>Hispanic</b>	1	0.1580	0.0887	3.1740	0.0748
<b>AsAmerican</b>	1	-0.1046	0.1056	0.9807	0.3220
<b>RaceOther</b>	1	0.2336	0.0644	13.1560	0.0003
<b>age</b>	1	0.0273	0.00277	97.2829	<.0001
<b>LowGPA</b>	1	0.9013	0.0474	362.2257	<.0001
<b>fouryearprivate</b>	1	-0.2338	0.0958	5.9483	0.0147
<b>twoyearpublic</b>	1	-0.0231	0.0767	0.0907	0.7632
<b>Instate_tuition</b>	1	-0.1517	0.0692	4.8072	0.0283
<b>FirstGeneration</b>	1	0.4146	0.0432	92.0710	<.0001
<b>International_Citize</b>	1	-0.2041	0.1482	1.8963	0.1685

<b>Odds Ratio Estimates</b>			
<b>Effect</b>	<b>Point Estimate</b>	<b>95% Wald Confidence Limits</b>	
<b>female</b>	1.062	0.972	1.159
<b>gender_other</b>	1.644	0.997	2.708
<b>AfAmerican</b>	0.945	0.775	1.153
<b>Hispanic</b>	1.171	0.984	1.394
<b>AsAmerican</b>	0.901	0.732	1.108
<b>RaceOther</b>	1.263	1.113	1.433
<b>age</b>	1.028	1.022	1.033
<b>LowGPA</b>	2.463	2.244	2.702
<b>fouryearprivate</b>	0.792	0.656	0.955
<b>twoyearpublic</b>	0.977	0.841	1.136
<b>Instate_tuition</b>	0.859	0.750	0.984
<b>FirstGeneration</b>	1.514	1.391	1.647
<b>International_Citize</b>	0.815	0.610	1.090

<b>Association of Predicted Probabilities and Observed Responses</b>			
<b>Percent Concordant</b>	64.8	<b>Somers' D</b>	0.308
<b>Percent Discordant</b>	34.0	<b>Gamma</b>	0.312
<b>Percent Tied</b>	1.2	<b>Tau-a</b>	0.123
<b>Pairs</b>	29876892	<b>c</b>	0.654

## The SAS System

### The LOGISTIC Procedure

#### Model Information

<b>Data Set</b>	NSFWS.NSFWS12
<b>Response Variable</b>	owe_considerdropout Please indicate the best response to the following questions:-Has the amount of money you owe ever caused you to consider dropping out of college/university?
<b>Number of Response Levels</b>	2
<b>Model</b>	binary logit
<b>Optimization Technique</b>	Fisher's scoring

**Number of Observations Read** 13205

**Number of Observations Used** 12247

#### Response Profile

Ordered Value	owe_considerdropout	Total Frequency
1	2	3363
2	1	8884

Probability modeled is owe\_considerdropout=2.

**Note:** 958 observations were deleted due to missing values for the response or explanatory variables.

#### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

#### Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
<b>AIC</b>	14399.048	12693.137

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
SC	14406.461	12893.289
-2 Log L	14397.048	12639.137

**R-Square** 0.1337 **Max-rescaled R-Square** 0.1934

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
<b>Likelihood Ratio</b>	1757.9108	26	<.0001
<b>Score</b>	1702.7619	26	<.0001
<b>Wald</b>	1447.9855	26	<.0001

Analysis of Maximum Likelihood Estimates					
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
<b>Intercept</b>	1	-1.6941	0.1992	72.3012	<.0001
<b>female</b>	1	-0.0624	0.0486	1.6455	0.1996
<b>gender_other</b>	1	0.4580	0.2728	2.8187	0.0932
<b>AfAmerican</b>	1	-0.1117	0.1067	1.0944	0.2955
<b>Hispanic</b>	1	0.3101	0.0945	10.7675	0.0010
<b>AsAmerican</b>	1	0.1451	0.1142	1.6161	0.2036
<b>RaceOther</b>	1	0.3048	0.0681	20.0066	<.0001
<b>age</b>	1	0.00443	0.00319	1.9325	0.1645
<b>LowGPA</b>	1	0.6921	0.0505	188.1536	<.0001
<b>fouryearprivate</b>	1	-0.1770	0.1017	3.0305	0.0817
<b>twoyearpublic</b>	1	0.00843	0.0805	0.0110	0.9166
<b>Instate_tuition</b>	1	-0.0752	0.0745	1.0193	0.3127
<b>FirstGeneration</b>	1	0.2081	0.0462	20.3211	<.0001
<b>International_Citize</b>	1	0.1512	0.1596	0.8970	0.3436

<b>Analysis of Maximum Likelihood Estimates</b>					
<b>Parameter</b>	<b>DF</b>	<b>Estimate</b>	<b>Standard Error</b>	<b>Wald Chi-Square</b>	<b>Pr &gt; ChiSq</b>
<b>fulltime</b>	1	0.3899	0.0753	26.8443	<.0001
<b>parttime</b>	1	-0.0212	0.0569	0.1390	0.7093
<b>expectedsalary</b>	1	0.0101	0.0122	0.6880	0.4069
<b>expectedsalary_10yea</b>	1	-0.1166	0.0152	58.7263	<.0001
<b>expenses_studentloan</b>	1	0.1344	0.0226	35.3813	<.0001
<b>expenses_parentincom</b>	1	-0.1792	0.0243	54.3644	<.0001
<b>expenses_parentloans</b>	1	0.0489	0.0316	2.4003	0.1213
<b>expenses_scholarship</b>	1	-0.1265	0.0208	36.8245	<.0001
<b>expenses_moneyfromjo</b>	1	0.1051	0.0249	17.7547	<.0001
<b>expenses_moneyfromsa</b>	1	0.0872	0.0259	11.3381	0.0008
<b>expenses_moneyborrow</b>	1	0.2996	0.0408	53.8769	<.0001
<b>expenses_creditcard</b>	1	0.1943	0.0402	23.3955	<.0001
<b>studentloan_expected</b>	1	0.1324	0.0119	122.8487	<.0001

<b>Odds Ratio Estimates</b>			
<b>Effect</b>	<b>Point Estimate</b>	<b>95% Wald Confidence Limits</b>	
<b>female</b>	0.940	0.854	1.033
<b>gender_other</b>	1.581	0.926	2.699
<b>AfAmerican</b>	0.894	0.726	1.102
<b>Hispanic</b>	1.364	1.133	1.641
<b>AsAmerican</b>	1.156	0.924	1.446
<b>RaceOther</b>	1.356	1.187	1.550
<b>age</b>	1.004	0.998	1.011
<b>LowGPA</b>	1.998	1.810	2.205
<b>fouryearprivate</b>	0.838	0.686	1.023
<b>twoyearpublic</b>	1.008	0.861	1.181
<b>Instate_tuition</b>	0.928	0.801	1.073

<b>Odds Ratio Estimates</b>			
<b>Effect</b>	<b>Point Estimate</b>	<b>95% Wald Confidence Limits</b>	
<b>FirstGeneration</b>	1.231	1.125	1.348
<b>International_Citize</b>	1.163	0.851	1.590
<b>fulltime</b>	1.477	1.274	1.712
<b>parttime</b>	0.979	0.876	1.094
<b>expectedsalary</b>	1.010	0.986	1.035
<b>expectedsalary_10yea</b>	0.890	0.864	0.917
<b>expenses_studentloan</b>	1.144	1.094	1.196
<b>expenses_parentincom</b>	0.836	0.797	0.877
<b>expenses_parentloans</b>	1.050	0.987	1.117
<b>expenses_scholarship</b>	0.881	0.846	0.918
<b>expenses_moneyfromjo</b>	1.111	1.058	1.166
<b>expenses_moneyfromsa</b>	1.091	1.037	1.148
<b>expenses_moneyborrow</b>	1.349	1.246	1.462
<b>expenses_creditcard</b>	1.214	1.123	1.314
<b>studentloan_expected</b>	1.142	1.115	1.169

**Association of Predicted Probabilities and Observed Responses**

<b>Percent Concordant</b>	73.7	<b>Somers' D</b>	0.477
<b>Percent Discordant</b>	26.0	<b>Gamma</b>	0.479
<b>Percent Tied</b>	0.3	<b>Tau-a</b>	0.190
<b>Pairs</b>	29876892	<b>c</b>	0.739

## The SAS System

### The LOGISTIC Procedure

#### Model Information

<b>Data Set</b>	NSFWS.NSFWS12	
<b>Response Variable</b>	owe_considerdropout	Please indicate the best response to the following questions:-Has the amount of money you owe ever caused you to consider dropping out of college/university?
<b>Number of Response Levels</b>	2	
<b>Model</b>	binary logit	
<b>Optimization Technique</b>	Fisher's scoring	

**Number of Observations Read** 13205

**Number of Observations Used** 12085

#### Response Profile

<b>Ordered Value</b>	<b>owe_considerdropout</b>	<b>Total Frequency</b>
1	2	3324
2	1	8761

Probability modeled is owe\_considerdropout=2.

**Note:** 1120 observations were deleted due to missing values for the response or explanatory variables.

#### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

#### Model Fit Statistics

<b>Criterion</b>	<b>Intercept Only</b>	<b>Intercept and Covariates</b>
<b>AIC</b>	14219.251	12364.367

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
SC	14226.651	12601.158
-2 Log L	14217.251	12300.367

**R-Square** 0.1467 **Max-rescaled R-Square** 0.2121

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
<b>Likelihood Ratio</b>	1916.8841	31	<.0001
<b>Score</b>	1838.3389	31	<.0001
<b>Wald</b>	1541.6840	31	<.0001

Analysis of Maximum Likelihood Estimates					
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
<b>Intercept</b>	1	-0.0296	0.2554	0.0135	0.9077
<b>female</b>	1	-0.1016	0.0500	4.1232	0.0423
<b>gender_other</b>	1	0.3006	0.2787	1.1634	0.2808
<b>AfAmerican</b>	1	-0.1620	0.1093	2.1969	0.1383
<b>Hispanic</b>	1	0.2852	0.0962	8.7839	0.0030
<b>AsAmerican</b>	1	0.1472	0.1151	1.6335	0.2012
<b>RaceOther</b>	1	0.2713	0.0692	15.3748	<.0001
<b>age</b>	1	-0.00019	0.00335	0.0034	0.9538
<b>LowGPA</b>	1	0.6494	0.0514	159.6769	<.0001
<b>fouryearprivate</b>	1	-0.1976	0.1032	3.6677	0.0555
<b>twoyearpublic</b>	1	-0.0157	0.0819	0.0367	0.8481
<b>Instate_tuition</b>	1	-0.1170	0.0757	2.3876	0.1223
<b>FirstGeneration</b>	1	0.1589	0.0472	11.3521	0.0008
<b>International_Citize</b>	1	0.0921	0.1619	0.3239	0.5693



Analysis of Maximum Likelihood Estimates					
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
fulltime	1	0.3266	0.0785	17.3041	<.0001
parttime	1	-0.0508	0.0596	0.7279	0.3936
expectedsalary	1	0.0173	0.0124	1.9335	0.1644
expectedsalary_10yea	1	-0.1096	0.0156	49.3322	<.0001
expenses_studentloan	1	0.1188	0.0231	26.5686	<.0001
expenses_parentincom	1	-0.1352	0.0276	23.9768	<.0001
expenses_parentloans	1	0.0467	0.0320	2.1307	0.1444
expenses_scholarship	1	-0.1368	0.0213	41.2938	<.0001
expenses_moneyfromjo	1	0.1062	0.0254	17.4292	<.0001
expenses_moneyfromsa	1	0.1069	0.0266	16.1376	<.0001
expenses_moneyborrow	1	0.2964	0.0416	50.7736	<.0001
expenses_creditcard	1	0.1554	0.0409	14.4441	0.0001
studentloan_expected	1	0.1210	0.0122	98.7474	<.0001
finknowledge_SCORE	1	-0.0317	0.0179	3.1533	0.0758
FinancialBehavior	1	0.0170	0.00862	3.9020	0.0482
ParFinSupp	1	-0.0243	0.0158	2.3828	0.1227
managemoneywell	1	-0.2478	0.0379	42.7240	<.0001
financial_socializat	1	-0.0987	0.00976	102.2959	<.0001

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
female	0.903	0.819	0.996
gender_other	1.351	0.782	2.332
AfAmerican	0.850	0.686	1.054
Hispanic	1.330	1.101	1.606
AsAmerican	1.159	0.924	1.452
RaceOther	1.312	1.145	1.502

<b>Odds Ratio Estimates</b>			
<b>Effect</b>	<b>Point Estimate</b>	<b>95% Wald Confidence Limits</b>	
<b>age</b>	1.000	0.993	1.006
<b>LowGPA</b>	1.914	1.731	2.117
<b>fouryearprivate</b>	0.821	0.670	1.005
<b>twoyearpublic</b>	0.984	0.838	1.156
<b>Instate_tuition</b>	0.890	0.767	1.032
<b>FirstGeneration</b>	1.172	1.069	1.286
<b>International_Citize</b>	1.096	0.798	1.506
<b>fulltime</b>	1.386	1.189	1.617
<b>parttime</b>	0.950	0.846	1.068
<b>expectedsalary</b>	1.017	0.993	1.042
<b>expectedsalary_10yea</b>	0.896	0.869	0.924
<b>expenses_studentloan</b>	1.126	1.076	1.178
<b>expenses_parentincom</b>	0.874	0.828	0.922
<b>expenses_parentloans</b>	1.048	0.984	1.116
<b>expenses_scholarship</b>	0.872	0.837	0.909
<b>expenses_moneyfromjo</b>	1.112	1.058	1.169
<b>expenses_moneyfromsa</b>	1.113	1.056	1.172
<b>expenses_moneyborrow</b>	1.345	1.240	1.459
<b>expenses_creditcard</b>	1.168	1.078	1.266
<b>studentloan_expected</b>	1.129	1.102	1.156
<b>finknowledge_SCORE</b>	0.969	0.935	1.003
<b>FinancialBehavior</b>	1.017	1.000	1.034
<b>ParFinSupp</b>	0.976	0.946	1.007
<b>managemoneywell</b>	0.781	0.725	0.841
<b>financial_socializat</b>	0.906	0.889	0.924

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	74.8	Somers' D	0.498
Percent Discordant	25.0	Gamma	0.500
Percent Tied	0.3	Tau-a	0.199
Pairs	29121564	c	0.749

The SAS System

The FREQ Procedure

<b>male</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Frequency</b>	<b>Cumulative Percent</b>
<b>0</b>	9203	69.69	9203	69.69
<b>1</b>	4002	30.31	13205	100.00

<b>female</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Frequency</b>	<b>Cumulative Percent</b>
<b>0</b>	4883	36.98	4883	36.98
<b>1</b>	8322	63.02	13205	100.00

<b>gender_other</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Frequency</b>	<b>Cumulative Percent</b>
<b>0</b>	13126	99.40	13126	99.40
<b>1</b>	79	0.60	13205	100.00

<b>white</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Frequency</b>	<b>Cumulative Percent</b>
<b>0</b>	4107	31.10	4107	31.10
<b>1</b>	9098	68.90	13205	100.00

<b>AfAmerican</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Frequency</b>	<b>Cumulative Percent</b>
<b>0</b>	12654	95.83	12654	95.83
<b>1</b>	551	4.17	13205	100.00

<b>Hispanic</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Frequency</b>	<b>Cumulative Percent</b>
<b>0</b>	12503	94.68	12503	94.68
<b>1</b>	702	5.32	13205	100.00

<b>AsAmerican</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Frequency</b>	<b>Cumulative Percent</b>
<b>0</b>	12527	94.87	12527	94.87
<b>1</b>	678	5.13	13205	100.00

<b>RaceOther</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Frequency</b>	<b>Cumulative Percent</b>
<b>0</b>	11771	89.14	11771	89.14
<b>1</b>	1434	10.86	13205	100.00

<b>RECODE age categories</b>				
<b>age_category</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Frequency</b>	<b>Cumulative Percent</b>
<b>1</b>	8848	72.25	8848	72.25
<b>2</b>	1678	13.70	10526	85.95
<b>3</b>	1017	8.30	11543	94.25
<b>4</b>	477	3.89	12020	98.15
<b>5</b>	199	1.62	12219	99.77
<b>6</b>	28	0.23	12247	100.00

Frequency Missing = 958

<b>LowGPA</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Frequency</b>	<b>Cumulative Percent</b>
<b>0</b>	10560	79.97	10560	79.97
<b>1</b>	2645	20.03	13205	100.00

<b>fouryearpublic</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Frequency</b>	<b>Cumulative Percent</b>
<b>0</b>	2325	17.61	2325	17.61
<b>1</b>	10880	82.39	13205	100.00

<b>fouryearprivate</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Frequency</b>	<b>Cumulative Percent</b>
<b>0</b>	11971	90.66	11971	90.66

<b>fouryearprivate</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Frequency</b>	<b>Cumulative Percent</b>
<b>1</b>	1234	9.34	13205	100.00

<b>twoyearpublic</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Frequency</b>	<b>Cumulative Percent</b>
<b>0</b>	12114	91.74	12114	91.74
<b>1</b>	1091	8.26	13205	100.00

<b>Instate_tuition</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Frequency</b>	<b>Cumulative Percent</b>
<b>0</b>	3292	24.93	3292	24.93
<b>1</b>	9913	75.07	13205	100.00

<b>FirstGeneration</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Frequency</b>	<b>Cumulative Percent</b>
<b>0</b>	7875	59.64	7875	59.64
<b>1</b>	5330	40.36	13205	100.00

<b>International_Citizen</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Frequency</b>	<b>Cumulative Percent</b>
<b>0</b>	12859	97.38	12859	97.38
<b>1</b>	346	2.62	13205	100.00

<b>fulltime</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Frequency</b>	<b>Cumulative Percent</b>
<b>0</b>	11111	84.14	11111	84.14
<b>1</b>	2094	15.86	13205	100.00

<b>parttime</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Frequency</b>	<b>Cumulative Percent</b>
<b>0</b>	6414	48.57	6414	48.57
<b>1</b>	6791	51.43	13205	100.00

The SAS System

The CORR Procedure

**5 Variables:** havebudget trackspending trackchecks paybills addsavings

Simple Statistics							
Variable	N	Mean	Std Dev	Sum	Minimum	Maximum	Label
havebudget	1320 5	2.6068 9	0.9546 8	3442 4	1.00000	4.00000	Please answer the following:-I have a weekly or monthly budget that I follow.
trackspending	1320 5	2.9355 5	0.9196 8	3876 4	1.00000	4.00000	Please answer the following:-I track my spending in order to stay within my budget.
trackchecks	1320 5	3.1207 1	0.9522 7	4120 9	1.00000	4.00000	Please answer the following:-I track all debit card transactions/checks to balance my account.
paybills	1320 5	3.6237 8	0.6860 7	4785 2	1.00000	4.00000	Please answer the following:-I pay my bills on time every month.
addsavings	1320 5	2.3878 8	1.0361 3	3153 2	1.00000	4.00000	Please answer the following:-I add to my savings on a regular basis.

**Cronbach Coefficient Alpha**

Variables	Alpha
Raw	0.637484
Standardized	0.639371

<b>Cronbach Coefficient Alpha with Deleted Variable</b>					
<b>Deleted Variable</b>	<b>Raw Variables</b>		<b>Standardized Variables</b>		<b>Label</b>
	<b>Correlation with Total</b>	<b>Alpha</b>	<b>Correlation with Total</b>	<b>Alpha</b>	
<b>havebudget</b>	0.463839	0.546102	0.455146	0.555023	Please answer the following:-I have a weekly or monthly budget that I follow.
<b>trackspending</b>	0.584305	0.483274	0.572633	0.493369	Please answer the following:-I track my spending in order to stay within my budget.
<b>trackchecks</b>	0.473203	0.541162	0.473135	0.545861	Please answer the following:-I track all debit card transactions/checks to balance my account.
<b>paybills</b>	0.269971	0.634233	0.264854	0.646027	Please answer the following:-I pay my bills on time every month.
<b>addsavings</b>	0.206524	0.683250	0.223797	0.664292	Please answer the following:-I add to my savings on a regular basis.

<b>Pearson Correlation Coefficients, N = 13205</b>						
<b>Prob &gt;  r  under H0: Rho=0</b>						
	<b>havebudget</b>	<b>trackspending</b>	<b>trackchecks</b>	<b>paybills</b>	<b>addsavings</b>	
<b>havebudget</b>	1.00000	0.61281	0.37443	0.10187	0.10233	
Please answer the following:-I have a weekly or monthly budget that I follow.		<.0001	<.0001	<.0001	<.0001	
<b>trackspending</b>	0.61281	1.00000	0.53959	0.16574	0.12479	
Please answer the following:-I track my spending in order to stay within my budget.	<.0001		<.0001	<.0001	<.0001	
<b>trackchecks</b>	0.37443	0.53959	1.00000	0.19135	0.12594	



<b>Pearson Correlation Coefficients, N = 13205</b> <b>Prob &gt;  r  under H0: Rho=0</b>					
	<b>havebudget</b>	<b>trackspending</b>	<b>trackchecks</b>	<b>paybills</b>	<b>addsavings</b>
Please answer the following:-I track all debit card transactions/checks to balance my account.	<.0001	<.0001		<.0001	<.0001
<b>paybills</b>	0.10187	0.16574	0.19135	1.00000	0.27882
Please answer the following:-I pay my bills on time every month.	<.0001	<.0001	<.0001		<.0001
<b>addsavings</b>	0.10233	0.12479	0.12594	0.27882	1.00000
Please answer the following:-I add to my savings on a regular basis.	<.0001	<.0001	<.0001	<.0001	

The SAS System

The CORR Procedure

**3 Variables:** parents\_comfortable parents\_moneymangement parents\_rolemodel

Simple Statistics							
Variable	N	Mean	Std Dev	Sum	Minimum	Maximum	Label
parents_comfortable	1320	3.0894	0.8786	4079	1.00000	4.00000	Please indicate the extent to which you agree or disagree with the statements below about your e...-My parents or guardians were comfortable talking about money with me.
	5	4	3	6			
parents_moneymangement	1320	2.8784	0.9124	3801	1.00000	4.00000	Please indicate the extent to which you agree or disagree with the statements below about your e...-My parents or guardians told me what I needed to
	5	6	0	0			

Simple Statistics							
Variable	N	Mean	Std Dev	Sum	Minimum	Maximum	Label
							know about money management.
parents_rolemodel	13205	2.89693	0.99471	38254	1.00000	4.00000	Please indicate the extent to which you agree or disagree with the statements below about your e...-My parents or guardians were role models of sound financial management.

Cronbach Coefficient Alpha	
Variables	Alpha
Raw	0.845905
Standardized	0.848194

Cronbach Coefficient Alpha with Deleted Variable					
Deleted Variable	Raw Variables		Standardized Variables		Label
	Correlation with Total	Alpha	Correlation with Total	Alpha	
parents_comfortable	0.691193	0.806826	0.694864	0.808621	Please indicate the

Cronbach Coefficient Alpha with Deleted Variable					
Deleted Variable	Raw Variables		Standardized Variables		Label
	Correlation with Total	Alpha	Correlation with Total	Alpha	
					extent to which you agree or disagree with the statements below about your e...-My parents or guardians were comfortable talking about money with me.
parents_moneymanagement	0.785366	0.715503	0.786953	0.719035	Please indicate the extent to which you agree or disagree with the statements below about your e...-My parents or guardians told me what I needed to know about money management .
parents_rolemodel	0.671346	0.831362	0.670170	0.831707	Please indicate the extent to which you

Cronbach Coefficient Alpha with Deleted Variable				
Deleted Variable	Raw Variables		Standardized Variables	
	Correlation with Total	Alpha	Correlation with Total	Alpha
				agree or disagree with the statements below about your e...-My parents or guardians were role models of sound financial management .

Pearson Correlation Coefficients, N = 13205 Prob >  r  under H0: Rho=0			
	parents_comfortable	parents_moneymanagement	parents_rolemodel
<b>parents_comfortable</b>	1.00000	0.71190	0.56132
Please indicate the extent to which you agree or disagree with the statements below about your e...-My parents or guardians were comfortable talking about money with me.		<.0001	<.0001
<b>parents_moneymanagement</b>	0.71190	1.00000	0.67873
Please indicate the extent to which you agree or disagree with the statements below about	<.0001		<.0001

**Pearson Correlation Coefficients, N = 13205**  
**Prob > |r| under H0: Rho=0**

	<b>parents_comfortable</b>	<b>parents_moneymanagement</b>	<b>parents_rolemodel</b>
your e...-My parents or guardians told me what I needed to know about money management.			
<b>parents_rolemodel</b>	0.56132	0.67873	1.00000
Please indicate the extent to which you agree or disagree with the statements below about your e...-My parents or guardians were role models of sound financial management.	<.0001	<.0001	

The SAS System

The CORR Procedure

**6** stress\_general stress\_monthlyexpenses stress\_payschool optimisticfuturerv  
**Variables:** supportselfrv collegegoodinvestmentrv

Simple Statistics

Variable	N	Mean	Std Dev	Sum	Minimum	Maximum	Label
stress_general	1320 5	2.9547 1	0.8782 7	3901 7	1.00000	4.00000	Please indicate to what extent you agree or disagree with the following statements. -I feel stressed about my personal finances in general.
stress_monthlyexpenses	1320 5	2.5691 8	0.9455 0	3392 6	1.00000	4.00000	Please indicate to what extent you agree or disagree with the following statements. -I worry about being able to pay my current monthly expenses.
stress_payschool	1320 5	2.7427 5	1.0024 6	3621 8	1.00000	4.00000	Please indicate to what

Simple Statistics						
Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
						extent you agree or disagree with the following statements. -I worry about having enough money to pay for school.
optimisticfuturerv	13205	2.24105	0.77827	29593	1.00000	4.00000
supportselfrv	13205	2.06210	0.71090	27230	1.00000	4.00000
collegegoodinvestmentrv	13205	2.00947	0.79245	26535	1.00000	4.00000

Cronbach Coefficient Alpha	
Variables	Alpha
Raw	0.774307
Standardized	0.771482

Cronbach Coefficient Alpha with Deleted Variable					
Deleted Variable	Raw Variables		Standardized Variables		Label
	Correlation with Total	Alpha	Correlation with Total	Alpha	
stress_general	0.668746	0.700685	0.636599	0.705904	Please indicate to what extent you agree or disagree with the following statements.-I feel stressed



Cronbach Coefficient Alpha with Deleted Variable					
Deleted Variable	Raw Variables		Standardized Variables		Label
	Correlation with Total	Alpha	Correlation with Total	Alpha	
					about my personal finances in general.
stress_monthlyexpenses	0.613725	0.714790	0.586644	0.719253	Please indicate to what extent you agree or disagree with the following statements.-I worry about being able to pay my current monthly expenses.
stress_payschool	0.584607	0.724029	0.564127	0.725171	Please indicate to what extent you agree or disagree with the following statements.-I worry about having enough money to pay for school.
optimisticfuturerv	0.520705	0.741281	0.540685	0.731266	
supportselfrv	0.439605	0.759673	0.457812	0.752288	
collegegoodinvestmentrv	0.305820	0.788853	0.323497	0.784658	

Pearson Correlation Coefficients, N = 13205						
Prob >  r  under H0: Rho=0						
	stress_g eneral	stress_monthl yexpenses	stress_pa yschool	optimisticf uturerv	support selfrv	collegegoodin vestmentrv
stress_genera l	1.0000 0	0.72309	0.62289	0.36942	0.2684 5	0.17374
		<.0001	<.0001	<.0001		<.0001

Pearson Correlation Coefficients, N = 13205 Prob >  r  under H0: Rho=0						
	stress_g eneral	stress_monthl yexpenses	stress_pa yschool	optimisticf uturerv	support selfrv	collegegoodin vestmentrv
Please indicate to what extent you agree or disagree with the following statements.-I feel stressed about my personal finances in general.					<.0001	
<b>stress_month lyexpenses</b>	0.7230 9	1.00000	0.59316 <.0001	0.31651 <.0001	0.2318 0	0.14857 <.0001
Please indicate to what extent you agree or disagree with the following statements.-I worry about being able to pay my current monthly expenses.	<.0001				<.0001	
<b>stress_paysch ool</b>	0.6228 9	0.59316 <.0001	1.00000	0.32197 <.0001	0.2391 0	0.16962 <.0001
Please indicate to what extent you agree or disagree with the following statements.-I worry about	<.0001				<.0001	

Pearson Correlation Coefficients, N = 13205 Prob >  r  under H0: Rho=0						
	stress_g eneral	stress_monthl yexpenses	stress_pa yschool	optimisticf uturerv	support selfrv	collegegoodin vestmentrv
having enough money to pay for school.						
<b>optimisticfut urerv</b>	0.3694 2 <.0001	0.31651 <.0001	0.32197 <.0001	1.00000	0.5291 0 <.0001	0.33977 <.0001
<b>supportselfrv</b>	0.2684 5 <.0001	0.23180 <.0001	0.23910 <.0001	0.52910 <.0001	1.0000 0	0.35386 <.0001
<b>collegegoodin vestmentrv</b>	0.1737 4 <.0001	0.14857 <.0001	0.16962 <.0001	0.33977 <.0001	0.3538 6 <.0001	1.00000

The SAS System

The REG Procedure

Model: MODEL1

Dependent Variable: Financial\_Stress

<b>Number of Observations Read</b>	13205
<b>Number of Observations Used</b>	12085
<b>Number of Observations with Missing Values</b>	1120

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
<b>Model</b>	29	37507	1293.35720	136.13	<.0001
<b>Error</b>	12055	114534	9.50096		
<b>Corrected Total</b>	12084	152041			

<b>Root MSE</b>	3.08236	<b>R-Square</b>	0.2467
<b>Dependent Mean</b>	14.55134	<b>Adj R-Sq</b>	0.2449
<b>Coeff Var</b>	21.18266		

**Parameter Estimates**

Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
<b>Intercept</b>	Intercept	1	16.67681	0.30509	54.66	<.0001	.	0
<b>female</b>		1	0.80849	0.06309	12.82	<.0001	0.88790	1.12625
<b>gender_other</b>		1	1.77329	0.37009	4.79	<.0001	0.98275	1.01755
<b>AfAmerican</b>		1	-0.22921	0.14361	-1.60	0.1105	0.93088	1.07425
<b>Hispanic</b>		1	0.45799	0.12637	3.62	0.0003	0.92206	1.08452

Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
AsAmerican		1	0.55849	0.13726	4.07	<.0001	0.83202	1.20189
RaceOther		1	0.56672	0.09021	6.28	<.0001	0.95818	1.04365
age	Age	1	-0.05271	0.00448	-11.75	<.0001	0.72055	1.38782
LowGPA		1	0.64530	0.07073	9.12	<.0001	0.93251	1.07238
fouryearprivate		1	0.05465	0.12786	0.43	0.6691	0.57516	1.73866
twoyearpublic		1	0.41903	0.10936	3.83	0.0001	0.88384	1.13143
Instate_tuition		1	0.07400	0.09502	0.78	0.4361	0.53919	1.85464
FirstGeneration		1	0.36590	0.06088	6.01	<.0001	0.86633	1.15429
International_Citizen		1	0.34049	0.19332	1.76	0.0782	0.80624	1.24033
fulltime		1	0.02660	0.10433	0.25	0.7988	0.51968	1.92425
parttime		1	0.01556	0.07251	0.21	0.8301	0.60243	1.65993
expectedsalary	What do you expect your starting annual salary to be when you enter the workforce after completin...	1	-0.12680	0.01477	-8.58	<.0001	0.86195	1.16016
expectedsalary_10years	What do you expect your	1	-0.23483	0.01921	-12.23	<.0001	0.81751	1.22322

Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
	annual salary to be 10 years after entering the workforce?							
<b>expenses_studentloans</b>	Please indicate how much of your colle ge/ university expenses are paid for by the following sou...- Student loans I have taken out for myself	<b>1</b>	0.24395	0.0318 9	7.65	<.00 01	0.44329	2.2558 4
<b>expenses_parentincome</b>	Please indicate how much of your colle ge/ university expenses are paid for by the following sou...- Parents or other family members from their current income or past savings	<b>1</b>	- 0.12305	0.0325 2	-3.78	0.00 02	0.46253	2.1620 1
<b>expenses_parentloans</b>	Please indicate how	<b>1</b>	0.21404	0.0419 7	5.10	<.00 01	0.85840	1.1649 6

Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
	much of your colle ge/ university expenses are paid for by the following sou...- Parents or other family members from loans taken out to assist me							
<b>expenses_scholarships grants</b>	Please indicate how much of your colle ge/ university expenses are paid for by the following sou...- Scholarships or grants that don't need to be repaid	<b>1</b>	- 0.24892	0.0268 4	-9.28	<.00 01	0.74857	1.3358 8
<b>expenses_moneyfromj ob</b>	Please indicate how much of your colle ge/ university expenses are paid for by the following sou...-Money	<b>1</b>	0.14443	0.0339 8	4.25	<.00 01	0.62991	1.5875 2

Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
<b>expenses_moneyfromsavings</b>	from my current job Please indicate how much of your college/university expenses are paid for by the following sou...-Money from my savings	1	0.11770	0.03488	3.37	0.0007	0.75518	1.32418
<b>expenses_moneyborrowed</b>	Please indicate how much of your college/university expenses are paid for by the following sou...-Money borrowed from family or friends	1	0.50446	0.05642	8.94	<.0001	0.86800	1.15207
<b>expenses_creditcard</b>	Please indicate how much of your college/university expenses are paid for by the following sou...-Credit cards	1	0.18454	0.05594	3.30	0.0010	0.85803	1.16547



Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
<b>studentloan_expected amount</b>	How much student loan debt do you EXPECT to have accumulated when you complete your current degree?	<b>1</b>	0.34646	0.01690	20.50	<.0001	0.44052	2.27005
<b>finknowledge_SCORE E</b>	RECODE-SCORE_Nu mber correct out of the 5 financial knowledge questions	<b>1</b>	-0.13242	0.02256	-5.87	<.0001	0.89275	1.12014
<b>FinancialBehavior</b>		<b>1</b>	-0.08852	0.00986	-8.98	<.0001	0.94303	1.06042
<b>ParFinSupp</b>		<b>1</b>	-0.07801	0.01871	-4.17	<.0001	0.47100	2.12313

The SAS System

The REG Procedure

Model: MODEL1

Dependent Variable: Financial\_Stress

<b>Number of Observations Read</b>	13205
<b>Number of Observations Used</b>	12085
<b>Number of Observations with Missing Values</b>	1120

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
<b>Model</b>	30	43909	1463.63910	163.16	<.0001
<b>Error</b>	12054	108132	8.97065		
<b>Corrected Total</b>	12084	152041			

<b>Root MSE</b>	2.99510	<b>R-Square</b>	0.2888
<b>Dependent Mean</b>	14.55134	<b>Adj R-Sq</b>	0.2870
<b>Coeff Var</b>	20.58301		

**Parameter Estimates**

Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
<b>Intercept</b>	Intercept	1	19.01460	0.30910	61.52	<.0001	.	0
<b>female</b>		1	0.71633	0.06140	11.67	<.0001	0.88510	1.12982
<b>gender_other</b>		1	1.56031	0.35971	4.34	<.0001	0.98227	1.01805
<b>AfAmerican</b>		1	-0.26551	0.13955	-1.90	0.0571	0.93080	1.07435
<b>Hispanic</b>		1	0.35700	0.12285	2.91	0.0037	0.92119	1.08555

Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
AsAmerican		1	0.46643	0.13342	3.50	0.0005	0.83147	1.20269
RaceOther		1	0.48785	0.08770	5.56	<.0001	0.95709	1.04483
age	Age	1	-0.05488	0.00436	-12.59	<.0001	0.72030	1.38830
LowGPA		1	0.51390	0.06890	7.46	<.0001	0.92776	1.07787
fouryearprivate		1	0.01600	0.12425	0.13	0.8975	0.57508	1.73890
twoyearpublic		1	0.40156	0.10626	3.78	0.0002	0.88380	1.13147
Instate_tuition		1	0.04524	0.09234	0.49	0.6242	0.53912	1.85489
FirstGeneration		1	0.38249	0.05916	6.47	<.0001	0.86623	1.15442
International_Citizen		1	0.29969	0.18786	1.60	0.1107	0.80618	1.24041
fulltime		1	-0.08296	0.10146	-0.82	0.4135	0.51883	1.92740
parttime		1	-0.06062	0.07052	-0.86	0.3900	0.60145	1.66265
expectedsalary	What do you expect your starting annual salary to be when you enter the workforce after completin...	1	-0.11894	0.01436	-8.28	<.0001	0.86159	1.16064
expectedsalary_10years	What do you expect your	1	-0.21770	0.01868	-11.66	<.0001	0.81655	1.22466

Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
	annual salary to be 10 years after entering the workforce?							
<b>expenses_studentloans</b>	Please indicate how much of your colle ge/ university expenses are paid for by the following sou...- Student loans I have taken out for myself	<b>1</b>	0.22372	0.0309 9	7.22	<.00 01	0.44303	2.2571 9
<b>expenses_parentincome</b>	Please indicate how much of your colle ge/ university expenses are paid for by the following sou...- Parents or other family members from their current income or past savings	<b>1</b>	- 0.13441	0.0316 0	-4.25	<.00 01	0.46245	2.1624 0
<b>expenses_parentloans</b>	Please indicate how	<b>1</b>	0.19268	0.0407 9	4.72	<.00 01	0.85807	1.1654 1

Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
	much of your colle ge/ university expenses are paid for by the following sou...- Parents or other family members from loans taken out to assist me							
<b>expenses_scholarships grants</b>	Please indicate how much of your colle ge/ university expenses are paid for by the following sou...- Scholarships or grants that don't need to be repaid	<b>1</b>	- 0.23499	0.0260 8	-9.01	<.00 01	0.74827	1.3364 1
<b>expenses_moneyfromj ob</b>	Please indicate how much of your colle ge/ university expenses are paid for by the following sou...-Money	<b>1</b>	0.14707	0.0330 2	4.45	<.00 01	0.62991	1.5875 3

Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
	from my current job							
<b>expenses_moneyfromsavings</b>	Please indicate how much of your college/university expenses are paid for by the following sou...-Money from my savings	1	0.15336	0.03392	4.52	<.0001	0.75401	1.32624
<b>expenses_moneyborrowed</b>	Please indicate how much of your college/university expenses are paid for by the following sou...-Money borrowed from family or friends	1	0.46896	0.05484	8.55	<.0001	0.86749	1.15275
<b>expenses_creditcard</b>	Please indicate how much of your college/university expenses are paid for by the following sou...-Credit cards	1	0.13957	0.05438	2.57	0.0103	0.85720	1.16658

Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
<b>studentloan_expected amount</b>	How much student loan debt do you EXPECT to have accumulated when you complete your current degree?	<b>1</b>	0.32534	0.01644	19.79	<.0001	0.43950	2.27531
<b>finknowledge_SCORE E</b>	RECODE-SCORE_Number correct out of the 5 financial knowledge questions	<b>1</b>	-0.11818	0.02193	-5.39	<.0001	0.89222	1.12080
<b>FinancialBehavior</b>		<b>1</b>	0.02294	0.01045	2.20	0.0282	0.79270	1.26151
<b>ParFinSupp</b>		<b>1</b>	-0.08530	0.01818	-4.69	<.0001	0.47090	2.12361
<b>managemoneywell</b>	Please indicate the extent to which you agree or disagree with the following statements: - I manage my money well.	<b>1</b>	-1.24312	0.04653	-26.71	<.0001	0.79252	1.26180

The SAS System

The REG Procedure

Model: MODEL1

Dependent Variable: Financial\_Stress

<b>Number of Observations Read</b>	13205
<b>Number of Observations Used</b>	12085
<b>Number of Observations with Missing Values</b>	1120

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
<b>Model</b>	30	41085	1369.49655	148.78	<.0001
<b>Error</b>	12054	110956	9.20495		
<b>Corrected Total</b>	12084	152041			

<b>Root MSE</b>	3.03397	<b>R-Square</b>	0.2702
<b>Dependent Mean</b>	14.55134	<b>Adj R-Sq</b>	0.2684
<b>Coeff Var</b>	20.85008		

**Parameter Estimates**

Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
<b>Intercept</b>	Intercept	1	18.71792	0.31764	58.93	<.0001	.	0
<b>female</b>		1	0.77333	0.06212	12.45	<.0001	0.88717	1.12718
<b>gender_other</b>		1	1.60113	0.36439	4.39	<.0001	0.98219	1.01813
<b>AfAmerican</b>		1	-0.26138	0.14136	-1.85	0.0645	0.93076	1.07439
<b>Hispanic</b>		1	0.43556	0.12439	3.50	0.0005	0.92199	1.08461



Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
AsAmerican		1	0.49793	0.13514	3.68	0.0002	0.83159	1.20251
RaceOther		1	0.48443	0.08889	5.45	<.0001	0.95607	1.04595
age	Age	1	-0.06446	0.00445	-14.47	<.0001	0.70765	1.41312
LowGPA		1	0.60148	0.06965	8.64	<.0001	0.93156	1.07347
fouryearprivate		1	0.01385	0.12587	0.11	0.9124	0.57500	1.73913
twoyearpublic		1	0.39343	0.10765	3.65	0.0003	0.88371	1.13160
Instate_tuition		1	0.00058628	0.09360	0.01	0.9950	0.53834	1.85758
FirstGeneration		1	0.24075	0.06026	4.00	<.0001	0.85671	1.16725
International_Citizen		1	0.19652	0.19043	1.03	0.3021	0.80505	1.24216
fulltime		1	-0.02618	0.10272	-0.25	0.7988	0.51933	1.92556
parttime		1	0.03930	0.07138	0.55	0.5820	0.60226	1.66040
expectedsalary	What do you expect your starting annual salary to be when you enter the workforce after completin...	1	-0.11792	0.01455	-8.10	<.0001	0.86113	1.16127
expectedsalary_10years	What do you expect your	1	-0.22657	0.01891	-11.98	<.0001	0.81711	1.22382

Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
	annual salary to be 10 years after entering the workforce?							
<b>expenses_studentloans</b>	Please indicate how much of your colle ge/ university expenses are paid for by the following sou...- Student loans I have taken out for myself	<b>1</b>	0.22791	0.0314 0	7.26	<.00 01	0.44300	2.2573 6
<b>expenses_parentincome</b>	Please indicate how much of your colle ge/ university expenses are paid for by the following sou...- Parents or other family members from their current income or past savings	<b>1</b>	-0.04993	0.0322 2	-1.55	0.12 12	0.45640	2.1910 5

Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
<b>expenses_parentloans</b>	Please indicate how much of your college/university expenses are paid for by the following sou...- Parents or other family members from loans taken out to assist me	<b>1</b>	0.22364	0.04132	5.41	<.0001	0.85828	1.16512
<b>expenses_scholarships grants</b>	Please indicate how much of your college/university expenses are paid for by the following sou...- Scholarships or grants that don't need to be repaid	<b>1</b>	-0.23789	0.02642	-9.00	<.0001	0.74823	1.33648
<b>expenses_moneyfromjob</b>	Please indicate how much of your college/university expenses are	<b>1</b>	0.14526	0.03345	4.34	<.0001	0.62991	1.58752

Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
	paid for by the following sou...-Money from my current job							
<b>expenses_moneyfrom savings</b>	Please indicate how much of your college/university expenses are paid for by the following sou...-Money from my savings	<b>1</b>	0.15134	0.03438	4.40	<.0001	0.75332	1.32745
<b>expenses_moneyborrowed</b>	Please indicate how much of your college/university expenses are paid for by the following sou...-Money borrowed from family or friends	<b>1</b>	0.49619	0.05553	8.94	<.0001	0.86795	1.15213
<b>expenses_creditcard</b>	Please indicate how much of your college/	<b>1</b>	0.13100	0.05513	2.38	0.0175	0.85594	1.16830

Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
	university expenses are paid for by the following sou...-Credit cards							
<b>studentloan_expected amount</b>	How much student loan debt do you EXPECT to have accumulated when you complete your current degree?	<b>1</b>	0.32551	0.01667	19.53	<.0001	0.43873	2.27932
<b>finknowledge_SCORE E</b>	RECODE-SCORE_Nu mber correct out of the 5 financial knowledge questions	<b>1</b>	-0.12933	0.02221	-5.82	<.0001	0.89270	1.12019
<b>FinancialBehavior</b>		<b>1</b>	-0.06288	0.00979	-6.42	<.0001	0.92640	1.07945
<b>ParFinSupp</b>		<b>1</b>	-0.06489	0.01843	-3.52	0.0004	0.47039	2.12591
<b>financial_socialization</b>		<b>1</b>	-0.24744	0.01255	-19.71	<.0001	0.81280	1.23032

The SAS System

The REG Procedure

Model: MODEL1

Dependent Variable: Financial\_Stress

<b>Number of Observations Read</b>	13205
<b>Number of Observations Used</b>	12085
<b>Number of Observations with Missing Values</b>	1120

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
<b>Model</b>	29	37507	1293.35720	136.13	<.0001
<b>Error</b>	12055	114534	9.50096		
<b>Corrected Total</b>	12084	152041			

<b>Root MSE</b>	3.08236	<b>R-Square</b>	0.2467
<b>Dependent Mean</b>	14.55134	<b>Adj R-Sq</b>	0.2449
<b>Coeff Var</b>	21.18266		

**Parameter Estimates**

Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
<b>Intercept</b>	Intercept	1	16.67681	0.30509	54.66	<.0001	.	0
<b>female</b>		1	0.80849	0.06309	12.82	<.0001	0.88790	1.12625
<b>gender_other</b>		1	1.77329	0.37009	4.79	<.0001	0.98275	1.01755
<b>AfAmerican</b>		1	-0.22921	0.14361	-1.60	0.1105	0.93088	1.07425
<b>Hispanic</b>		1	0.45799	0.12637	3.62	0.0003	0.92206	1.08452

Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
AsAmerican		1	0.55849	0.13726	4.07	<.0001	0.83202	1.20189
RaceOther		1	0.56672	0.09021	6.28	<.0001	0.95818	1.04365
age	Age	1	-0.05271	0.00448	-11.75	<.0001	0.72055	1.38782
LowGPA		1	0.64530	0.07073	9.12	<.0001	0.93251	1.07238
fouryearprivate		1	0.05465	0.12786	0.43	0.6691	0.57516	1.73866
twoyearpublic		1	0.41903	0.10936	3.83	0.0001	0.88384	1.13143
Instate_tuition		1	0.07400	0.09502	0.78	0.4361	0.53919	1.85464
FirstGeneration		1	0.36590	0.06088	6.01	<.0001	0.86633	1.15429
International_Citizen		1	0.34049	0.19332	1.76	0.0782	0.80624	1.24033
fulltime		1	0.02660	0.10433	0.25	0.7988	0.51968	1.92425
parttime		1	0.01556	0.07251	0.21	0.8301	0.60243	1.65993
expectedsalary	What do you expect your starting annual salary to be when you enter the workforce after completin...	1	-0.12680	0.01477	-8.58	<.0001	0.86195	1.16016
expectedsalary_10years	What do you expect your	1	-0.23483	0.01921	-12.23	<.0001	0.81751	1.22322

Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
	annual salary to be 10 years after entering the workforce?							
<b>expenses_studentloans</b>	Please indicate how much of your colle ge/ university expenses are paid for by the following sou...- Student loans I have taken out for myself	<b>1</b>	0.24395	0.0318 9	7.65	<.00 01	0.44329	2.2558 4
<b>expenses_parentincome</b>	Please indicate how much of your colle ge/ university expenses are paid for by the following sou...- Parents or other family members from their current income or past savings	<b>1</b>	- 0.12305	0.0325 2	-3.78	0.00 02	0.46253	2.1620 1
<b>expenses_parentloans</b>	Please indicate how	<b>1</b>	0.21404	0.0419 7	5.10	<.00 01	0.85840	1.1649 6



Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
	much of your colle ge/ university expenses are paid for by the following sou...- Parents or other family members from loans taken out to assist me							
<b>expenses_scholarships grants</b>	Please indicate how much of your colle ge/ university expenses are paid for by the following sou...- Scholarships or grants that don't need to be repaid	<b>1</b>	- 0.24892	0.0268 4	-9.28	<.00 01	0.74857	1.3358 8
<b>expenses_moneyfromj ob</b>	Please indicate how much of your colle ge/ university expenses are paid for by the following sou...-Money	<b>1</b>	0.14443	0.0339 8	4.25	<.00 01	0.62991	1.5875 2

Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
<b>expenses_moneyfromsavings</b>	from my current job Please indicate how much of your college/university expenses are paid for by the following sou...-Money from my savings	1	0.11770	0.03488	3.37	0.0007	0.75518	1.32418
<b>expenses_moneyborrowed</b>	Please indicate how much of your college/university expenses are paid for by the following sou...-Money borrowed from family or friends	1	0.50446	0.05642	8.94	<.0001	0.86800	1.15207
<b>expenses_creditcard</b>	Please indicate how much of your college/university expenses are paid for by the following sou...-Credit cards	1	0.18454	0.05594	3.30	0.0010	0.85803	1.16547

Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
<b>studentloan_expected amount</b>	How much student loan debt do you EXPECT to have accumulated when you complete your current degree?	<b>1</b>	0.34646	0.01690	20.50	<.0001	0.44052	2.27005
<b>finknowledge_SCORE E</b>	RECODE-SCORE_Nu mber correct out of the 5 financial knowledge questions	<b>1</b>	-0.13242	0.02256	-5.87	<.0001	0.89275	1.12014
<b>FinancialBehavior</b>		<b>1</b>	-0.08852	0.00986	-8.98	<.0001	0.94303	1.06042
<b>ParFinSupp</b>		<b>1</b>	-0.07801	0.01871	-4.17	<.0001	0.47100	2.12313

The SAS System

The REG Procedure

Model: MODEL1

Dependent Variable: Financial\_Stress

<b>Number of Observations Read</b>	13205
<b>Number of Observations Used</b>	12085
<b>Number of Observations with Missing Values</b>	1120

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
<b>Model</b>	30	43909	1463.63910	163.16	<.0001
<b>Error</b>	12054	108132	8.97065		
<b>Corrected Total</b>	12084	152041			

<b>Root MSE</b>	2.99510	<b>R-Square</b>	0.2888
<b>Dependent Mean</b>	14.55134	<b>Adj R-Sq</b>	0.2870
<b>Coeff Var</b>	20.58301		

**Parameter Estimates**

Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
<b>Intercept</b>	Intercept	1	19.01460	0.30910	61.52	<.0001	.	0
<b>female</b>		1	0.71633	0.06140	11.67	<.0001	0.88510	1.12982
<b>gender_other</b>		1	1.56031	0.35971	4.34	<.0001	0.98227	1.01805
<b>AfAmerican</b>		1	-0.26551	0.13955	-1.90	0.0571	0.93080	1.07435
<b>Hispanic</b>		1	0.35700	0.12285	2.91	0.0037	0.92119	1.08555

Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
AsAmerican		1	0.46643	0.13342	3.50	0.0005	0.83147	1.20269
RaceOther		1	0.48785	0.08770	5.56	<.0001	0.95709	1.04483
age	Age	1	-0.05488	0.00436	-12.59	<.0001	0.72030	1.38830
LowGPA		1	0.51390	0.06890	7.46	<.0001	0.92776	1.07787
fouryearprivate		1	0.01600	0.12425	0.13	0.8975	0.57508	1.73890
twoyearpublic		1	0.40156	0.10626	3.78	0.0002	0.88380	1.13147
Instate_tuition		1	0.04524	0.09234	0.49	0.6242	0.53912	1.85489
FirstGeneration		1	0.38249	0.05916	6.47	<.0001	0.86623	1.15442
International_Citizen		1	0.29969	0.18786	1.60	0.1107	0.80618	1.24041
fulltime		1	-0.08296	0.10146	-0.82	0.4135	0.51883	1.92740
parttime		1	-0.06062	0.07052	-0.86	0.3900	0.60145	1.66265
expectedsalary	What do you expect your starting annual salary to be when you enter the workforce after completin...	1	-0.11894	0.01436	-8.28	<.0001	0.86159	1.16064
expectedsalary_10years	What do you expect your	1	-0.21770	0.01868	-11.66	<.0001	0.81655	1.22466

Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
	annual salary to be 10 years after entering the workforce?							
<b>expenses_studentloans</b>	Please indicate how much of your colle ge/ university expenses are paid for by the following sou...- Student loans I have taken out for myself	<b>1</b>	0.22372	0.0309 9	7.22	<.00 01	0.44303	2.2571 9
<b>expenses_parentincome</b>	Please indicate how much of your colle ge/ university expenses are paid for by the following sou...- Parents or other family members from their current income or past savings	<b>1</b>	- 0.13441	0.0316 0	-4.25	<.00 01	0.46245	2.1624 0
<b>expenses_parentloans</b>	Please indicate how	<b>1</b>	0.19268	0.0407 9	4.72	<.00 01	0.85807	1.1654 1

Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
	much of your colle ge/ university expenses are paid for by the following sou...- Parents or other family members from loans taken out to assist me							
<b>expenses_scholarships grants</b>	Please indicate how much of your colle ge/ university expenses are paid for by the following sou...- Scholarships or grants that don't need to be repaid	<b>1</b>	- 0.23499	0.0260 8	-9.01	<.00 01	0.74827	1.3364 1
<b>expenses_moneyfromj ob</b>	Please indicate how much of your colle ge/ university expenses are paid for by the following sou...-Money	<b>1</b>	0.14707	0.0330 2	4.45	<.00 01	0.62991	1.5875 3

Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
	from my current job							
<b>expenses_moneyfromsavings</b>	Please indicate how much of your college/university expenses are paid for by the following sou...-Money from my savings	1	0.15336	0.03392	4.52	<.0001	0.75401	1.32624
<b>expenses_moneyborrowed</b>	Please indicate how much of your college/university expenses are paid for by the following sou...-Money borrowed from family or friends	1	0.46896	0.05484	8.55	<.0001	0.86749	1.15275
<b>expenses_creditcard</b>	Please indicate how much of your college/university expenses are paid for by the following sou...-Credit cards	1	0.13957	0.05438	2.57	0.0103	0.85720	1.16658



Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
<b>studentloan_expected amount</b>	How much student loan debt do you EXPECT to have accumulated when you complete your current degree?	<b>1</b>	0.32534	0.01644	19.79	<.0001	0.43950	2.27531
<b>finknowledge_SCORE E</b>	RECODE-SCORE_Number correct out of the 5 financial knowledge questions	<b>1</b>	-0.11818	0.02193	-5.39	<.0001	0.89222	1.12080
<b>FinancialBehavior</b>		<b>1</b>	0.02294	0.01045	2.20	0.0282	0.79270	1.26151
<b>ParFinSupp</b>		<b>1</b>	-0.08530	0.01818	-4.69	<.0001	0.47090	2.12361
<b>managemoneywell</b>	Please indicate the extent to which you agree or disagree with the following statements: - I manage my money well.	<b>1</b>	-1.24312	0.04653	-26.71	<.0001	0.79252	1.26180

The SAS System

The REG Procedure

Model: MODEL1

Dependent Variable: Financial\_Stress

<b>Number of Observations Read</b>	13205
<b>Number of Observations Used</b>	12085
<b>Number of Observations with Missing Values</b>	1120

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
<b>Model</b>	30	41085	1369.49655	148.78	<.0001
<b>Error</b>	12054	110956	9.20495		
<b>Corrected Total</b>	12084	152041			

<b>Root MSE</b>	3.03397	<b>R-Square</b>	0.2702
<b>Dependent Mean</b>	14.55134	<b>Adj R-Sq</b>	0.2684
<b>Coeff Var</b>	20.85008		

**Parameter Estimates**

Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
<b>Intercept</b>	Intercept	1	18.71792	0.31764	58.93	<.0001	.	0
<b>female</b>		1	0.77333	0.06212	12.45	<.0001	0.88717	1.12718
<b>gender_other</b>		1	1.60113	0.36439	4.39	<.0001	0.98219	1.01813
<b>AfAmerican</b>		1	-0.26138	0.14136	-1.85	0.0645	0.93076	1.07439
<b>Hispanic</b>		1	0.43556	0.12439	3.50	0.0005	0.92199	1.08461

Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
AsAmerican		1	0.49793	0.13514	3.68	0.0002	0.83159	1.20251
RaceOther		1	0.48443	0.08889	5.45	<.0001	0.95607	1.04595
age	Age	1	-0.06446	0.00445	-14.47	<.0001	0.70765	1.41312
LowGPA		1	0.60148	0.06965	8.64	<.0001	0.93156	1.07347
fouryearprivate		1	0.01385	0.12587	0.11	0.9124	0.57500	1.73913
twoyearpublic		1	0.39343	0.10765	3.65	0.0003	0.88371	1.13160
Instate_tuition		1	0.00058628	0.09360	0.01	0.9950	0.53834	1.85758
FirstGeneration		1	0.24075	0.06026	4.00	<.0001	0.85671	1.16725
International_Citizen		1	0.19652	0.19043	1.03	0.3021	0.80505	1.24216
fulltime		1	-0.02618	0.10272	-0.25	0.7988	0.51933	1.92556
parttime		1	0.03930	0.07138	0.55	0.5820	0.60226	1.66040
expectedsalary	What do you expect your starting annual salary to be when you enter the workforce after completin...	1	-0.11792	0.01455	-8.10	<.0001	0.86113	1.16127
expectedsalary_10years	What do you expect your	1	-0.22657	0.01891	-11.98	<.0001	0.81711	1.22382

Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
	annual salary to be 10 years after entering the workforce?							
<b>expenses_studentloans</b>	Please indicate how much of your colle ge/ university expenses are paid for by the following sou...- Student loans I have taken out for myself	<b>1</b>	0.22791	0.0314 0	7.26	<.00 01	0.44300	2.2573 6
<b>expenses_parentincome</b>	Please indicate how much of your colle ge/ university expenses are paid for by the following sou...- Parents or other family members from their current income or past savings	<b>1</b>	-0.04993	0.0322 2	-1.55	0.12 12	0.45640	2.1910 5

Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
<b>expenses_parentloans</b>	Please indicate how much of your college/university expenses are paid for by the following sou...- Parents or other family members from loans taken out to assist me	<b>1</b>	0.22364	0.04132	5.41	<.0001	0.85828	1.16512
<b>expenses_scholarships grants</b>	Please indicate how much of your college/university expenses are paid for by the following sou...- Scholarships or grants that don't need to be repaid	<b>1</b>	-0.23789	0.02642	-9.00	<.0001	0.74823	1.33648
<b>expenses_moneyfromjob</b>	Please indicate how much of your college/university expenses are	<b>1</b>	0.14526	0.03345	4.34	<.0001	0.62991	1.58752

Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
	paid for by the following sou...-Money from my current job							
<b>expenses_moneyfrom savings</b>	Please indicate how much of your college/university expenses are paid for by the following sou...-Money from my savings	<b>1</b>	0.15134	0.03438	4.40	<.0001	0.75332	1.32745
<b>expenses_moneyborrowed</b>	Please indicate how much of your college/university expenses are paid for by the following sou...-Money borrowed from family or friends	<b>1</b>	0.49619	0.05553	8.94	<.0001	0.86795	1.15213
<b>expenses_creditcard</b>	Please indicate how much of your college/	<b>1</b>	0.13100	0.05513	2.38	0.0175	0.85594	1.16830

Parameter Estimates								
Variable	Label	D F	Parameter Estimate	Standard Error	t Value	Pr >  t	Tolerance	Variance Inflation
	university expenses are paid for by the following sou...-Credit cards							
<b>studentloan_expected amount</b>	How much student loan debt do you EXPECT to have accumulated when you complete your current degree?	<b>1</b>	0.32551	0.01667	19.53	<.0001	0.43873	2.27932
<b>finknowledge_SCORE E</b>	RECODE-SCORE_Nu mber correct out of the 5 financial knowledge questions	<b>1</b>	-0.12933	0.02221	-5.82	<.0001	0.89270	1.12019
<b>FinancialBehavior</b>		<b>1</b>	-0.06288	0.00979	-6.42	<.0001	0.92640	1.07945
<b>ParFinSupp</b>		<b>1</b>	-0.06489	0.01843	-3.52	0.0004	0.47039	2.12591
<b>financial_socialization</b>		<b>1</b>	-0.24744	0.01255	-19.71	<.0001	0.81280	1.23032