

SEO, GRACE YEEUN LEE. Ph.D. Hispanic First-Generation College Students' Perceptions of Stress, Emotion Regulation, and Grit in Relation to Academic Motivation. (2022)  
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Hispanic first-generation college students (FGCS) experience more potential barriers to college success than continuing generation college students (CGCS). With an eye toward identifying ways to support students in negotiating these barriers, there were three purposes to this study. First was to understand the variability among Hispanic FGCS based on their demographic variables. Second was to examine perceived stress, emotion regulation, and two components of grit (perseverance of effort and consistency of interest) in relation to academic motivation. Third was to examine the moderating roles of emotion regulation and two components of grit (perseverance of effort and consistency of interest) on the association between perceived stress and academic motivation. Participants were 491 first-year and second year Hispanic FGCS recruited from a Hispanic Serving Institution located in southern California. Students were recruited from psychology courses at the participating university and completed self-report questionnaires as part of class assignment. Multiple regression was used to examine the main effects of perceived stress, emotion regulation, perseverance of effort and consistency of interest on academic motivation. Three separate hierarchical multiple regression models were used to examine the interactions of perceived stress and the three moderators (emotion regulation, perseverance of effort, and consistency of interest) as predictors of academic motivation. Results indicated a significant bivariate correlation between perceived stress and academic motivation, but that perceived stress was not significantly associated with academic motivation in the regression analyses. There were significant main effects of emotion regulation, perseverance of effort and consistency of interest in predicting academic motivation. No significant interaction effects were found. This study contributes to the understand of Hispanic

FGCS and ways to support their success. Findings have implications for the development of interventions focused on emotion regulation and grit to support the academic success (specifically, academic motivation) of Hispanic FGCS.

HISPANIC FIRST-GENERATION COLLEGE STUDENTS' PERCEPTIONS OF  
STRESS, EMOTION REGULATION, AND GRIT IN RELATION TO ACADEMIC  
MOTIVATION

by

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## CHAPTER I: INTRODUCTION

### **Defining First-Generation College Students**

In the academic year of 2015 and 2016, 56% of United States (US) college students were first-generation college students (FGCS) and 59% of these students were the first sibling in their family to attend college (National Postsecondary Student Aid Study; RTI International, 2019). According to the Higher Education Act of 1965, FGCS are individuals with no parent who had completed a bachelor's degree or who had resided the majority of their lives with one parent who did not obtain a bachelor's degree. Students with at least one parent who had obtained a bachelor's degree are referred to as continuing-generation college students (CGCS; Department of Health, 1965/1998). This definition includes students with parents who have obtained associates degree or attended a 4-year college without graduating as FGCS.

While some researchers use the Higher Education Act definition (D'Amico & Dika, 2013; Gibbons et al., 2019; Pratt et al., 2019; Stebleton et al., 2014; U.S. Department of Education, 1965/1998), others have used stricter criteria and only considered students with parents who have obtained high school diplomas as the highest degree (not associates degrees) to be FGCS (DeAngelo & Franke, 2016; Dumais & Ward, 2010; Redford & Hover, 2017). The argument for stricter criteria is that FGCS with parents who had obtained an associate degree or enrolled for some time at 4-year institutions are different from FGCS with parents without any college experience at all. In response to various definitions of FGCS, Toutkoushian et al. (2021) investigated whether college graduation rates varied in students based on their parents education levels: mother with high school or less, mother attended 2-year but no degree, mother obtained associate degree, mother attended 4-year but no degree, mother obtained bachelor's degree or more, father with high school or less, father attended 2-year but no degree, father obtained

associate degree, father attended 4-year but no degree, father obtained bachelor's degree or more. Toutkoushian et al. found that the likelihood of students graduating from a 4-year institution increased along with parents' education levels and the number of parents in that education level. Specifically, students with parents who had completed a 4-year degree were more likely to graduate than students with parents who enrolled for some time at a 4-year institution but who did not receive a 4-year degree. In this study, FGCS are defined as those with at least one parent who has obtained a 4-year degree.

FGCS from 2-year institutions report cultural norms and motivation levels that differ from students in traditional 4-year institutions (Tibbetts et al., 2018). FGCS, especially for those from low-SES background, encounter structural barriers because many traditional 4-year institutions promote values that are created around middle-class lifestyles. For example, the cultural norm of independence (e.g., expressing one's own thoughts and ideas, learning autonomously, promoting self-accomplishments) is more prevalent among middle-class families, whereas norms of interdependence (e.g., learning to follow rules, working with others) are more prevalent among lower class families (Stephens, Markus, & Phillips, 2014). FGCS from lower-SES backgrounds might have a harder time adjusting to college in an environment that expects the opposite of what they have learned at home. When students from low-SES background enter 4-year institutions, they might have difficulties on developing a sense of belonging which can lead to emotional distress, and negative perception of self (Jury et al., 2017). FGCS (and faculty) at 2-year institutions report less cultural mismatch than those in 4-year institutions, leading to greater motivation levels for students attending 2-year institutions (Tibbetts et al., 2018). Due to the differing contexts in which the FGCS reside, this dissertation focuses on students attending 4-year institutions.

## Hispanic First-Generation College Students

Hispanics are the largest ethnic minority group in the United States (18%; U.S. Census Bureau, 2019). According to the Postsecondary National Policy Institute, there were 20% of Hispanic students enrolled in a public 4-year institutions compared to 12% Black students and 8% Asian students in 2018 (PNPI, 2020). In 2015-2016, 44% of Hispanic students were the first in their family to attend college, compared to 34% of Black Students, 29% of Asian students, and 22% of White students - making Hispanic students more likely to be FGCS than any students from other ethnic groups (*Excelencia in Education*, 2019). Even though Hispanics are the largest ethnic minority group to enroll in post-secondary education, they are least likely to complete their postsecondary degrees. In 2014, only 15% of Hispanics between the ages of 25 to 29 had obtained a bachelor's degree in comparison to 22% Blacks, 41% Whites, and 63% Asians (Krogstad, 2020). The differences in rates of Hispanic students who enroll in college versus obtain a 4-year degree suggests a need for research focused on how Hispanic FGCS can be supported in terms of postsecondary academic success.

College students with parents who have experiences with postsecondary education can receive from parents informational and academic support that can ease their transition to college. However, 23% of Hispanic college students in 2018 came from families with parents who had not even completed high school degrees (PNPI, 2020). Hispanic FGCS' parents are supportive of their children obtaining higher education (Ceballo, 2004), but the ways in which they convey their support to children is different from that of CGCS' parents due to the lack of personal experiences in 4-year institutions. Hispanic students are under-prepared in terms of what to expect, socially and academically, in postsecondary institutions (Michel & Durdella, 2018). Limitations in the amount of informational and academic support that Hispanic college students

can receive from their parents make them especially vulnerable to the stressful experiences of adjusting to college (Suwinyattichaiporn & Johnson, 2020). Stress can impact student success and motivation in Hispanic students, especially those from low-income families (Phinney et al., 2005). The disadvantages conferred by parents' lack of college experience interact with social and cultural barriers to potentially negatively impact Hispanic FGCS' academic success. This dissertation will focus on examining ways to support Hispanic FGCS at 4-year institutions.

### **Characteristics and Experiences of Hispanic First-Generation College Students**

Hispanic FGCS experience unique challenges in the college environment that are related to the nature of support their parents are able to provide, availability of financial support from institutions, balancing demands of college and family, hours of employment, and mental health.

#### **Parental Support and Academic Performances**

Parents without first-hand college experience are often unable to provide the same types of guidance and support to their college students in comparison to parents who have obtained at least a 4-year degree. Sy et al. (2011) conducted a study of 339 female first-year students recruited from a large public 4-year university in southern California, 37% of whom were FGCS. Latina students were most heavily represented among FGCS (49%), while among CGCS they were only 19% of the sample. Sy et al. (2011) reported that many FGCS in this sample (who were predominantly Latina) reported receiving significantly less emotional and informational support from their parents than CGCS. However, this does not mean that parents of FGCS are unsupportive. FGCS from all ethnic background report that their parents are highly encouraging of and committed to their children's enrollment in postsecondary education. In a study by Gibbons et al. (2019), 15 FGCS (located in a large, public state university in southeastern United States) were interviewed about their perceptions of parental support. Ten of the 15 students were

male, 5 identified as Black, 6 as White, 1 as Asian, and 3 as multi-racial. Students reported that parents were encouraging and wanted students to graduate. The premise that Hispanic parents are supportive of their college-enrolled students' educational success is consistent with a literature specifically focused on Hispanic FGCS. Ceballo (2004) interviewed 10 Hispanic FGCS about their parents' involvement while attending Yale University. All students discussed their parents' emphasis on the importance of college education and commitment to supporting their children's academic success in college through frequent verbal communications and physical actions. For example, a 21-years-old student in Ceballo's study talked about how her mother would wake her up at 5 in the morning so that the student could finish her project or bring her hot chocolate in the middle of the night. Parents of FGCS might not be able to directly help with academic matters, but many are emotionally supportive and physically present. However, support from parents of FGCS are not as effective when it comes to academic performances. Researchers have compared FGCS and CGCS and reported lower levels of academic achievement within the FGCS group. In a study of Dennis et al. (2005), 100 FGCS (84% Hispanic) participated in a study to determine the impact of parental support, in comparison to peer support, on their academic adjustment. Dennis et al. (2005) reported that peer support was a stronger predictor of grade point average than family support in this sample of majority Hispanic FGCS. D'Amico and Dika (2013) identified predictors of grade point averages (GPA) and retention rates using admission data. For the 2,971 students who participated, 48% were first-generation status; the sample was 70% White, 17% Black, 6% Hispanic, and 5% Asian, located in southeast United States. D'Amico and Dika reported that FGCS had significantly lower GPAs and lower retention rates than CGCS. While this sample was not comprised of majority Hispanic students, it still indicates that parental education impacts students' academic achievements. Overall, FGCS receive less

informative and academic support from parents than CGCS, which can negatively impact students' academic performances.

### **The Cultural Value of Familismo as Creating Conflict Involving the Demands of Family and School**

Hispanic FGCS experience stress balancing demands of family and school in addition to adjusting to the new social situations and academic demands of college. Hispanic families with strong sense of familismo are strongly attached to the family and value cooperation, loyalty, and interdependence (Espinoza, 2010; Vasquez-Salgado et al., 2015). The cultural value of familismo sometimes creates a dilemma for Hispanic college students who must choose between spending their limited time to be with family or to meet academic/social expectations. Conflict with parents might arise because students feel their parents are unable to understand the demands in college (Ceballo, 2004; Gibbons et al., 2019; Vasquez-Salgado et al., 2015). For example, a FGCS interviewed by Gibbons et al. shared that she received emotional encouragement from her parents but was still expected to be constantly around to spend time with them. The lack of understanding from parents of FGCS sometimes hindered students from spending time studying and prioritizing schoolwork. This finding is echoed within the population of Hispanic FGCS. Vasquez-Salgado et al. (2015) conducted interviews with Hispanic FGCS who lived on-campus, and students indicated that they experienced conflicts managing obligations from family and school. An example of a conflict that students experienced was whether to save money for educational expenses or spend it for travel to visit family. The cultural value of familismo is often embedded within the lives of Hispanic FGCS who might feel they should prioritize family over themselves. Sometimes, Hispanic students chose to prioritize family to avoid conflict. A Hispanic FGCS interviewed by Espinoza (2010) shared about a situation in which she had to

stop in the middle of a midterm exam at midnight to help her brother with English homework at her mother's request. This participant noted that she never mentioned to her mother she was working on an exam. FGCS experience unique stressors that are related to the cultural values in their families that can impact their academic success.

### **Financial Support and Student Employment**

Pratt et al. (2019) investigated 3,118 first-year college students from a large midwestern state university in United States (no information was provided on students' racial/ethnic background) to determine why they stayed or dropped out by the second year of college. They found that FGCS worried more about their finances and were more likely to work part-time or full-time compared to CGCS and that students who worked more hours were more likely to drop out in their second year (Pratt et al., 2019). FGCS expected that college would be difficult and had greater levels of doubt and lower levels of confidence that they would be able to academically perform well, compared with CGCS (Pratt et al., 2019). The Research Triangle Institute (RTI International, 2019) analyzed the National Center for Education Statistics (NCES) dataset from 2015 that included data from 19.5 million students. RTI reported that the median family income for all FGCS was \$41,000 in comparison to \$90,000 for CGCS' family income. While there are no known statistics of household income specifically for Hispanic FGCS, Hispanic families earn an average of \$58,923 annually compared to the average for all students of \$88,267 (*Excelencia in Education*, 2019). When students worked to financially support themselves, they spent less time studying and engaging in campus social life. This led to a lowered sense of belonging and confidence about school, increased psychological distress, and resulted in a greater likelihood of dropping out (Pratt et al., 2019). In 2018, 45% of Hispanic students worked while attending college as full-time students (Hussar et al., 2020). In addition,

Hispanic students tend to receive the least amount of federal aid among all racial/ethnic groups with an average of \$7,544 annually in awarded aid, in comparison to the average of \$8,584 annually awarded to all students (PNPI, 2020). Hispanic students also receive lowest amount of financial aid overall, an average of \$10,256 annually, in comparison to the amount awarded to all students of an average of \$12, 262 annually (PNPI, 2020).

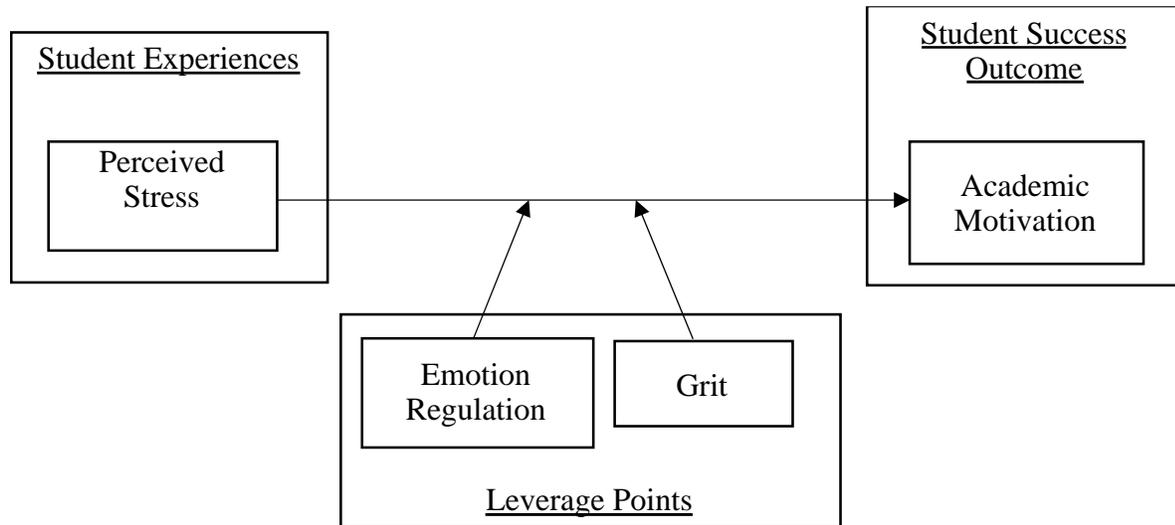
### **Mental Health Problems and Cultural Expectation**

Stebleton et al. (2014) compared FGCS and CGCS in terms of their mental health and uses of mental health services. The participants were over 58,000 students from six public institutions who were 61% White, 16% Asian, 9% Latinx, 6% Black, 7% others, and 28% FGCS. Stebleton et al. found FGCS reported more symptoms of depression and stress but made lower uses of mental health programs on campus than CGCS. This finding is consistent to those reported in studies with majority Hispanic students. A study conducted in California with 150 college students found 65% of Latino students had untreated mental health problems (Zhou et al., 2021). Zhou et al. (2021) points out that while familismo can be a protective factor from psychological distress, it hinders individuals experiencing mental health problems from seeking help. When the family is valued more than the individual, family members are seen as an extension of the individual so much that mental health problems can be considered as sources of shame or failure by the family (Zhou et al., 2021). Increases in psychological distress are common during the transition to college, and Hispanic FGCS who need support might feel reluctant to acknowledge the distress or to seek help. Untreated mental health problems might worsen and negatively impact Hispanic FGCS' academic achievement.

In summary, Hispanic FGCS have lower levels of achievement and lower retention and graduation rates compared to CGCS. The barriers that Hispanic FGCS experience, in addition to

the stressful experience of adjusting to a new environment with new demands, can challenge their academic success. Hispanic FGCS have lower levels of parental support, less financial support from institutions and less academic and social integration due to working outside of school. Having a bachelor's degree can make a difference in employment opportunities and college education is strongly related to future income levels. Young adults between the ages of 25 to 29 were surveyed in 2018 for highest levels of education obtained: 37% had earned bachelor's degrees and 47% had earned associate degrees (U.S. Department of Education, 2020). The median earnings for young adults are higher for those with college degrees (\$54,700 for those with bachelor's degrees, \$40,000 for those with associates degrees, compared with \$34,900 for high school graduates and \$27,900 for those without high school degrees; U.S. Department of Education, 2020). Despite the increasing cost of college tuition, the returns of a college education outweigh the costs of attending college (Hout, 2012). For example, in a 40-year work life, men will make 18 times over (\$1.1 million) and women will make 10 times over (\$636,000) the cost of attending a public university for 5 years (\$70,500; Hout, 2012). Therefore, it is important to not only understand the differences between FGCS and CGCS, but also the struggles that are specific to Hispanic FGCS to effectively support their college experiences. As shown in Figure 1, this study focuses on the population of Hispanic FGCS and aims to investigate emotion regulation and grit as potential leverage points to support success for Hispanic FGCS who face unique challenges in the college environments.

**Figure 1. Theoretical Model of Leverage Points to Support Academic Success among Hispanic FGCS**



### **Theoretical Framework**

This dissertation draws from Lazarus and Folkman’s (1984) transactional stress and coping theory (TSCT) and self-determination theory (SDT; Ryan & Deci; 2000) to understand the relations among perceived stress, emotion regulation, grit, and academic motivation in Hispanic FGCS. TSCT broadly frames the selection of perceived stress, emotion regulation, and grit as variables of interest in the prediction of academic motivation. SDT provides additional theoretical support in terms of the selection of emotion regulation as a predictor of academic motivation. TSCT and SDT are general theories that are not specific to the study of academic success. They apply in broad range of situations including college settings and experiences of Hispanic FGCS. The theoretical perspectives selected for this study are consistent with the idea that the key model variables represent both state (i.e., temporary way of being based on time and context) and trait (i.e., predisposed characteristic regardless of time and context) factors.

## **Transactional Stress and Coping Theory**

TSCT suggests that stress results from a transaction between the individual and the environment (Lazarus & Folkman, 1984). Lazarus and Folkman proposed that individuals engage in two appraisal processes when stimuli are presented. First is the *primary appraisal* in which meaning is attributed to the stimulus as positive, neutral, or stressful. During this process, positive or negative emotions are elicited based on how the stimulus is perceived. According to TSCT, psychological stress results when the external or internal demands are beyond personal resources or coping abilities (Folkman & Lazarus, 1985). For college students, this translates into stress occurring when their life demands (e.g., academic, social, family, financial) outweigh their ability to deal with the challenges in their environment. Specific to the proposed study, Hispanic FGCS experience high demands in areas such as adjusting to academic life, financial worries, working outside of campus, navigating social life and the expectation to be independent, and family obligations that can lead to stressful moments (Ceballo, 2004; D'Amico & Dika, 2013; Espinoza, 2010; Gibbons et al., 2019; Pratt et al., 2019; Sy et al., 2011; Vasquez-Salgado et al., 2015). Because stressful events or demands can change over time, the length of time over which stimuli are appraised can vary. At the same time, some students might perceive higher levels of stress than others regardless of the stressful events and perceive the presented stimuli to be greater than their personal resources or coping abilities. To understand associations between student's levels of stress and academic outcomes, cross-sectional data might be appropriate when understood as a strategy to assess the role of the stress levels experienced at a particular moment in time in relation to academic outcomes during that same period of time. TSCT guides the current study by identifying levels of perceived stress in Hispanic FGCS as a potential response to the challenges that Hispanic first-generation status experience within the college environment.

Lazarus and Folkman propose that when faced with stressful situations, individuals evaluate whether the stressor is potentially harmful, threatening, or challenging. When stimulus is deemed as negative, individuals engage in *secondary appraisal* to determine ways to manage the elicited emotions using their coping strategies (Lazarus & Folkman, 1984). Individuals then engage in problem-focused or emotion-focused strategies to cope with the stressors. *Problem-focused coping* is when conscious actions are taken to manage the stressor, while *emotion-focused coping* involves regulating the elicited emotions due to the stressor. After engaging in a coping strategy, the stressor is reappraised to determine if it was successfully changed to positive or neutral. If such change does not occur, then TSCT assumes other coping strategies will be used until there are no more coping resources left, at which time the individual will experience negative affect (Lazarus & Folkman, 1984). Within the proposed study, grit will be examined as an indicator of problem-focused coping, and emotion regulation will be examined as an indicative of emotion-focused coping. Lazarus and Folkman define coping as an ongoing process that involves deliberate decision-making and action. Emotion regulation is a strategy incorporated to manage the elicited emotions (Gross, 2015). The ability to regulate emotions might develop with time and experiences, especially during the initial years in college when students are encountering new people and responsibilities. Yet, students will enter college with differing levels of emotion regulation skills such that some students are predisposed to be better able to regulate their emotions than others. Grit is defined in terms of consistent determination to achieve of long-term goals (Duckworth et al., 2007). It is not uncommon for students to revise their values and career goals during the college years. The rate at which the students find and commit to a field of study can vary from one individual to another. Therefore, levels of grit might vary over time depending on the extent to which students have found a field of study that

is consistent with their goals. In addition, an individual's level of grittiness might vary based on other personal characteristics such as belief in ability to solve problems and confidence. For example, an individual with low confidence is more likely to give up when faced with disappointment or challenges because of lack of belief in ability to improve. However, an individual who believes that persevering despite the failures or boredom will result in some progress is more likely to stick to a goal and keep going. While students' ability to regulate emotions and grit can change over time, they are also, to some extent, stable characteristics. TSCT guides the selection of grit and emotion regulation as factors that might mitigate the impact of stress that Hispanic FGCS perceive during their experiences in college, and the use of cross-sectional data might capture the moments in which students' levels of stress are related to their levels of emotion regulation and levels of grit.

### **Self-Determination Theory**

Self-determination theory (SDT) frames the selection of academic motivation as the outcome of interest in the proposed study and the relevance of emotion regulation to this outcome. While SDT can be applied in a wide range of areas of inquiry, it has been frequently used to frame education research. SDT is a meta-theory (composed of 5 theories) that inform our understanding of the psychological processes related to student motivation and success (Reeve, 2012; Ryan & Deci, 2000). Ryan and Deci posited that there are two main types of motivation: intrinsic and extrinsic. Intrinsic motivation is when spontaneous motivation emerges because of interest in an activity, and extrinsic motivation is behavior driven by rewards (Reeve, 2012). SDT emphasizes the importance of motivation that is self-determined, such as intrinsic desires to gain knowledge or autonomy. This dissertation will focus on examining academic motivation that is intrinsic in nature. Specifically, students who believe in the importance of education and

find pleasure from learning itself possess intrinsic academic motivation. This dissertation focuses on understanding how intrinsic academic motivation varies among Hispanic FGCS. Motivation is an important factor to consider when studying college retention rates, especially in Hispanic FGCS who have lower completion rates than CGCS (Krogstad, 2020). However, the numerous barriers (cultural mismatch, lack of informative parental support, conflict in family and school obligations, working to financially support themselves or family) that Hispanic FGCS encounter during college can make it difficult to maintain motivation. Understanding factors that support academic motivation informs an understanding of how college professionals can best support the academic success of Hispanic FGCS.

The SDT theory that informs the proposed study with respect to its focus on emotion regulation as a potential moderator of associations between experiences of stress and academic motivation is *organismic integration theory*, which assumes that regulating emotional experiences, both positive or negative, will lead to personal psychological growth or integrative process (Ryan & Deci, 2017). Integrative process is when individuals take their positive and negative experiences as an opportunity to learn, with this learning informing their sense of self (Benita, 2020; Ryan & Deci, 2017). The integrative process allows individuals to strive for their goals and to have control over how they feel about their experiences. Over time, individuals develop immunity to negative stimuli by lowering their levels of psychological arousal (Roth et al., 2019). Effective emotion regulation helps individuals process difficult times and achieve their goals (Keltner & Lerner, 2010; Lazarus, 1994). SDT assumes that individuals who can regulate their emotional experiences to achieve integrative process will be more motivated. Emotion regulation is not always related to the experience of a stressor but also to every-day life events, and it can involve both positive and negative emotions; In contrast, coping is typically in

response to a stressor and negative emotions (Compas et al., 2017). However, individuals' ability to regulate their emotions might impact their ability to effectively engage in emotion-focused coping. In line with this assumption, this study hypothesizes that students with higher levels of emotion regulation will have higher academic motivation.

### **Current Study**

The proposed dissertation focuses on perceived stress, emotion regulation, and grit to examine how they work together to influence Hispanic FGCS' academic motivation. Drawing from TSCT and SDT, this study aims to understand how perceived stress is related to academic motivation. TSCT informs the selection of emotion regulation and grit as two types of coping strategies impacting students' motivation. Hispanic college students experience heightened levels of stress during their adjustment to college, and Hispanic FGCS encounter additional demands that might add on to their perceptions of stress (Ceballo, 2004; D'Amico & Dika, 2013; Espinoza, 2010; Gibbons et al., 2019; Pratt et al., 2019; Sy et al., 2011; Vasquez-Salgado et al., 2015;). Perceptions of stress can fluctuate over time and the use of cross-sectional data can capture patterns of behavior at particular points in time at which students are experiencing specific levels of stress and how these stress levels are related to academic motivation. Emotion regulation and grit are important strategies for students as they respond to stressors in college (Benita, 2020; Duckworth et al., 2007; Lazarus, 1994). Academic motivation is important to understand in Hispanic FGCS as it supports their academic success (D'Amico & Dika, 2013). Within the proposed study, levels of perceived stress among Hispanic FGCS are hypothesized to affect levels of academic motivation. Levels of emotion regulation and grit are separately considered as factors that are related to Hispanic FGCS' academic motivation both additively and interactively with levels of perceived stress. In summary, *transactional stress and coping*

*theory* and *organismic integration theory* frame the present study by suggesting that Hispanic FGCS' perceived stress might influence their academic motivation, but these relations depend on the extent to which Hispanic FGCS are able to regulate their emotions and their levels of grit.

## CHAPTER II: LITERATURE REVIEW

### **Academic Motivation**

#### **Conceptualization and Measurement**

Academic motivation is the desire to learn and valuing the importance of school (Wu, 2019). It differs from achievement motivation, which is the desire to perform well, and academic engagement, which is the learning activity that occurs by participating in classrooms and interacting with others (Reeve, 2012). While students who are academically motivated often have higher achievement and engagement (Wu, 2019; Rowell & Hong, 2013), academic motivation is best conceptualized as an explanation of why students are learning. Motivation levels among Hispanic FGCS might vary based on the levels of stress experienced such that education might not be prioritized in the moment, but learning is still valued (state). At the same time, there might be students with greater levels of motivation than others, regardless of the levels of stress experienced (trait). Therefore, the variable of academic motivation can be described as both trait and state.

In the literature on academic motivation, most researchers use the Academic Motivation Scale (AMS; Vallerand et al., 1992a) to assess academic motivation in college students (Cetin, 2015; Cokley, 2015; Komarraju et al., 2009; McCain et al., 2018). The AMS was designed to study motivation as conceptualized within SDT (Vallerand et al., 1992a). According to SDT, individuals are not dichotomously motivated or not motivated but vary in degrees of interest, competence, and relevance such that individuals can be intrinsically motivated, extrinsically motivated, or amotivated (Ryan & Deci, 2020). The AMS was initially developed as the Echelle de Motivation en Education (EME) for French-speaking Canadian students; it was later translated to English (Vallerand et al., 1992). The scale has 7 subscales with a total of 28

statements for respondents to indicate their levels of agreement with items that indicate various reasons why they might engage in academic-relevant behaviors. Example item for extrinsic motivation-external regulation is “Because with only a high-school degree I would not find a high-paying job later on,” and item for internal motivation – to experience stimulation is, “For the pleasure that I experience when I read interesting authors.” Vallerand and Bissonnette (1992) surveyed Canadian college students in 40 sections of a required French course to understand if academic motivation was related to persistence in completing courses. They found that students who completed the course had greater levels of intrinsic motivation at the beginning of the semester than students who dropped the course. AMS measures three types of intrinsic motivation (to know, toward accomplishment, to experience stimulation), three types of extrinsic motivation (identified, introjected, external regulation), and amotivation (Vallerand et al., 1992).

### **Impact of Academic Motivation on College Students**

Academic motivation serves as an important mechanism to explain associations between the experiences of FGCS and outcomes such as academic grades and retention (Cetin, 2015; D’Amico & Dika, 2013; Komarraju et al., 2009; McCain et al., 2018). There is a lack of research specific to Hispanic FGCS in the literature of academic motivation. Studies that focus on FGCS from diverse ethnic backgrounds are discussed to provide a general understanding of how academic motivation impacts FGCS in general, as well as Hispanic FGCS. Increasing academic motivation as measured by the AMS has been demonstrated to be associated with, and potentially predictive of, academic success based on the 7 types of motivation proposed by Vallerand et al. (1992). Komarraju et al. (2009) surveyed 308 college students (48% male, 56% 1<sup>st</sup> year, 18% 2<sup>nd</sup> year, 66% White and 23% Black) to understand how the 7 types of academic motivation, GPA, and big five personality were related. Komarraju et al. found the three types of

intrinsic academic motivation, measured with the AMS, were all significantly and positively related to GPA through conscientiousness from big five personality. Specifically, students who find personal interest in what they are learning have better GPAs through their goal-directed and diligent behaviors. The finding from Komarraju et al.'s study offers a broad picture of how intrinsic motivation is related to GPA in a sample of majority White students from a variety of parental education backgrounds. Findings are consistent with those from a study with a somewhat more diverse population and specific to FGCS. McCain et al. (2018) sampled 302 students from one southern and one midwestern university (87% female, 39% White, 19% Multi-ethnic, 14% Black, 11% Hispanic, 0.2% Asian, 37% 1<sup>st</sup> year, 21% 2<sup>nd</sup> year, 25% 3<sup>rd</sup> year, 21% 4<sup>th</sup> year, 37% FGCS, and mean age of 21.13) to compare how the 7 types of academic motivation (measured with the AMS) were related to GPA based on generational status. McCain et al. found that for college students in general, higher levels of all three types of extrinsic motivation were significantly related to higher GPA. For FGCS, intrinsic motivation to accomplish was positively and significantly related to GPA. McCain et al.'s sample included only 11% of Hispanic students. However, in Próspero et al.'s (2012) study comparing Hispanic and non-Hispanic students, similar results were found for Hispanic students as for FGCS in McCain et al.'s study. Próspero et al. (2012) collected survey data from 315 high school and community college students (63 in high school, 80% female, 57% Hispanics, 38% Black, 25 White, 2% others) to investigate how academic motivation differed between Hispanic and non-Hispanic students. Próspero et al. (2012) found in the overall sample, extrinsic and amotivation significantly predicted GPA, and intrinsic motivation was not significantly associated with GPA. However, when students' levels of motivation were compared based on race, Hispanic students reported significantly higher mean score of intrinsic motivation than non-Hispanic students. These

findings suggests that intrinsic motivation is a stronger predictor of GPA for FGCS in general, and Hispanic FGCS students in particular. The participants from Próspero et al.'s study were mostly community college students, and the results might have been different for students who attend four-year institutions. More studies are needed to clarify how intrinsic motivation varies and impacts academic outcomes specifically among Hispanic FGCS students at 4-year institutions.

The use of the AMS to assess academic motivation has some drawbacks. Cetin (2015) surveyed 166 juniors and seniors in Georgia Southern University to predict students' GPA and found there was no significant correlation between any of the 7 types of academic motivation and GPA, a finding that differed from those of other studies. These null findings might be the result of sample size (yielding insufficient power to detect associations) or indicative of poor construct validity. Another concern with the AMS is that it has not been validated across diverse ethnic and racial groups. Cokley (2015) was unable to validate the AMS with Black students using 3-, 5-, and 7- factor confirmatory factor analyses and suggested that these types of motivation (3 intrinsic, 3 extrinsic, amotivation) might not be as distinct for Black students. Hispanic students were not represented in Cokley's study, and no research has been conducted validating the AMS specifically among Hispanic college students in United States. Cokley called for a new measurement of academic motivation specifically developed within ethnic minority groups. In addition, academic motivation as measured by the AMS is often used as a predictor of students' well-being and performance and not necessarily as an outcome. This dissertation is interested in understanding intrinsic academic motivation as an outcome of students' experiences and characteristics rather than as a predictor of academic performance.

Plunkett and Bamaca-Gomez (2003) created a 5-item measure to understand academic motivation as an outcome in Hispanic youths. Plunkett and Bamaca-Gomez collected data from 273 Latinx high school students (located in Los Angeles, 58% girls, ages of 14 to 20, 59% of students were born in United States with both parents were born in Mexico) to understand how youths' perceptions of their parents' ability to provide academic help were related to academic motivation. The academic motivation measure created by Plunkett and Bamaca-Gomez showed adequate psychometric properties. The scale as a whole yielded a Cronbach's alpha of .71, and a principal component factor analysis indicated that the 5 items loaded onto a single factor accounting for 47% of variance with factor loadings from .50 to .75. The academic motivation measure asked students to rate how much they agreed with statements, and an example of an item is, "Education is important to me." Items for this scale are provided in Appendix A1. They assess students' effort, enjoyment, and valuing of learning – indicative of intrinsic academic motivation. Plunkett and Bamaca-Gomez found higher levels of perceiving parents as able to provide academic help were related to greater levels of academic motivation in youth. Even though the academic motivation measure developed by Plunkett and Bamaca-Gomez was originally created to assess academic motivation among high school students, this dissertation will use this measure for Hispanic college students. Plunkett and Bamaca-Gomez's measurement of academic motivation is one of the only measures known to assess academic motivation as an outcome and has potential to be valid for Hispanic FGCS. In addition, the items align to this study's definition of academic motivation. In this dissertation study, academic motivation is defined as students' interest and investment in education, as well as their perception of carrying out their value to learn.

## Perceived Stress as a Predictor of Academic Motivation

### Definition and Measurement of Perceived Stress

Perceived stress is defined by Cohen et al. (1994) as how stressed an individual *feels* about their current situation or environment in addition to feeling lack of control and lack of predictability. Perceived stress is when individuals subjectively appraise a situation or stimuli as unmanageable, unpredictable, and overwhelming (Cohen et al., 1983). Perceived stress differs from actual stress, which references occurrences of stressful life *events* (e.g., unemployment, final exams, divorce, newborn child) that are potentially stressful to the individuals experiencing them. Students experience heightened levels of stressful events during transition to college (Friedlander et al., 2007), but some students appraise the situation less negatively than others, resulting in varying levels of perceived stress. Perceived stress can be indicative of how individuals are interpreting stimuli at a given moment in time and with consideration of what is going on in their environments (perceived stress as “state”). At the same time, it can also be considered as a “trait” in that some individuals might have tendency to be more stressed than others in similar situations.

The most frequently used scale to assess college students’ perceptions of stress is the Perceived Stress Scale (PSS-14) originally developed by Cohen et al. (1983) and consisting of seven positively worded items and negatively worded items about students’ feelings and thoughts about their situations. A sample item is “In the last month, how often have you been upset because of something that happened unexpectedly?” The PSS-14 measures how stress is experienced and appraised by an individual. The measure was initially validated with 2 college student samples (332 first-year college students living in dorms at University of Oregon and 114 students in a psychology class), and Cohen et al. concluded that the PSS-14 was a better

predictor of student well-being than the number of stressful life events. However, the PSS-14 was criticized by researchers like Lazarus et al., (1985), because the PSS-14 contains redundant items. This issue led to the development of a modified version of the PSS that reduced the items to 10 (PSS-10) and has better psychometric properties than the PSS-14 (Cohen & Williamson, 1988; Denovan et al., 2019). In this study, the PSS-10 is used to measure perceived stress.

### **Impact of Perceived Stress on College Students**

Previous researchers have found that perceived stress is related to academic adjustment and both physical and psychological symptoms of gastrointestinal problems, depression, and psychological well-being among college students in general (Balmus et al., 2019; Chao, 2012; Segrin et al., 2007). In Frazier et al.'s study (2019), 8,997 college students completed online questionnaires about their perceptions of stress in relation to academic performance. Frazier et al. used a different measure to assess stress; they asked students to indicate how stressed they had been in the last 30 days on a scale of 1 (not stressed at all) to 10 (very stressed). The participants were from 20 2-year and 4-year schools in Minnesota with participants being 68% female, ages from 18 to 74 years old, 82% White, 9% Asian, 6% Black, 2% American Indian, 5% others, 0.4% Native Hawaiian, and 47% FGCS. Frazier et al. found that controlling for generational status, college students who perceived higher levels of stress and thought their stress was affecting their academic performance had lower GPAs than students who perceived similarly high levels of stress but did not think their stress affected their academic performance. This finding points to the perceptiveness that students possess in understanding whether their perceived stress impacts their academics. Frazier's sample was composed of majority White female students, so the findings are not generalizable to the Hispanic college student population. However, Arbona et al. (2018) examined the role of stress in relation to academic adjustment in a

sample of 426 Hispanic female students. Arbona et al. found that students who were stressed about their college experience had more depressive symptoms, which were then associated with lower intentions to persist in college.

Even though most of the researchers who have examined the impact of perceived stress among college students have included majority White students with small representation of Hispanic students, the studies here are discussed (with information of the participants' background provided) because there is such a limited literature on this topic, especially within the population of Hispanic FGCS. Chao (2012) investigated the impact of perceived stress on social support and psychological well-being by using 459 college students recruited from introductory psychology courses to complete online questionnaires. The participants were 85% White, 7% Black, 5% Hispanic, 3% Asian, 52% male, ages from 18 to 35, 26% 1st year, 25% 2<sup>nd</sup> year, 24% 3<sup>rd</sup> year, 25% 4<sup>th</sup> year, and 12% had received therapy or counseling in the past. Chao found higher levels of perceived stress were significantly related to lower levels of psychological well-being, especially when students perceived low social support. Segrin et al. (2007) surveyed 500 students from undergraduate classes (enrolled in a large south-western university; 60% female; ages from 17 to 56 years old; 73% White, 13% Hispanic, 6% Asian, 3% Black, 4% others, 2% American Indian; 42% worked part-time jobs, and 9% worked full-time jobs) to understand the relationship between perceived stress, depressive symptoms, and life satisfaction. Segrin et al. found that students with higher levels of perceived stress had higher levels of depressive symptoms and lower life satisfaction. In a study by Balmus et al. (2019), a total of 50 college students were surveyed during two different time points (25 during beginning of class and 25 during exam period) about their gastrointestinal symptoms. As Balmus et al. were conducting a preliminary study, no demographic information about the sample was provided

other than that the students were between 19-26 years old. Balmus et al. found students who completed questionnaires during the exam period (when they were presumably experiencing greater levels of stress) reported significantly greater levels of gastrointestinal symptoms compared to students sampled at the beginning of the semester. As indicated by findings from Chao, Segrin et al., and Balmus et al., the way stressful events are appraised by the college students affects them not only psychologically, but also physically.

### **Impact of Perceived Stress for Hispanic FGCS**

There is dearth of research that has investigated the role of perceived stress on Hispanic FGCS, which limits our understanding regarding ways to support this vulnerable population. There is one study that specifically examined the role of perceived stress in Hispanic FGCS. Suwinyattichaiorn and Johnson (2020) studied the associations between stress and depression among 907 Hispanic FGCS students attending a large Hispanic-serving institution in California (62% female, 18-30 years old, 19% 1<sup>st</sup> year, 33% 2<sup>nd</sup> year, 37% 3<sup>rd</sup> year, 11% 4<sup>th</sup> year). Suwinyattichaiorn and Johnson found that stress was significantly and positively related to depressive symptoms among Hispanic FGCS. It appears that the impact of perceived stress on students' depressive symptoms is similar across all college students, regardless of generational status or ethnic/racial background (Segrin et al., 2007). The area that the generational status does matter seems to be the level of support that FGCS seek and receive from institutions, compared to CGCS. Garriott and Nisle (2018) recruited 688 students located in western and midwestern regions of the U.S. (73% female, 23% 1<sup>st</sup> year, 22% 2<sup>nd</sup> year, 24% 3<sup>rd</sup> year, 30% 4<sup>th</sup> year, 53% FGCS, 78% White, 6% Mexican American, 5% Native American, 3.8% other, 2% Multi-ethnic, 1% Black, 0.6% Central American, and 0.3% South American) to study the impact of perceived stress on perceived academic goal progress through institutional support and whether

associations varied based on generational status. Garriott and Nisle found that FGCS who reported experiencing low versus high levels of stress varied in levels of institutional support received. Specifically, students with higher levels of stress experienced lower levels of institutional support. For CGCS, there was no difference in institutional support between those who were low and high stressed. While this dissertation does not focus on institutional support, the findings from Garriot and Nisle' suggest the importance of understanding ways in which to best support the academic success of students who experience a lack of parental informative support in the context of high levels of stress due to generational status. Hispanic FGCS experience unique stressors due to the barriers that include lack of parental support, family obligations, differing cultural expectations, and lack of financial support. More research is needed to understand how perceived stress impacts Hispanic FGCS specifically.

### **Perceived Stress and Academic Motivation**

This dissertation aims to understand the impact that perceived stress can have on students' academic motivation. To my knowledge, there is no study that has examined the direct effect of perceived stress on academic motivation with any FGCS in the United States. There is one study that has examined this association in another country. Ahmad et al. (2021) collected data from 150 Malaysia college students (53% female, ages from 21 to 26) who remained on campus during the Covid-19 lockdown to study the direct effect of perceived stress on academic motivation and found no significant direct effect. The lack of associations might be because 85% of students sampled in Ahmad et al. reported low levels of perceived stress and 51% of students reported high academic motivation. In two studies of U.S. college students, perceived stress and academic motivation were examined as potential mediators of associations between social problem-solving appraisals and academic performance (Baker, 2003; McCain et al., 2018). In

Baker's (2003) study, data were collected from 91 first-year college students in 1998-2001 (from psychology courses in mid-sized university, 78% female, and ages from 18 to 36). Baker found a significant negative correlation between perceived stress and intrinsic motivation to accomplish, as measured by the AMS, for college students regardless of generational status. This finding was confirmed within McCain et al.'s (2018) study in that there was a significant negative correlation between perceived stress and intrinsic motivation to accomplish goals for FGCS.

The literature indicates perceived stress can have a negative impact on academic progress, psychological well-being, and physical health for college students (Arbona et al., 2018; Balmus et al., 2019; Chao, 2012; Garriott & Nisle, 2018; Segrin et al., 2007; Suwinyattichaiyorn & Johnson, 2020). Therefore, there is reason to believe that perceived stress might similarly impact Hispanic FGCS' academic motivation. This dissertation will focus on Hispanic FGCS in United States, a group of students who researchers generally find to report high levels of stress during college (Stebbleton et al., 2014). To support the academic success of Hispanic FGCS, this study will attempt to understand how perceived stress is related to academic motivation – a potentially important predictor of academic achievement among Hispanic FGCS.

### **Moderating Role of Emotion Regulation**

#### **Conceptualization and Measurement of Emotion Regulation**

Emotion regulation is how individuals manage, evaluate, monitor, and modify their affective state through up or down regulation of positive and negative emotions (Compas et al., 2014). When emotions are elicited, individuals can accept the emotions and attempt to understand them or conceal the emotions due to feeling overwhelmed or judged (Roth et al., 2019). Emotion Dysregulation is when individuals allow themselves to feel negative emotions but do not know how to calmly process these emotions and might display outbursts of anger or

withdraw with sadness and anxiety (Roth et al., 2019). When individuals engage in dysregulated emotion regulation, they often find their emotions to be overwhelming and lack the nonjudgmental environment in which to freely explore their emotions. Individuals' ability to regulate their emotions might develop over time through practices and experiences of managing or monitoring their emotions, becoming a somewhat stable personality characteristic (trait), but it can also be a pattern of behavior that varies across points in time based on contextual factors (state).

The most widely used two measures of emotion regulation are the Emotion Regulation Questionnaires (ERQ; Gross & John, 2003) and the Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004). These two measures conceptualize emotion regulation differently. The ERQ distinguishes between two facets of emotion regulation: regulation of elicited emotion by changing the attached meaning of the emotional state (cognitive reappraisal) and suppression of negative emotions to avoid how one is feeling (expressive suppression; Gross & John, 2003). The ERQ consists of six items assessing cognitive reappraisal and four items assessing expressive suppression. An example of cognitive reappraisal item is, "I control my emotions by changing the way I think about the situation I am in." An example of expressive suppression is, "I keep my emotions to myself." Gross and John (2003) studied 210 college students (73% women, mean age of 21) to understand how these two emotion regulation strategies relate to well-being. Gross and John found that students who reported higher levels of reappraisal strategy had greater levels of well-being, and students who reported higher levels of suppression strategy had lower levels of well-being.

The DERS measures emotion dysregulation, which is the lack of ability to accept and understand elicited emotions and control behaviors resulting from the emotions (Gratz &

Roemer, 2004). The DERS was originally created to capture deficits of emotion regulation in clinically diagnosable populations (Gratz & Roemer, 2004), but researchers have used the DERS to understand the process of emotion regulation in normative development (Singh & Singh, 2013). Gratz & Roemer (2004) investigated the validity of the 36-item DERS measure using 357 college students from the University of Massachusetts at Boston (ages of 18-55, 73% female, 65% White, 17% Asian, 8% Black, 4% Hispanic, and 6% other) and found a six-factor structure was the best fit with six subscales assessing non-acceptance of emotional responses, difficulties engaging in goal directed behavior, impulse control difficulties, lack of emotional awareness, limited access to emotion regulation strategies, and lack of emotional clarity. While Gratz & Roemer's sample was composed of majority White students with small Hispanic representation, the total scale of DERS was found to have good internal reliability of .93 in a sample of 448 Hispanic college students at a large, southwestern university in 2015-2016 (Mayorga et al., 2018). This dissertation uses the DERS to examine emotion regulation in college students.

### **Importance of Emotion Regulation in Relation to Academic Motivation**

According to SDT, emotion regulation is an important factor associated with student success (Benita, 2020; Deci & Ryan, 2000; Reeve, 2012). Yet, there is no existing research that has examined how emotion regulation impacts students' academic motivation. A study that included emotion regulation as measured by the DERS and academic motivation measured by the AMS examined the two measures as predictors of academic performance (Singh & Singh, 2013). Singh and Singh (2013) collected information from 100 high school students in India (15 to 17 years old and 50% female) and found that difficulties related to engaging in goal directed behavior from the DERS, intrinsic motivation to know from the AMS, and lack of emotional awareness explained 47% of variance in academic performance. The study by Singh & Singh

was conducted in India and might not be generalizable to students in United States, but it does inform understanding of the roles of emotion regulation and academic motivation in student's academic success.

FGCS experience heightened stress related to changes in their environment specific to the responsibilities and expectations in college (D'Amico & Dika, 2013; Gibbons et al., 2019; Pratt et al., 2019; Sy et al., 2011). Hispanic FGCS experience barriers in addition to the stressors involving adjusting to college (Ceballo, 2004; Dennis et al., 2005; Espinoza, 2010; Vasquez-Salgado et al., 2015). TSCT proposes that stressful experiences are assigned meaning through a transactional process, and emotions are generated when stimuli are perceived to be stressful (Lazarus & Folkman, 1984). Finkelstein-Fox et al. (2018) examined the role of emotion regulation in relation to students' well-being among 158 majority White, female first-year college students in Connecticut. Finkelstein-Fox et al. found having higher levels of emotion regulation was a protective factor against increase of depression, anxiety, and stress. Students' ability to regulate their emotions is likely an important area of inquiry as it relates to academic motivation. Mayorga et al. (2018) examined the role of emotion regulation as a mediator of associations between acculturative stress and depressive symptoms in 448 Hispanic college students. Hispanic students with higher levels of acculturation experienced greater difficulties related to emotion regulation, which led to more depressive symptoms. This suggests that emotion regulation is a potential area of leverage in efforts to support Hispanic FGCS who experience high levels of stress.

### **Emotion Regulation as a Potential Moderator of the Association between Perceived Stress and Academic Motivation**

To my knowledge, there is no study that has examined emotion regulation as a moderator of the association between perceived stress and academic engagement, among FGCS or CGCS. However, the theoretical perspective of TSCT suggests that emotion regulation skills might be an area in which to intervene to support Hispanic college students. There was a study that investigated the interaction of perceived stress (measured using the PSS-10) and emotion regulation (measured using the ERQ) in predicting internalized symptoms (Zahniser & Conley, 2018). Zahniser and Conley collected data from 1,130 college students located in a midwestern private university between the years of 2009 and 2011 (71.8% female; 72.8% White, 12.1% Asian or Pacific Islander, 6.8 Hispanic or Latino/a, 2.3% Black, 1.5% Puerto Rican, 0.4% American Indian or Alaska Native, 0.5% Multiracial, 2.5% other). Zahniser and Conley found for students who reported using higher levels of cognitive reappraisal (an emotion regulation strategy), the relationship between perceived stress and internalizing symptoms was half as strong compared to students with lower levels of cognitive reappraisal. Expressive suppression did not moderate the association between perceived stress and internalizing symptoms but was positively related to internalizing symptoms. Another study by Teixeira et al. (2021) investigated whether emotion dysregulation (DERS) helped to explain the association between perceived stress (PSS-10) and psychosomatic symptoms in 193 first-year college students (84% female, 17-41 ages, and recruited from the School of Health department at the participating university). Teixeira et al. found emotion dysregulation did partially mediate the association between perceived stress and psychosomatic symptoms. These findings indicate that perceived stress and emotion regulation work together to explain students' health. Zahniser and Conley's and Teixeira et al.'s studies suggest the need to investigate emotion regulation as a leverage point for supporting the mental health of college students. Many Hispanic students have ongoing mental

health problems that are left untreated, and these students often do not seek out help due to cultural reasons (Zhou et al., 2021). While students with mental health problems should be encouraged to seek out support from health care professionals, intervening with emotion regulation strategies might be a preventative way to decrease the number of students developing mental health difficulties. This dissertation will examine the interaction of perceived stress and emotion regulation as potentially impacting academic motivation.

### **Moderating Role of Grit**

#### **Conceptualization and Measurement**

Grit is defined as possessing “perseverance and passion for long-term goals” (Duckworth et al., 2007, p. 1087). Duckworth et al. (2007) conceptualized grit as a personal quality that contributes to the understanding of differences in individuals’ achievement despite similar intelligences across careers and fields. Grit is seen as a noncognitive characteristics that relates to student success above and beyond talent (Reed & Jeremiah, 2017). Students with higher levels of grit are expected to have better outcomes because of their continuous effort despite challenges, failures, or stressful events. Grit can be described as trait because individuals can vary in their belief that ability - making an effort - leads to different results. Individuals who believe in their ability, possess greater levels of confidence, maintain higher levels of self-control, and sustain positive mental health are more likely to persevere despite the obstacles and stay committed to a goal (Hochanadel & Finamore, 2015; Kannangara et al., 2018). At the same time, grit can be described as state because researchers perceive grit as teachable, and levels of grit are expected to increase with age and experiences (Duckworth et al., 2007). Therefore, levels of grit can be temporary based on the number of challenging experiences that an individual overcame.

The Grit Scale (Grit-O) was originally developed with a total of 12-items and was validated in six studies with sample of adults over the age of 25, Ivy League college students, West Point cadets, and National Spelling Bee finalists (Duckworth et al., 2007). The Grit-O measures two related constructs. Six items assess perseverance of effort, and six items assess consistency of interest. Perseverance of effort describes individuals who are hardworking despite setbacks, while consistency of interest involves pursuing the same goal for a long time without changing the goal or interest. Duckworth et al. (2007) investigated whether grit predicted achievement over and above IQ and conscientiousness. Overall, it was found that grit explained a significant amount of variance in achievement outcomes over and above IQ, and grit accounted for greater variance in outcomes than conscientiousness. Duckworth et al. argued their findings provided support for the proposition that individuals with the same levels of talent and initial effort might still vary in their achievement or accomplishments if one individual sticks to a goal longer than the other. Duckworth and Quinn (2009) shortened the grit scale to 8 items (Grit-S) and found that grit measured with 8 items was consistent with a higher-order model with two first-order latent factors of perseverance of effort and consistency of interest loading onto a second-order latent factor of grit. It was initially recommended that using the overall score of grit provides better prediction of outcomes than examining grit as two separate constructs of perseverance of effort and consistency of interest. However, Credé et al. (2017) conducted a meta-analysis using 584 effect sizes from 88 samples (total of 66,807 individuals) and found overall grit (combining the two dimensions) provided no unique explanation of academic performance or high school and college GPA after controlling for conscientiousness. Credé et al. found perseverance of effort had stronger criterion validity than consistency of interest in explaining academic performance after controlling for conscientiousness. Therefore, Credé et al.

recommended that perseverance of effort and consistency of interest be studied as two separate constructs.

Researchers have repeatedly reported that that only perseverance of effort (not consistency of interest) explains variance in academic performances (Cho & Serrano, 2020; Credé et al., 2017; Mason, 2018; Werner et al., 2019; Wolters & Hussain, 2015). Some researchers argue that grit is highly correlated with other noncognitive characteristics such as conscientiousness and contributes very little to the study of student success (Credé et al., 2018; Ponnock et al., 2020). Conscientiousness is defined as possessing the ability to plan, be goal-directed and disciplined, and delay gratification (Roberts et al., 2009). While grit is strongly correlated with conscientiousness, it is still a good predictor of retention, high school GPA, and cognitive ability (Credé et al., 2017). Therefore, Credé et al., has suggested that grit might be a good construct to examine in situations in which retention is problematic, such as in higher education. This dissertation will examine grit as 2 separate constructs of perseverance of effort and consistency of interest to see how each relates to academic motivation.

### **Importance of Grit in Relation to Academic Motivation**

Grit is a construct that has been mainly studied in relation to academic success, such as GPA and retention (Credé et al., 2017; Duckworth et al., 2007; Duckworth & Quinn, 2009; Mason, 2018). There is no known study that has examined grit in relation to academic motivation. A study by Wolters and Hussain (2015) examined grit in relation to achievement motivation. The researchers collected survey data during 2 weeks before the final exam during a fall semester from 213 college students attending a large public university in United States. The sample was diverse, with Hispanic students representing the largest group. Wolters and Hussain found perseverance of effort was significantly and positively related to achievement motivation.

Cho and Serrano (2015) called for grit to be examined along with other personality and motivational variables to better understand the function of grit in students' academic experiences. SDT suggests that students' motivation mediates the association between student noncognitive characteristics and academic performances (Ryan & Deci, 2000). This dissertation investigates grit as two separate constructs and how they each relate to academic motivation. Since this dissertation will be one of the first to examine perseverance of effort and consistency of interest in relation to academic motivation, the analyses will be considered as exploratory.

### **Grit as Potential Moderator of the Association between Perceived Stress and Academic Motivation**

There is no study known to date that has examined grit as a moderator of the association between perceived stress and academic motivation. Kannangara et al. (2018) collected data from 440 adults in England (ages of 18 to 30, 56% female, 81% in college) and found the overall grit score was significantly negatively correlated with perceived stress as measured by the PSS-10. Kannangara et al. also conducted a qualitative investigation with 10 graduates from the University of Bolton (70% female) to understand how students persisted through stressful events of college. Based on the results of that study, Kannangara et al. suggested that grit might help to reduce levels of perceived stress, as participating students who valued perseverance through hard times talked about the importance of a growth mindset and focusing on the positive aspects of a challenge. While Kannangara et al.'s study is not generalizable to Hispanic FGCS, there is no known literature on Hispanic students that has examined the association between perceived stress and academic motivation as moderated by grit. Hispanic students have lower graduation rates despite being the largest ethnic minority group to enroll in college (Krogstad, 2020; PNPI, 2020) Examining grit as a potential leverage point to intervene when Hispanic FGCS experience stress

due to the combination of academic and social demands (family obligations) might help to increase retention rates among Hispanic FGCS. By helping students discover their goals and adapt a growth mindset, there is the potential to lessen the impact of perceived stress on academic motivation. This dissertation will examine how perseverance of effort and consistency of interest each separately moderate the association between perceived stress and academic motivation.

### **Purpose of Study**

The perception of stress in college can negatively impact students' academic motivation; however, personal characteristics can buffer the impact of perceived stress on academic motivation. There are three purposes of the proposed study. The first purpose is to understand variations that exist among first-year and second-year Hispanic FGCS attending a 4-year institution by reporting descriptive information about the sample. Specifically, year in school, gender, living arrangement, immigrant generational status, and working hours will be examined to understand the nature of the sample. Then, I will examine how levels of perceived stress, emotion regulation, grit (perseverance of effort and consistency of interest) and academic motivation vary across demographic groups. The second purpose of this study is to understand the impact of perceived stress, emotion regulation, perseverance of effort, and consistency of interest on academic motivation among Hispanic FGCS. The third purpose is to examine whether the association between perceived stress and academic motivation might be moderated by emotion regulation and the two components of grit.

### **Research Questions and Hypotheses**

1. What is the association between Hispanic FGCS' perceived stress, emotion regulation, perseverance of effort and consistency of interest, and their academic motivation?

H1a. Students with higher levels of perceived stress will have lower academic motivation.

H1b. Students with lower levels of emotion regulation will have lower academic motivation.

H1c. Students with lower levels of perseverance of effort will have lower academic motivation.

H1d. Students with lower levels of consistency of interest will have lower academic motivation.

2. Does emotion regulation moderate the association between perceived stress and academic motivation among Hispanic FGCS?

H2. The negative association between perceived stress and academic motivation will be stronger when levels of emotion regulation are lower.

3. Does grit (perseverance of effort and consistency of interest) moderate the association between perceived stress and academic motivation among Hispanic FGCS?

H3a. The negative association between perceived stress and academic motivation will be stronger when levels of perseverance of effort are lower.

H3b. The negative association between perceived stress and academic motivation will be stronger when levels of consistency of interest are lower.

## CHAPTER III: METHODS

### **Participants**

The data used for this study comes from a large cross-sectional dataset collected in 2011 and 2020 at a university located in Southern California, recognized as a Hispanic Serving Institution. Out of 22,025 students who participated, 491 first- and second-year Hispanic FGCS completed surveys between the years of 2017 and 2019 including all variables of interest for this study. Third- and fourth-year students were not included in the sample, as they represent a different group of students – those who have succeeded academically to the point that they have remained enrolled in college. More than half of the participants were female (70%), and participants were between the ages of 18 to 20 years old with a mean age of 18.75 ( $SD = .87$ ). All participants identified their ethnicity/race as Hispanic. The sample was 63% first-year and 37% second year. The majority of participants (82%) reported they were living with one or both of their parents at the time of data collection. Weekly work hours varied considerably, with 47.3% of students working 0 hours, 27.3% working 20 hours or less, 25% working 21-40 hours, and 0.4% working more than 40 hours. More than half of the participants (54.3%) indicated that English was not their first language. Fourteen percent of students and parents were born in a foreign country; 78% of students were born in US, but parents were born outside of US; and 8% of students and parents were born in US. Foreign born students identified their birth countries as Mexico ( $N = 42$ ), Guatemala ( $N = 16$ ), El Salvador ( $N = 6$ ), Peru ( $N = 3$ ), Honduras ( $N = 1$ ), Puerto Rico ( $N = 1$ ), and Multiple/Other ( $N = 1$ ).

### **Procedure**

The data used for this study were collected every semester between 2017 and 2019 (four semesters) from college students enrolled in psychology courses at the participating university.

Students had a choice of either participating in research studies or completing an alternative written task as part of a required course assignment. Students interested in research studies provided consent for participation through IRB approved consent forms and signed up through SONA (a research participant management system). After signing up, subject pool participants were provided with a link to complete the self-report survey online through Qualtrics, or they picked a time and date to complete a paper-pencil survey provided by a trained researcher in a group setting. All participants were provided with unlimited time to complete the survey, and most finished the survey within 8-12 minutes.

## **Measures**

### **Academic Motivation**

The Academic Motivation Scale (Plunkett & Bamaca-Gomez; 2003) was used to assess participants' levels of interest, effort and valuing of education. This measure was originally developed with Mexican-origin adolescents and had acceptable reliability ( $\alpha = 0.71$ ) within that group. Another study that used this measure found higher reliability in a sample of Hispanic adolescents between the ages of 13 to 19 ( $\alpha = 0.77$ ; Sands & Plunkett, 2005). Respondents rate how much they agree with each statement using a 4-point Likert scale with (1) indicating *strongly disagree* and (4) indicating *strongly agree*. Sample items are "Education is important to me" and "In general, I like school." The five items are averaged to yield summary scores with higher scores indicative of greater levels of academic motivation. In the current study, reliability across the 5-items was  $\alpha = 0.75$ .

### **Perceived Stress**

College students' perceptions of stress were measured with the 10-item Perceived Stress Scale (PSS-10) using a 5-point Likert response scale ranging from (1) *never* to (5) *very often*.

Sample items include “In the last month, how often have you felt nervous and stressed?” and “In the last month, how often have you felt difficulties were piling up so high you could not overcome them?” Items are averaged to form a composite score with higher scores indicating greater levels of perceived stress. Other researchers who have used the PSS-10 to assess perceived stress among college students have found high internal reliability with Cronbach alpha of 0.84 (Kaya et al., 2019). The Cronbach’s alpha for sample for the current study also indicated good reliability ( $\alpha = 0.83$ ).

### **Emotion Regulation**

Emotion regulation was measured using the Difficulty in Emotional Regulation Scale (DERS) consisting of 36 items with a 5-point Likert response scale with options ranging from (1) *almost never* to (5) *almost always*. Sample items are, “When I’m upset, I take time to figure out what I’m really feeling” (reverse coded), and “When I’m upset, I believe I will remain that way for a long time.” Previous studies have found the DERS to have high reliability in college student samples ( $\alpha = 0.91$ ; Aurora & Klanecky, 2016). The total DERS score was found to have good reliability and validity in samples of undergraduate students in U.S (Gratz & Roemer, 2004). The thirty-six items are averaged (with reverse coding where necessary) to yield a summary score with higher scores on the DERS indicative of lower levels of dysregulation (i.e., greater levels of emotion regulation). Reliability within the sample for the current study was  $\alpha = 0.931$ .

### **Grit**

Grit was assessed using the 8-item Grit-S measure (Duckworth & Quinn, 2009). Grit-S contains two subscales: four items assess perseverance of effort and four items assess consistency of interest. Students indicate how much they relate to a given statement using a 5-

point Likert scale with responses ranging from (1) *not like me at all* to (5) *very much like me*. A sample perseverance of effort item is, “Setbacks don’t discourage me.” A sample consistency of interest item is, “I have difficulty maintaining my focus on projects that take more than a few months to complete” (reverse coded). In a study that recruited college students located in a suburban university in California, higher internal reliability was found for the full measure (8-items;  $\alpha = 0.74$ ), and lower levels were observed for the subscales (Cronbach alphas of .62 and .63; Weisskirch, 2018). Higher scores on the Grit-S indicate greater levels of perseverance or consistency. In the sample for the proposed study, the Cronbach’s alpha for the full scale was .66, while Cronbach’s alpha for the perseverance of effort subscale was .67 and for the consistency of interest subscale was .70.

### **Data Analytic Strategy**

Descriptive statistics were computed in SPSS to describe distributions of all key variables. Then, Pearson Product Moment Correlation Coefficients were calculated in SPSS to assess bivariate associations between key variables. To deal with outliers, the Outlier Labeling Rule (Hoaglin & Iglewicz, 1987) was used, which is multiplying the interquartile range by factor of 2.2 and removing from further analyses values beyond the lower and upper bound of the markers. Four assumptions of multiple regression were tested because the statistical procedures used in this dissertation assumes the following: linear relationships between all independent variables and the dependent variable, multivariate normality, multicollinearity, and homoscedasticity (Williams et al., 2013). Violation of these assumptions results in increases in Type I or Type II error and the effect sizes might be under- or over-estimated (Osborne & Walters, 2002). For this study, it was assumed that if assumptions were violated, the data would

be appropriately transformed after considering the robustness of the statistical procedures to specific violations.

As part of preliminary analyses, R was used to generate visual depictions of heterogeneity within this sample of first- and second-year Hispanic FGCS. Specifically, their classification (year in school), gender, living arrangement, family immigrant background, and working hours were examined to understand the student population. Then ANOVAs and t-Tests were conducted in SPSS to understand whether first generation college students varied in their levels of perceived stress, emotion regulation, and grit across demographic factors (year in school, gender, living arrangements, family immigrant background, and working hours).

To determine control variables within models, preliminary regression analysis was conducted entering all demographic variables (year in school, gender, living arrangements, family immigrant background, and working hours) simultaneously as predictors of academic motivation. In the regression model, perceived stress, emotion regulation, perseverance of effort, and consistency of interest were included as independent variables. Potential control variables that significantly predicted academic motivation above and beyond the independent variables were retained in all subsequent analyses.

For the focal analyses, three separate hierarchical multiple regression model were conducted in two steps in SPSS to test the hypotheses. Significant covariates from the preliminary analysis were included in the first step along with perceived stress, emotion regulation, persistency of effort, and consistency of interest. All four focal variables were centered prior to entering them into the regression and before calculation of interaction terms. Three interaction terms were created by taking the product of perceived stress with emotion regulation, persistency of effort, and consistency of interest. In the second step, interaction terms

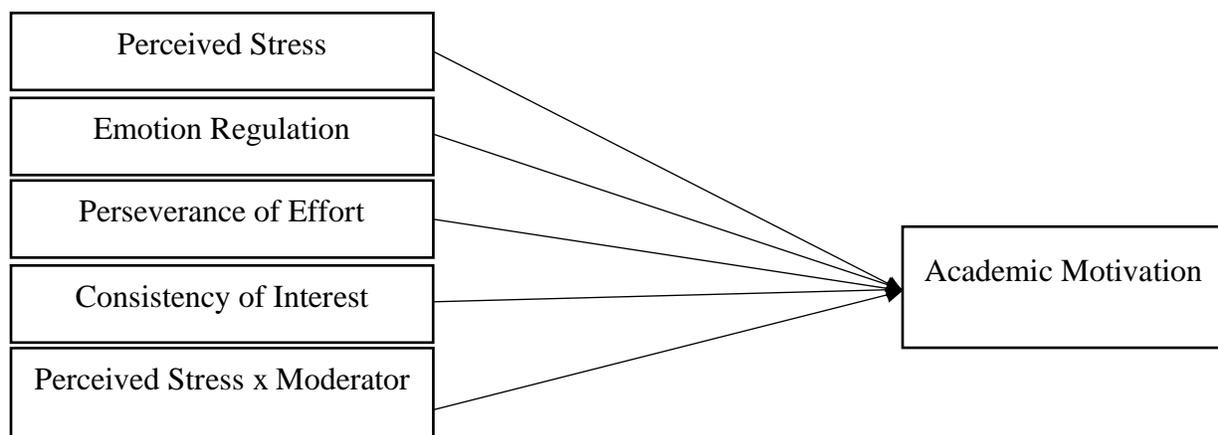
were added as predictor of academic motivation. Different interaction terms were entered during the second step for each model. In the first hierarchical multiple regression model, the interaction term of perceived stress and emotion regulation was added as predictor of academic motivation. In the second hierarchical multiple regression model, the interaction term of perceived stress and perseverance of effort was added as predictor of academic motivation. In the third hierarchical multiple regression model, the interaction term of perceived stress and consistency of interest was added as predictor of academic motivation. Any significant interactions would then be probed using the Johnson-Neyman test (regions of significance testing) and tests of simple slopes using an online utility (Simple Intercepts, Simple Slopes, and Region of Significance in MLR 2-Way Interaction; Preacher et al., 2010). The Johnson-Neyman test would identify cutoff points of the moderator (i.e., emotion regulation, persistence of effort, and consistency of interest) at which the association between perceived stress and intrinsic academic motivation was significant. The tests of simple slopes would provide information on whether there are significant associations between perceived stress and academic motivation at one standard deviation below the mean, above the mean, and at the mean of the moderator.

## CHAPTER IV: RESULTS

### Preliminary Analyses

In the preliminary analyses, outliers were identified, the four assumptions of hierarchical multiple regression (linearity, multivariate normality, multicollinearity, homoscedasticity) were tested, and covariates were determined. Outliers were tested for the following variables: academic motivation, perceived stress, emotion regulation, perseverance of effort, and consistency of interest. No outliers were identified for academic motivation, emotion regulation, and perseverance of effort. There were outliers for perceived stress with 7 cases below the lower bound of the interquartile range multiplied by factor of 2.2. There was 1 case in consistency of interest below the lower the range. The outliers were treated as missing values. Analyses conducted in SPSS were set to handle missing values with listwise deletion. There were 0.5% missing values in this study and 19% of the cases included a missing value.

**Figure 2. Model Predicting Academic Motivation from Perceived Stress, Emotion Regulation, Perseverance of Effort, Consistency of Interest, and Interaction Terms**



*Note.* The model was tested three times, once each with the moderators of emotion regulation, perseverance of effort, and consistency of interest.

Scatterplots were generated to visualize associations between perceived stress and academic motivation, emotion regulation and academic motivation, perseverance of effort and academic motivation, and consistency of effort and academic motivation and to determine whether the assumption of linearity was violated for these variables. Since emotion regulation and the two grit components were considered to be potential leverage points in the theoretical model, they were treated as predictors in the model as shown in Figure 2. If the scatterplots indicated the relationship between the independent variables and dependent variable could be modeled by a straight line, then the assumption of linearity was met. As shown in Appendix B, all variables met the linearity assumption.

To test for multivariate normality, a probability plot was generated with observed cumulative probability and the expected cumulative probability. All of the independent variables (perceived stress, emotion regulation, perseverance of effort, and consistency of interest) were analyzed together to produce the cumulative probabilities. If the distribution follows the diagonal line, then the assumption of multivariate normality is met. The Kolmogorov-Smirnov test and the Shapiro-Wilk test were also conducted in SPSS to test for normality of distributions, and they showed that none of the focal variables were normally distributed. However, there have been critiques of testing for normality based on the parameter rather than normality itself – which can lead to rejecting normality because of small sample sizes or lack of power (Tsagris & Pandis, 2021). Therefore, visual examination of graphs for skewness and kurtosis have been suggested to determine normal distributions of variables. Also, as long as there are no extreme outliers, linear regression models are robust to violation of normality (Knief & Forstmeier, 2021). Skewness and kurtosis of distributions were reported to examine normality. Skewness measures the lack of symmetric distribution of a variable, and kurtosis measures of the shape of a distribution's tails

in relation to the overall shape of the distribution (Hair et al., 2010). Data with skewness between -2 to 2 and kurtosis between -7 to 7 are considered to be normally distributed (West et al., 1995). All variables had error terms that were normality distributed as shown in Figure B5. According to the skewness and kurtosis statistics in Table 1, assumption of normality for academic motivation, perceived stress, emotion regulation, perseverance of effort, and consistency of interest were met.

To test for multicollinearity, the variance inflation factor (VIF) and tolerance scores were evaluated. Multicollinearity occurs when independent variables are highly correlated (Williams et al., 2013). If the VIF for independent variables are below 5 and the tolerance score is greater than 0.2, then there is no multicollinearity in the model (Hair et al., 2010). The VIF and tolerance scores in Table 2 show there was no multicollinearity in the model. Perceived stress, emotion regulation, and grit variables were all mean centered to minimize multicollinearity (Cohen et al., 2003).

To test homoscedasticity, scatterplots of residuals and predicted values were plotted. Homoscedasticity is the homogeneity of the error variance across independent variables or different groups (Osborne, 2002). If the distribution appears random with no pattern, then the assumption of homoscedasticity is maintained. Presence of heteroscedasticity makes the variance larger, increasing the chance of finding a statistically significant result when the null hypothesis is true (Type 1 error). As shown in Figure B6, the assumption of homoscedasticity appears to not be violated.

Descriptive statistics and bivariate correlations are presented in Table 1. Higher levels of perceived stress were associated with associated with lower levels of emotion regulation,  $r(486) = -.57, p < .001$ , lower levels of perseverance of effort  $r(488) = -.23, p < .001$ , and lower levels

of consistency of interest,  $r(488) = -.43, p < .001$ . Higher levels of perceived stress were associated with lower levels of academic motivation,  $r(489) = -.20, p < .001$ . Higher levels of academic motivation were associated with higher levels of emotion regulation,  $r(488) = .30, p < .001$ , higher levels of perseverance of effort,  $r(490) = .51, p < .001$ , and higher levels of consistency of interest,  $r(490) = .24, p < .001$ . Higher levels of emotion regulation were associated with higher levels of perseverance of effort,  $r(488) = .30, p < .001$ , and higher levels of consistency of interest,  $r(488) = .42, p < .001$ . Higher levels of perseverance of effort were associated with higher levels of consistency of interest,  $r(490) = .15, p < .001$ .

**Table 1. Descriptive Statistics and Bivariate Correlations**

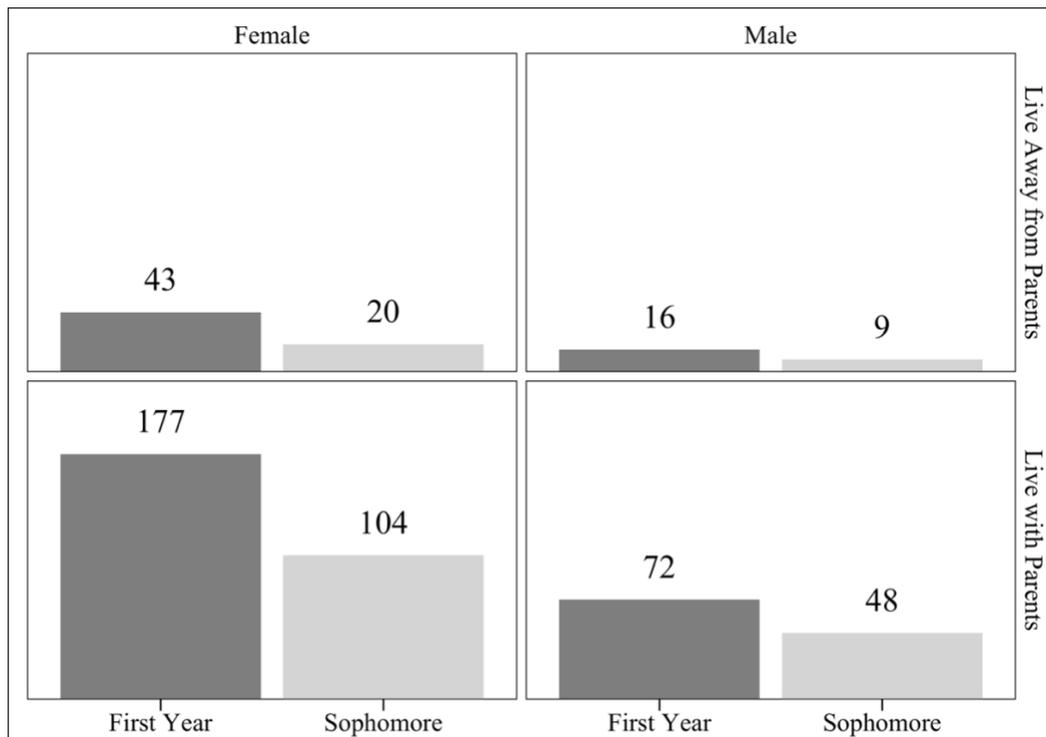
Variables	1	2	3	4	5
1. Perceived Stress	-				
2. Emotion Regulation	-.57***	-			
3. Perseverance of Effort	-.23***	.30***	-		
4. Consistency of Interest	-.43***	.42***	.15***	-	
5. Academic Motivation	-.20***	.30***	.51***	.24***	-
Mean	2.73	3.58	3.57	3.14	3.35
SD	.59	.64	.68	.70	.43
N	489	488	490	490	491
Skewness	-.931	-.212	.004	.085	-.502
Kurtosis	2.852	-.634	-.464	.004	.075
VIF	1.803	1.902	1.191	1.374	
Tolerance	.554	.526	.839	.728	

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$

## R Graphs

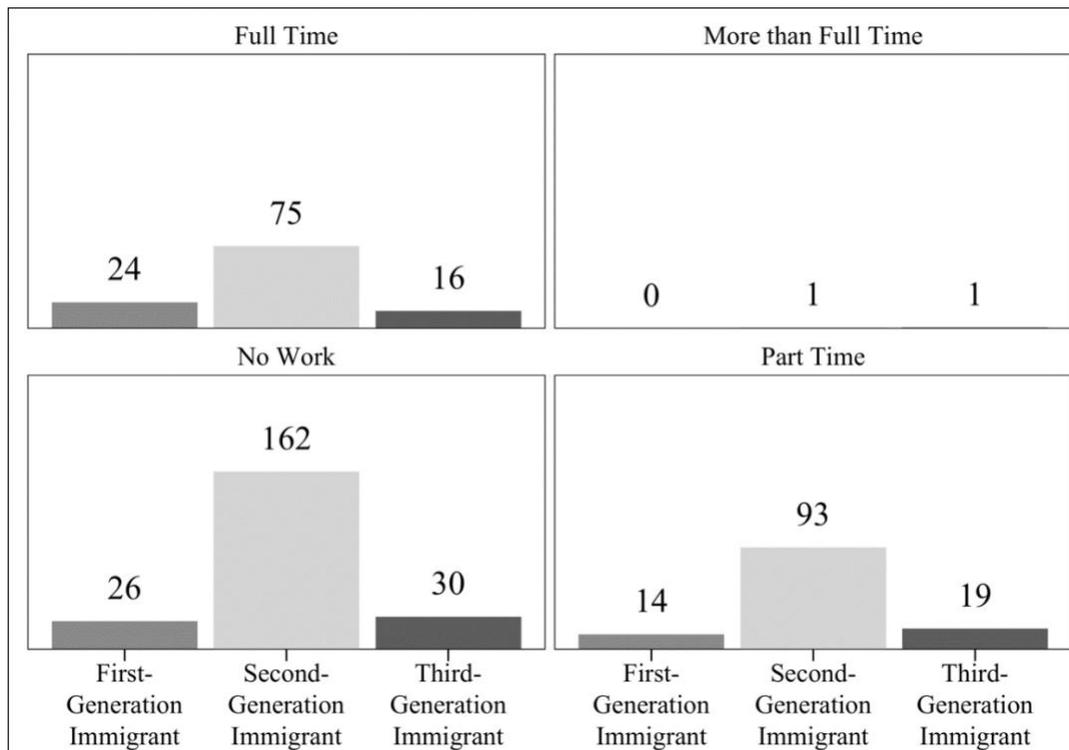
The first purpose of this study was to understand variability within this sample of Hispanic FGCS. R was used to visualize differences among Hispanic FGCS based on demographic factors. Specifically, students' gender, year in school, living arrangement were examined together as shown in Figure 1. Of the total number of students who reported on all of these variables ( $n = 489$ ), 26% of first-year female students lived with their parents ( $n = 177$ ), and 9% of first-year female students lived away from their parents ( $n = 43$ ). Fifteen percent of first-year male students lived with their parents ( $n = 72$ ) compared to 10% of second-year male students ( $n = 48$ ). Fifty-one percent of first-year students ( $n = 249$ ) lived with their parents compared to 31% of second-year students ( $n = 152$ ). Five percent of male students ( $n = 25$ ) lived away from their parents compared to 13% of female students ( $n = 63$ ).

**Figure 3. Hispanic FGCS Categorized Based on Gender, Year in School, and Living Arrangement**



Students were examined based on immigrant generation status and their working hours as shown in Figure 2. There were total of 64 first-generation immigrants, 330 second-generation immigrants, and 65 third-generation immigrants. There were 218 students not working, 126 working part time, 115 working full time, and 2 working more than full time. The first-generation immigrant students varied the most in their work hours. Out of all first-generation immigrant students, 40% did not work ( $N = 26$ ), 21% of them worked part time ( $N = 14$ ), and 38% of them worked full time ( $N = 24$ ). Out of all second-generation immigrant students, 49% did not work ( $N = 162$ ), 28% worked part time ( $N = 93$ ), 23% of them worked full time ( $N = 75$ ), and less than 0.5% worked more than full time ( $N = 1$ ). Out of all third-generation immigrant students, 46% did not work ( $N = 30$ ), 29% worked part time ( $N = 19$ ), 25% worked full time ( $N = 16$ ), and less than 0.5% worked more than full time ( $N = 1$ ).

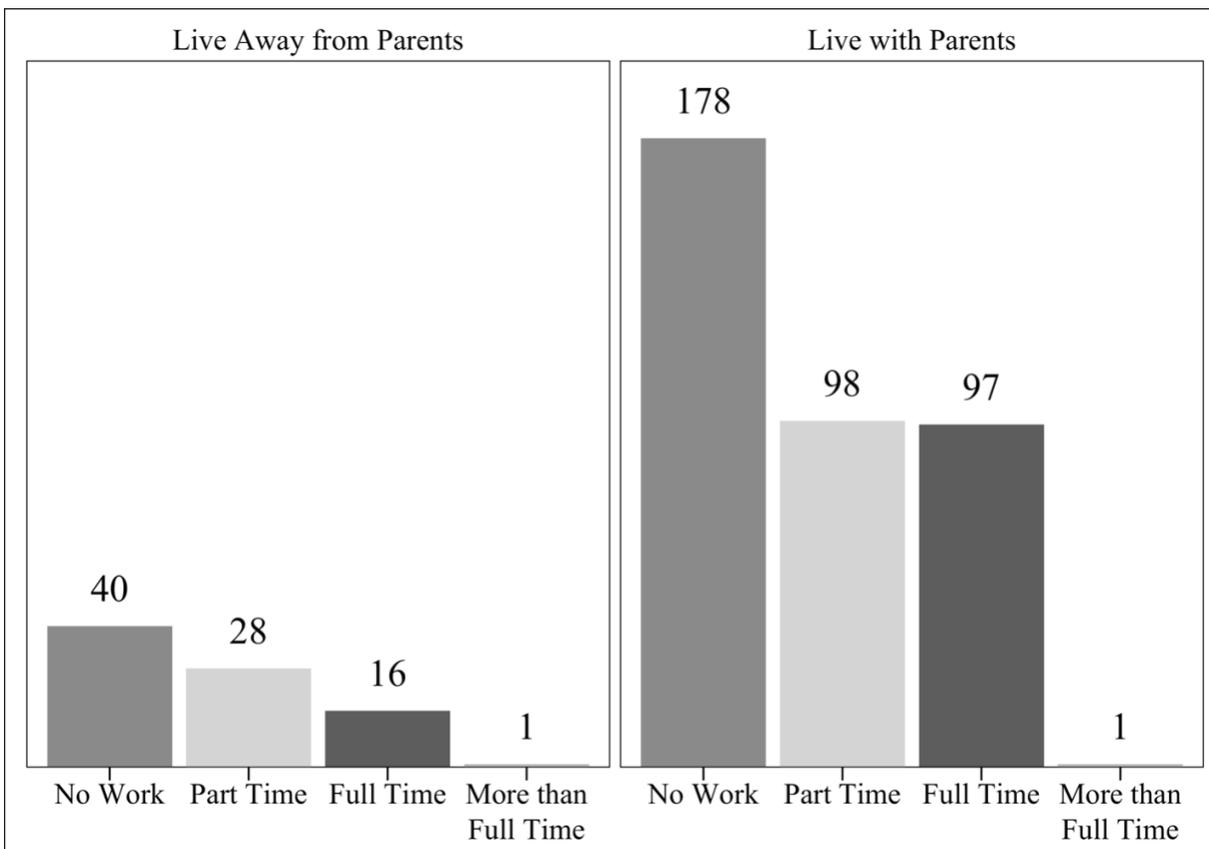
**Figure 4. Hispanic FGCS Categorized Based on Working Hours and Immigrant Generation Status**



*Note.* First-generation immigrant is when students and parents are foreign born. Second-generation immigrant is when students are born in U.S., but parents are foreign born. Third-generation immigrant is when both students and parents are born in U.S.

Students' living arrangements were examined based on their working hours as shown in Figure 3. There were total of 85 students living away from parents and 374 students living with their parents. Of the students living away from parents, 47% did not work ( $n = 40$ ), 33% worked part time ( $n = 28$ ), 19% worked full time ( $n = 16$ ), and less than 0.5% worked more than full time ( $n = 1$ ). Out of all students living with parents, 48% did not work ( $n = 178$ ), 26% worked part time ( $n = 98$ ), 26% worked full time ( $n = 97$ ), and less than 0.5% worked more than full time ( $n = 1$ ).

**Figure 5. Hispanic FGCS Categorized Based on Working Hours and Living Arrangement**



## Demographic Differences in Mean Levels of Focal Variables

ANOVAs and *t*-Tests were performed in SPSS to examine whether levels of academic motivation, perceived stress, emotion regulation, perseverance of effort, and consistency of interest significantly varied across the demographic factors of year in school, gender, living arrangement, family immigrant background, and working hours.

An independent samples *t*-Test indicated that first-year students had significantly higher levels of academic motivation,  $t(489) = 2.20, p = .03$ , higher levels of perseverance of effort,  $t(488) = 2.40, p = .03$ , and higher levels of consistency of interest,  $t(488) = 2.13, p = .02$ , than second-year students. There was no significant difference in perceived stress and emotion regulation based on year in school. Female students reported significantly higher levels of academic motivation,  $t(489) = -4.46, p < .001$ , higher levels of perceived stress,  $t(487) = -3.03, p = .003$ , lower levels of emotion regulation,  $t(486) = 3.90, p < .001$ , and higher levels of perseverance of effort,  $t(488) = -2.37, p = .02$ , than male students. There was no significant difference in consistency of interest based on gender. Students who lived away from home reported higher levels of perceived stress,  $t(485) = -2.27, p = .023$ , and lower levels of perseverance of effort,  $t(486) = 2.05, p = .041$ , than students who lived at home with parents. There were no significant differences in academic motivation, emotion regulation, and consistency of interest based on students living arrangements.

A one-way ANOVA indicated a significant difference in consistency of interest based on students' family immigrant status ( $F(2, 487) = 8.15, p < .001$ ). Tukey's HSD tests indicated that the mean value of consistency of interest among first-generation immigrant students was significantly different from second-generation immigrant students ( $p < .001, \eta^2 = .032$ ). First-generation immigrant students (mean = 3.42) reported greater levels of consistency of interest

compared to second-generation immigrant students (mean = 3.06). There was no significant difference between third-generation immigrant students and first-generation or second-generation immigrant students in consistency of interest. There was no difference in academic motivation, perceived stress, emotion regulation, and perseverance of effort based on students' immigrant status. There was no significant difference in academic motivation based on students' working hours (0-20 hours, 20-40 hours, +40 hours).

Regression analyses were conducted with perceived stress, emotion regulation, perseverance of effort, consistency of interest, and potential covariates (year, gender, living arrangement, immigrant generational status, and working hours) as predictors of academic motivation to identify potential covariates to be included in focal analyses. Gender was the only covariate that was significantly associated with academic motivation,  $B = .180$ ,  $\beta = .188$ ,  $p < .001$ . Therefore, gender was retained as control variable in focal analyses.

### **Focal Analyses**

The first multiple regression model in SPSS tested for the main effects of perceived stress, emotion regulation, perseverance of effort, and consistency of interest on academic motivation with gender included as a control variable (Block 1). The results shown in Table 2 indicated that the model explained 32.3% of variance in academic motivation,  $R^2 = .323$ ,  $F(5, 476) = 46.99$ ,  $p < .001$ . Emotion regulation,  $\beta = .20$ ,  $p < .001$ , perseverance of effort,  $\beta = .42$ ,  $p < .001$ , consistency of interest,  $\beta = .14$ ,  $p < .001$ , and gender,  $\beta = .18$ ,  $p < .001$ , were all significantly associated with academic motivation. However, perceived stress was not significantly associated with academic motivation,  $\beta = .08$ ,  $p = .137$ .

**Table 2. Summary of Hierarchical Multiple Regression Analysis Predicting Academic Motivation from Perceived Stress, Emotion Regulation, Perseverance of Effort, Consistency of Interest, and Interaction Terms**

Blocks	Variable	B	$\beta$	SE	<i>p</i>	<i>R</i> <sup>2</sup>	<i>F</i>
1	(Constant)	3.23	.03		.000	.323	46.99***
	Perceived Stress	.05	.08	.04	.137		
	Emotion Regulation	.13***	.20***	.03	< .001		
	Perseverance of Effort	.27***	.42***	.03	< .001		
	Consistency of Interest	.09***	.14***	.03	< .001		
	Gender	.17***	.18***	.04	< .001		
2a	Perceived Stress x Emotion Regulation	-.05	-.05	.04	.217	.002	39.46***
2b	Perceived Stress x Perseverance of Effort	.05	.05	.04	.190	.002	39.51***
2c	Perceived Stress x Consistency of Interest	-.007	-.006	.04	.869	.001	39.09***

*Note.* a, b, and c represent different models; \**p* < 0.05; \*\**p* < 0.01; \*\*\**p* < 0.001

Hierarchical multiple regressions were performed in SPSS with interaction terms included as second step in three separate models. In the first model, the second step included the interaction term of perceived stress and emotion regulation (Block 2a). Adding the interaction term of perceived stress and emotion regulation to the model did not provide additional significant explanation of the variability in academic motivation,  $R^2\Delta = .002$ ,  $F\Delta(1) = 1.53$ ,  $p = .271$ . The interaction term of perceived stress and emotion regulation was not significantly

associated with academic motivation,  $\beta = -.05, p = .217$ . This indicates emotion regulation did not moderate the association between perceived stress and academic motivation.

In the second model, the second step included the interaction term of perceived stress and perseverance of effort (Block 2b). Adding the interaction term of perceived stress and perseverance of effort to the model did not provide additional significant explanation of the variability in academic motivation,  $R^2\Delta = .002, F\Delta (1) = 1.58, p = .210$ . The interaction term of perceived stress and perseverance of effort was not significantly associated with academic motivation,  $\beta = .05, p = .190$ . This indicates perseverance of effort did not moderate the association between perceived stress and academic motivation.

In the third model, the second step the second step in regression (Block 2c). Adding the interaction term of perceived stress and consistency of interest to the model did not provide additional significant explanation of the variability in academic motivation,  $R^2\Delta < .001, F\Delta (1) = .03, p = .869$ . The interaction term of perceived stress and consistency of interest was not significantly associated with academic motivation,  $\beta = -.17, p = .869$ . This indicates consistency of interest did not moderate the association between perceived stress and academic motivation.

## CHAPTER V: DISCUSSION

There were three purposes in this study. The first was to understand the variations in Hispanic FGCS' academic motivation, perceived stress, emotion regulation, perseverance of effort, and consistency of interest based on demographic factors, such as year in school, gender, living arrangement, immigrant generational status, and working hours. The figures generated using R showed half of the students in this sample reported working either part-time or full-time across living arrangements and immigrant generation status. More first-year students reported living with their parents than second-year students (51% vs. 31%). There were more first-year female students who reported they lived with their parents than those who lived away from their parents (26% vs 9%). ANOVAs and t-Tests indicated that in this sample, first-year students had higher levels of academic motivation, perseverance of effort, and consistency of interest than second year students. Female students reported greater levels of academic motivation, perceived stress, and perseverance of effort than male students. Students living away from parents had higher perceived stress and lower levels of perseverance of effort than students living with parents. First-generation immigrant students had higher levels of consistency of interest than second-generation immigrant students. Students did not vary in any of the key variables based on working hours.

The second purpose of this study was to examine the main effects of perceived stress, emotion regulation, perseverance of effort, and consistency of interest on academic motivation among first-year and second-year Hispanic FGCS. Multiple regression indicated higher levels of emotion regulation, higher levels of perseverance of effort, and higher levels of consistency of interest were all associated with higher levels of academic motivation. Perceived stress was not significantly associated with academic motivation.

The third purpose of this study was to examine moderating roles of emotion regulation, perseverance of effort, and consistency of interest on the association between perceived stress and academic motivation in first-year and second-year Hispanic FGCS. Hierarchical multiple regressions indicated the interaction terms of perceived stress and emotion regulation, perceived stress and perseverance of effort, and perceived stress and consistency of interest was not significantly associated with academic motivation. This indicated that emotion regulation and the two grit components did not moderate the association between perceived stress and academic motivation.

### **Effects of Perceived Stress, Emotion Regulation, Perseverance of Effort, and Consistency of Interest on Academic Motivation**

Results from this study are best understood with reference to the social and historical backdrop of the region of the United States in which participants attended school. The participants in this study attended a Hispanic Serving Institution in southern California, and their experiences in college might not be generalizable to Hispanic students in other parts of U.S. Historically, California was one of the states that belonged to Mexico until the Treaty of Guadalupe Hidalgo which ended the Mexican American War that lasted from 1846 to 1848 (Levie, 1979). Mexicans who were already residing in California were given the choice to remain and become U.S. citizens or return to Mexico (Levie, 1979). According to the U.S. Department of the Interior, approximately 115,000 Mexicans became U.S. citizens, and the Hispanic community has grown since then. In 2022, Hispanics are the largest ethnic population in the state of California (39%; Johnson et al., 2022). The Hispanic FGCS in this study lived and attended college in an area with a long history of Mexican residency and strong Mexican culture. Students in this study lived in majority Hispanic communities in which residents shared cultural values. Thus, they might have felt a greater burden of meeting both school and family demands

because of stronger expectation of familismo within their communities as compared with Hispanic students who attend Predominantly White Institutions. However, attending an institution that culturally matches students' personal and family values can increase students' feelings of belonging and have benefits to students (Stephens, 2012). Even though Hispanic FGCS receive lower levels of information and academic support from their parents and struggle to balance expectations from school and family, attending a Hispanic Serving Institution might be a protective factor for Hispanic FGCS in that it would weaken or eliminate associations between perceived stress and academic motivation. Being surrounded by other students in similar situations might be a source of comfort and connection that helps with Hispanic FGCS adjustment in college.

The first hypothesis predicting students with higher levels of perceived stress will have lower levels of academic motivation was not supported. A bivariate correlation indicated there was a significant negative correlation between perceived stress and academic motivation, and the scatterplot (Figure B1) indicated a linear relationship between these two variables. However, the regression analyses indicated that perceived stress was not significantly associated with academic motivation over and above the effects of emotion regulation, perseverance of effort, and consistency of interest. This finding is consistent with Ahmad et al.'s (2021) study that also found no significant direct effect of perceived stress on academic motivation in Malaysian students. In the current study, shared variance among perceived, emotion regulation, perseverance of effort, and consistency of interest could have contributed to the non-significant main effect of perceived stress on academic motivation. For example, Hispanic FGCS in this study were surrounded by students from similar cultural backgrounds, which could have supported their ability to regulate emotions. Perceived stress and emotion regulation were

moderately negatively correlated. The proportion of variance in academic motivation explained by perceived stress might be overlapped with emotion regulation. When multiple regression analyses were conducted with four independent variables in the model, perceived stress likely accounted for small proportion of variance in academic motivation. Another reason perceived stress might not have been associated with academic motivation is because the questionnaire used in this study to measure perceived stress was too vague. Perceived stress is a result of demands outweighing personal resources and coping strategies (Folkman & Lazarus, 1985), and Hispanic FGCS experience stress across numerous aspects of their lives. Perhaps when examining Hispanic FGCS, perceptions of stress should be categorized based on types of stress, such as financial stress, academic stress, and family stress, because there might be different effects on academic motivation based on the types of stress experienced.

Results from this study supported the second hypothesis predicting students with lower levels of emotion regulation would have lower levels of academic motivation. This dissertation was the first known study to examine the direct association between emotion regulation and academic motivation. Benita (2020) suggested that based on the growing literature framed by SDT, there was reason to suspect that levels of motivation might be influenced by the individuals' ability to regulate emotions. The finding in this study supports the importance of understanding the role of emotion regulation in relation to academic motivation for Hispanic FGCS. Motivation has been identified as an important factor in predicting college success (Krogstad, 2020). Students who are able to regulate their emotions as they are managing the many new experiences encountered in college that evoke positive and negative emotions might be able to better retain their academic motivation compared with students who have less control over how their emotions are processed. Interestingly, the Hispanic FGCS in this sample did not

significantly vary in their levels of emotion regulation based on the demographic factors. Levels of emotion regulation might not have varied because first- and second-year students are adjusting to the demands of academic and social pressures on- and off-campus. They are in a stage of opportunity to develop their skills to regulate their emotions.

The third hypothesis was that students with lower levels of perseverance of effort would have lower levels of academic motivation. Results indicated that there was a direct positive association between perseverance of effort and academic motivation. While there is no other study known to have examined the direct effect of perseverance of effort on academic motivation, this finding is consistent with Wolters and Hussain's (2015) study that found a direct positive effect of perseverance of effort on achievement motivation. It is not surprising that students who continue to work hard despite the challenges inherent to college enrollment have higher levels of academic motivation. For Hispanic FGCS, the opportunity to pursue higher education can sometimes lead to a sense of achievement guilt from feeling like they have more privilege than their parents and/or siblings, becoming culturally different from family, and feeling pressure to not disappoint their families that have invested in students despite a lack of financial resources (Covarrubias et al., 2020). The internal struggles that Hispanic FGCS experience might make them waiver in their decision to pursue postsecondary education, especially when parents are less supportive of college attendance. However, when parents are supportive of college education, students might be better able to persevere. Hispanic FGCS from this study who lived with their parents had higher levels of perseverance of effort than students living away from their parents. This finding suggests that students who are interacting daily with family are more able to persist academically. Due to the strong value of familismo in many Hispanic families, students who live at home might feel less guilt because they are able to spend

more time with family and receive emotional support during stressful moments (Vasquez-Salgado et al., 2015). Hispanic FGCS are juggling expectations from family and school that can impact perseverance when challenges are presented, which might then impact their academic motivation. Hispanic FGCS need institutional support that recognizes the additional barriers these students encounter while enrolled in college. Further research studies should explore the role of family support in relation to academic perseverance in Hispanic FGCS.

The fourth hypothesis was supported, in that students with lower levels of consistency of interest had lower levels of academic motivation. This finding was surprising, as many researchers have reported that consistency of interest was not related to academic performances (Cho & Serrano, 2020; Credé et al., 2017; Mason, 2018; Werner et al., 2019; Wolters & Hussain, 2015). However, consistency of interest might be an important construct to consider when examining academic motivation in Hispanic FGCS. This was the first known study to examine the direct effect of consistency of interest on academic motivation. Because of the additional stressors that Hispanic FGCS experience in attempt to balance between the demands of school and family, sticking to the same goal might be important in the progression towards college completion. The extent to which college students hold onto the same interests might vary across students and over time. In the current sample, first-year Hispanic FGCS reported significantly greater levels of consistency of interest than second-year students. Suggesting that while some students might have attended college with a decided-upon career path, students might change their majors after starting college and exploring the various majors offered in higher education. To fully understand the effects of consistency of interest on academic motivation, further studies should also examine third-year students and beyond to consider the variability in consistency of interest among Hispanic FGCS.

## **Emotion Regulation, Perseverance of Effort, and Consistency of Interest as Moderators of the Association Between Perceived Stress and Academic Motivation**

The hypothesis predicting stronger association between perceived stress and academic motivation when Hispanic FGCS were lower in levels of emotion regulation was not supported. The interaction term of perceived stress and emotion regulation was not associated with academic motivation. This study was the first to examine the moderating role of emotion regulation on the association between perceived stress and academic motivation. Stressful events evoke emotions that are appraised by the individual through coping strategies (Lazarus & Folkman, 1984). This study conceptualized emotion regulation as an emotion-focused coping strategy that would help in the process of managing stressors to weaken their impact on academic motivation. However, this was not the case. The hypothesis predicting a stronger association between perceived stress and academic motivation when Hispanic FGCS were lower in levels of perseverance of effort was also not supported. Finally, the hypothesis predicting a stronger association between perceived stress and academic motivation when Hispanic FGCS were lower in levels of consistency of interest was not supported. Individuals engage in problem focused coping strategies to manage the emotions elicited from stressors (Lazarus & Folkman, 1984). Grit was considered to be a problem focused coping strategy that Hispanic FGCS might use to manage their stressful experiences. However, neither component of grit moderated the association between perceived stress and academic motivation.

The lack of significant interaction effects might be due to the strong intercorrelations among perceived stress, emotion regulation, perseverance of effort, and consistency of interest. Including the main effects of all three moderator variables in the multiple regression analyses testing for interaction effects could have prevented the emergence of moderating effects that might have shown up if only one of the three moderators was included in analyses at a time.

Another reason for the lack of moderator effects might be insufficient sample size. Estimating significant interaction effects requires a much larger sample to have enough power – from double to 16 times the sample size required for main effects (Gelman, 2018; Wahlsten, 1991). Future studies should consider conducting tests of moderation such as those conducted in this study using a larger sample size.

### **Strengths and Limitations**

This dissertation was the first study to investigate the direct effects of perceived stress, emotion regulation, perseverance of effort, and consistency of interest on academic motivation. This study aimed to fill a gap in the literature focused on understanding why Hispanic students have low postsecondary retention rates and experience high stress levels (Krogstad, 2020). Academic motivation is considered to be an important factor that predicts college success (Próspero et al., 2012). However, no previous study has examined the direct effects of perceived stress on academic motivation within any group of students including Hispanic FGCS. Examining the manner in which perceived stress, emotion regulation, perseverance of effort, and consistency of interest relate to academic motivation among Hispanic FGCS advances understanding regarding ways to support college success within this group of students.

This study was not without limitations. The sample was restricted to first- and second-year students to decrease potential bias in the data related to the high dropout rates of Hispanic FGCS. However, the second-year students in this study were more likely than the first-year students to represent the experiences of students who persisted and remained enrolled in college. The participants were recruited from a 4-year institution located in southern California. More Hispanic students attend 2-year institutions (28%) than 4-year institutions (20%) in 2018 (PNPI, 2020). In addition, participants were recruited from a specific college course, and students who

did not participate in the study were required to submit an alternative written assignment. Students who were disengaged from the learning experience might not have taken the questionnaires seriously, which would result in more errors that prevented detection of interaction effects. All of these factors threaten the external validity of the findings, as the results might not be generalizable to students who are more likely to dropout, attend 2-year institutions, attend 4-year institutions located in other regions of the U.S., or volunteer to participate in research. Therefore, it would be interesting for further studies to examine the role of perceived stress, emotion regulation, and the two components of grit on academic motivation among students attending 2-year institutions and 4-year institutions located outside of California and within samples of students who volunteer to participate to see whether the results might be different than those reported here.

Another limitation is that the use of regression analyses assumes that variables are measured without error. However, this assumption is not true, and therefore the validity of the findings from multiple regression are always limited (Shadish et al., 2002). Reliance on self-report data was also a limitation to this study. Also, biases such as social desirability (when participants under- or over-report to be considered socially acceptable) can increase error in measurement. For example, participants were asked to rate how much they agreed with the statement “grades are important to me.” The participants were college students answering the question as part of class assignment, and that could have led to them responding in ways that were perceived as desirable by the instructor.

### **Conclusion and Implications for Practice**

The current study extends the literature on Hispanic FGCS by examining the roles of perceived stress, emotion regulation, perseverance of effort, consistency of interest, in relation to

academic motivation. Emotion regulation and the components of grit were significantly related to the levels of academic motivation in Hispanic FGCS. Students with greater ability to regulate their emotions, persist through difficulty, and maintain their commitment had higher levels of academic motivation. These findings indicate that introducing interventions at Hispanic Serving Institutions focused on increasing levels of emotion regulation and grit might be helpful for first-year and second-year Hispanic FGCS in terms of increasing their levels of academic motivation. Such interventions might focus on supporting Hispanic FGCS ability to regulate positive and negative emotions, teaching coping strategies to help them persist through challenging times, helping students realize they are able to change outcomes with effort, and developing actionable goals to maintain their long-term passion might all be effective strategies for increasing academic motivation – which is known to be associated with academic success.

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## APPENDIX A: QUESTIONNAIRES

### **A1. Academic Motivation**

How much do you agree with the statements? (Strongly disagree = 1 to Strongly agree = 4)

1. I try hard in school.
2. Grades are very important to me.
3. I usually finish my homework on time.
4. Education is important to me.
5. In general, I like school.

### **A2. Perceived Stress Scale**

In the last month, how often have you... (Never = 1 to Very often = 4 )

1. Been upset because of something that happened unexpectedly?
2. Felt that you were unable to control the important things in your life?
3. Felt nervous and “stressed”?
4. Felt confident about your ability to handle your personal problems? (RC)
5. Felt that things were going your way? (RC)
6. Found that you could not cope with all the things that you had to do?
7. Been able to control irritations in your life? (RC)
8. Felt that you were on top of things? (RC)
9. Been angered because of things that were outside of your control?
10. Felt difficulties were piling up so high you could not overcome them?

### **A3. Grit: Perseverance and Passion for Long-Term Goals**

Here are a number of statements that may or may not apply to you. For the most accurate score, when responding, think of how you compare to most people -- not just the people you know well, but most people in the world. There are no right or wrong answers.

(Not like me at all = 1 to Very much like me = 5)

1. New ideas and projects sometimes distract me from previous ones. (RC)
2. Setbacks don't discourage me.
3. I have been obsessed with a certain idea or project for a short time but later lost interest.

(RC)

4. I am a hard worker.
5. I often set a goal but later choose to pursue a different one. (RC)
6. I have difficulty maintaining my focus on projects that take more than a few months to complete. (RC)
7. I finish whatever I begin.
8. I am diligent.

*Perseverance of Effort Subscale: 2, 4, 7, 8*

*Consistency of Interest: 1, 3, 5, 6*

### **A4. Difficulties in Emotion Regulation Scale (DERS)**

How often does each item apply to you? (Almost never = 1 to Almost always =5)

1. When I'm upset, I feel guilty for feeling that way
2. When I'm upset, I feel ashamed with myself for feeling that way
3. When I'm upset, I become embarrassed for feeling that way
4. When I'm upset, I become angry with myself for feeling that way

5. When I'm upset, I become irritated with myself for feeling that way
6. When I'm upset, I feel like I am weak
7. When I'm upset, I have difficulty concentrating
8. When I'm upset, I have difficulty focusing on other things
9. When I'm upset, I have difficulty getting work done
10. When I'm upset, I have difficulty thinking about anything else
11. When I'm upset, I can still get things done (RC)
12. When I'm upset, I lose control over my behaviors
13. When I'm upset, I have difficulty controlling my behaviors
14. When I'm upset, I become out of control
15. When I'm upset, I feel out of control
16. I experience my emotions as overwhelming and out of control
17. When I'm upset, I feel like I can remain in control of my behaviors (RC)
18. I am attentive to my feelings (RC)
19. I pay attention to how I feel (RC)
20. When I'm upset, I acknowledge my emotions (RC)
21. When I'm upset, I believe that my feelings are valid and important (RC)
22. I care about what I am feeling (RC)
23. When I'm upset, I take time to figure out what I'm really feeling (RC)
24. When I'm upset, I believe that I'll end up feeling very depressed
25. When I'm upset, I believe I will remain that way for a long time
26. When I'm upset, I believe that wallowing in it is all I can do
27. When I'm upset, it takes me a long time to feel better

28. When I'm upset, I believe that there is nothing I can do to make myself feel better
29. When I'm upset, I know I can find a way to eventually feel better (RC)
30. When I'm upset, my emotions feel overwhelming
31. When I'm upset, I start to feel very bad about myself
32. I have difficulty making sense out of my feelings
33. I have no idea how I am feeling
34. I am confused about how I feel
35. I know exactly how I am feeling (RC)
36. I am clear about my feelings (RC)

APPENDIX B: TESTS OF ASSUMPTION FOR MULTIPLE REGRESSION

Figure B1. Linear Relationship Between Perceived Stress and Academic Motivation

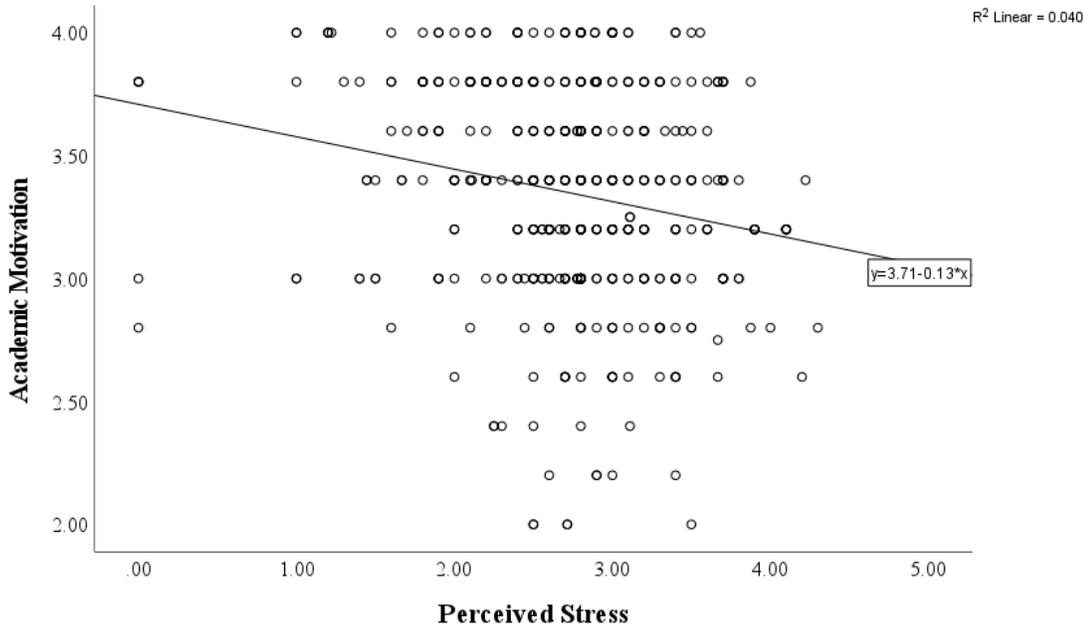
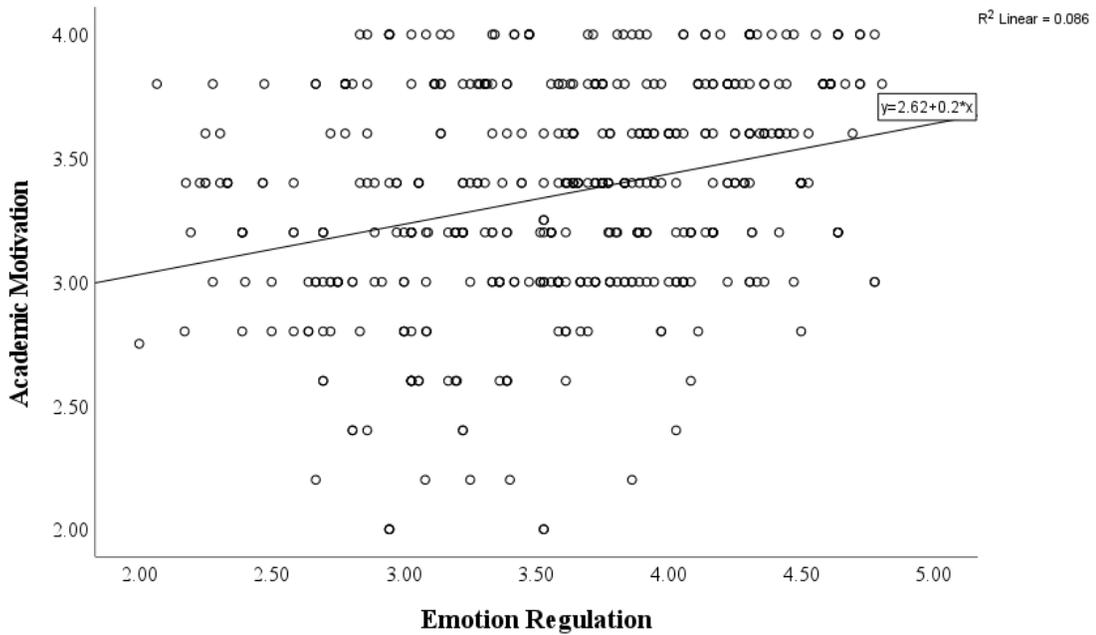
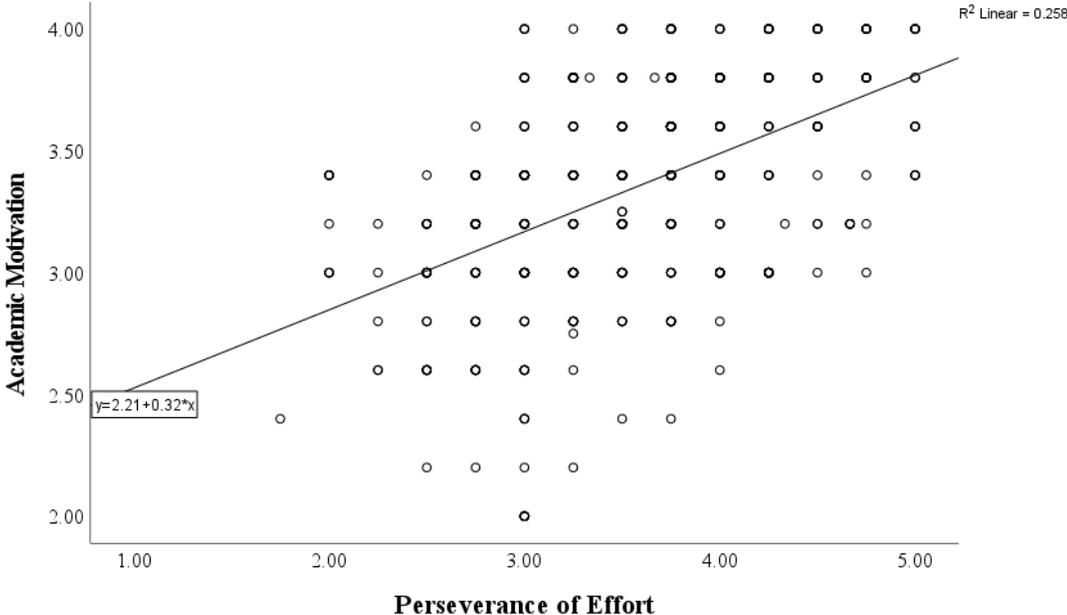


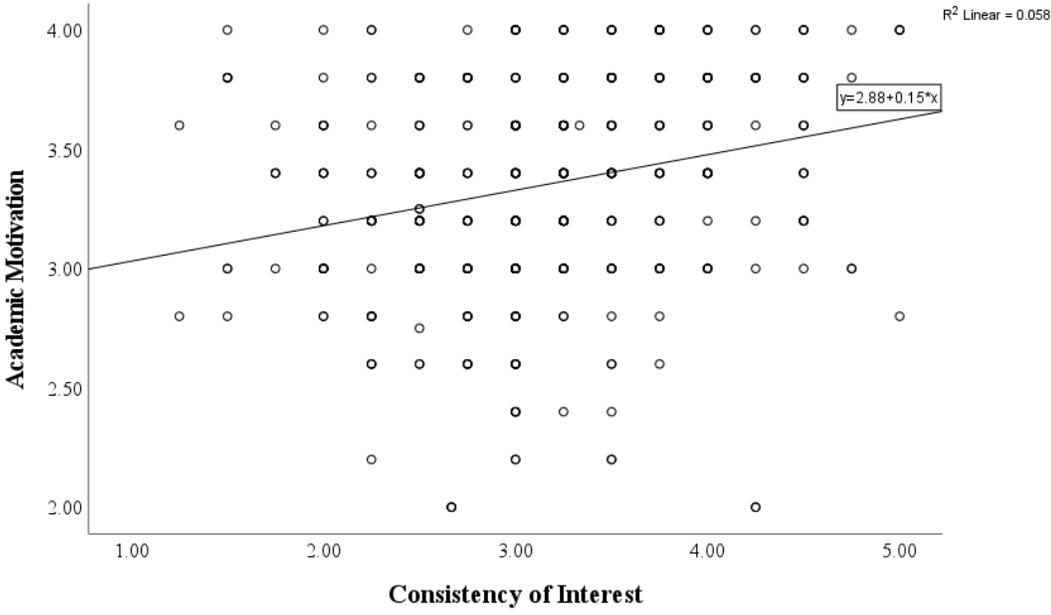
Figure B2. Linear Relationship Between Emotion Regulation and Academic Motivation



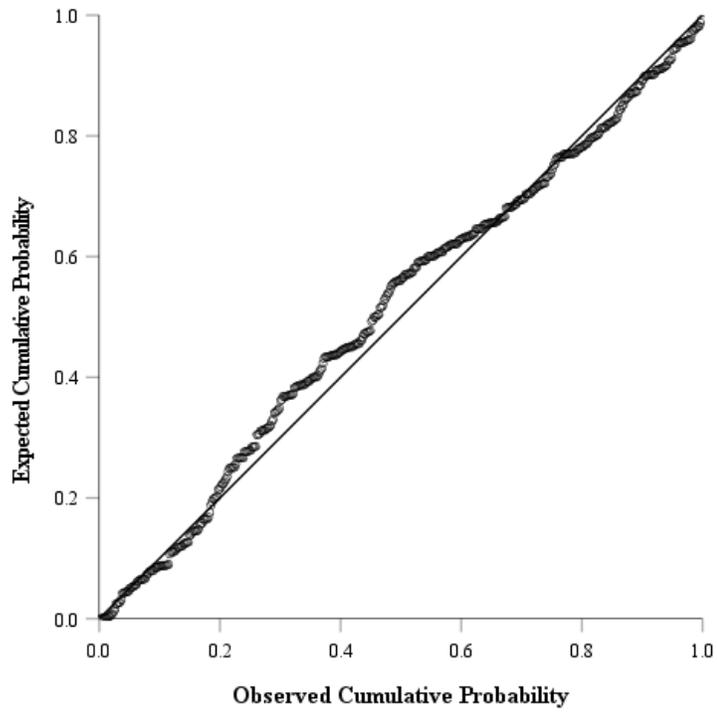
**Figure B3. Linear Relationship Between Perseverance of Effort and Academic Motivation**



**Figure B4. Linear Relationship Between Consistency of Interest and Academic Motivation**



**Figure B5. Probability Plot to Determine Normal Distribution of the Residuals**



**Figure B6. Scatterplot of Standardized Predictors and Standardized Residuals to Determine Homoscedasticity**

