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Understanding Impostor Phenomena in Hispanic Students from Three Different Learning Environments

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Abstract

Hispanic college student retention and dropout rates are regarded as social and economic crises in the United States. Research studies with minority students suggest Hispanic students may feel out of place. Impostor phenomenon (IP) is a psychological pattern involving feeling like a fraud that may explain their experience. Several studies with minority students suggest IP and learning environment (LE) may be correlated. Other minority student studies indicate an association between ethnic identity (EI) and IP. The purpose of this quantitative correlational study was to examine the relationship between IP, EI, and LE in a Hispanic university student population. The theoretical basis for this study was grounded in the social identity theory (SIT) and self-categorization theory (SCT). According to the SIT and SCT, individuals can develop 2 principle identities: a personal self and a collective self. A descriptive between-subjects design was used to compare 3 independent samples of 90 Hispanic college students recruited from a Hispanic serving institution (HSI), a primarily White learning institution (PWI), and an online learning (OL) institution. Participants completed the Clance Impostor Phenomenon Scale (CIPS), the Social and Personal Identities Scale (SIPI), and a demographic survey. A 3-step hierarchical multiple regression analysis revealed that LE and IP were unrelated at all levels of EI. Social change implications of this study include educators having a better understanding of Hispanic college student experience in a variety of LEs. Identifying factors that relate to or negate success can help to better inform the development of resources that aid Hispanic college students to improve outcomes.

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Dedication

I dedicate the completion of this research to my amazingly supportive, sacrificing, patient, and understanding husband Rev. Dr. Gregory P. Seltz and daughter (soon to be PhD) Devin Marie Seltz. I could never have accomplished any of my academic goals without you both encouraging me and supporting me through each term year after year. I also dedicate this work to my mother Norma C. Uranga and maternal grandparents, Charles V. Uranga and Minerva C. Uranga who attended Hispanic segregated schools and never lost the dream or desire to pursue, obtain, and serve higher education. You all inspired me to reach higher. Last, I dedicate this research to honor the memory of my beloved daddy, Elijio R. Hernandez, who was the first member of his family to earn a college degree at a previously white students only college on a football scholarship and who was the first Hispanic football captain in the school's history. He dedicated his life to teaching and coaching in underprivileged Hispanic schools.

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Chapter 1: Introduction to the Study

The United States (U.S.) leads the world in numbers of college student enrollment (American Enterprise Institute [AEI], 2010; Pew Research Center [PRC], 2013, 2017). However, the U.S. also has the lowest college completion rate in the developed world (Organization for Economic Cooperation and Development [OECD], 2014). White college students traditionally represented the largest college enrollment group until 2012 when Hispanic students surged to the top in numbers of enrollment (PRC, 2013). The increase in Hispanic student enrollment echoes broader demographic shifts that have occurred in the U.S., with Hispanics accounting for a growing share of the nation's overall population. In 2015, Hispanics comprised 17.6% of the total U.S. population and are expected to comprise 24% of the total U.S. population by 2065 (PRC, 2017). Despite high enrollment numbers, Hispanic students lead in terms of annual number of college student dropouts (PRC, 2016).

The National Education Association (NEA, 2015) reported that Hispanics have the highest dropout rates and poorest educational achievement among the three largest ethnic groups (Hispanic, Black, and White). Not only are Hispanics one of the fastest growing groups in the U.S., they also have a higher risk for depressive symptoms, mental health impairment, suicide attempts, and feelings of hopelessness compared with other ethnic groups (Centers for Disease Control and Prevention [CDC], 2011; Wagstaff & Polo, 2012). Psychological and social challenges are known to impede academic achievement (NEA, 2015; Pina & Silverman, 2004). Pina and Silverman (2004) noted that young Hispanics experience higher levels of psychosomatic problems and anxiety

symptoms as they emerge into early young adult college years. Moreover, the social stereotypes applied to this group, such as the false conception that Hispanic students are low achievers, can limit intellectual capabilities and efforts group members are expected to display (Arana, Castaneda-Sound, Blanchard, & Aguilar, 2011; McCleod, 2015). One viable reason Hispanic students may not be succeeding in higher education may have to do with feeling out of place. A concept that captures this feeling is known as the impostor phenomenon (IP). The concept of the IP refers to individuals who are successful according to external standards but have internal self-conceptions involving intellectual phoniness (Clance & Imes, 1978). Even when evidence to the contrary exists, the accomplished individual believes that he or she does not have the intelligence, ability, or talent to succeed.

To date, few studies have explored IP and its associated factors specifically with Hispanic student populations. Peteet, Montgomery, and Weeks (2015) stated that IP had not been studied in a Hispanic sample and should be studied, given the group's unique culture. This current study is necessary for sociopsychological and socioeconomic purposes, given that Hispanics have become the fastest growing minority group (PRC, 2017) and are ranked first in terms of college enrollment and number of college dropouts (Carnevale & Fasules, 2017; The National Research Center on Hispanic Children and Families [NCHCHF], 2018). The NCHCHF (2018) reported substantial labor market inequalities due to lack of postsecondary educational attainment, with an overrepresentation of Hispanics in low-skill occupations that pay less and have higher unemployment rates than other groups.

The information from this research will lead to positive social change by offering additional information to universities and colleges and mental health workers to retain Hispanic students and increase their graduation rates. Educators may also implement changes to improve and support a positive Hispanic student experience. School counselors and advisors may comprehend the unique challenges Hispanic students face and recognize how best to advise and direct them.

In this chapter, a brief background regarding IP in Hispanic college students in different learning environments (LE) will be discussed, followed by the problem under focus, the purpose of the current study, and research questions. Next, the theoretical frameworks social identity theory (SIT) and self-categorization theory (SCT) will be described, followed by the nature of the study, definitions of terms used, assumptions, and scope and delimitations. Chapter 1 will then conclude with a discussion of limitations, its significance, and an overall summary.

Background

Most information regarding IP and minority groups comes from studies that explored IP specifically with African American participants, making it difficult to interpret results or generalize to Hispanic populations. Furthermore, most IP studies were conducted in traditional predominately white institutions (PWIs). Cokely (2013) signaled the importance of studying the experiences of ethnic minority students in diverse LEs since each setting provides specific experiences that may challenge and/or protect minority students. For example, stress that comes with minority status and ethnic stereotypes may be more or less prominent within different LEs. Different LEs may

include PWIs, as well as Hispanic serving institutions (HSIs) or online (OL) learning. Each LE may intentionally or unintentionally afford specific social pressures and protections from social pressures as will be discussed in greater detail in following chapters.

Cokely (2013) said that the tendency for educators and researchers to homogenize the experiences of students of color as incorrect. Cokely (2013) advised that the IP experience is unique for each minority group and should be distinctly studied for greater understanding, meaning that all minority groups are not the same. Each minority group has its own ethnic identity (EI), including needs, concerns, culture, traditions, and norms (Tatum, 1997). Phinney (1996) defined EI as a general phenomenon, "an enduring, fundamental aspect of the self that includes a sense of membership in an ethnic group and the attitudes and feelings associated with that membership" (p. 922). EI appears to be an important issue in higher education in the U.S. with one assumption being that ethnicity will disadvantage students in important ways that are not well understood. A student who identifies with an ethnic group must necessarily impede academic achievement through mechanisms such as stereotype threat or require the student deny or move away from a robust ethnic identification in order to succeed academically (Brouillard & Hartlaub, 2005). The balance-congruity principle posits that if an individual strongly identifies with a group, the attributes associated with the group, including stereotypes, should also be associated with the self (Greenwald et al., 2002).

What has yet to be studied is whether IP is experienced differently by Hispanic students in distinct LEs. Such research is important because IP may threaten academic

decision-making and explain why Hispanic students struggle with success in terms of completing higher learning degrees. Understanding the LE in which Hispanic students may experience fewer IP symptoms merits investigation to increase representation of Hispanics in higher education and scientific literature. Therefore, this quantitative research study sought to distinguish whether Hispanic students in PWIs, HSIs, or OL LEs experience significant differences in IP in accordance with their EI.

Problem Statement

For the first time in U.S. history, college-bound Hispanic students outnumbered White students 69% to 67% in 2012 U.S. Census Bureau data (PRC, 2013). However, the data also suggested that Hispanic students fall behind White students in terms of several crucial higher education factors. For example, young Hispanic college students are less likely than their White counterparts to enroll in a four-year college (56% versus 72%), and they are less likely to attend a selective college, be enrolled in college full-time, and complete a bachelor's degree (National Center for Education Statistics [NCES], 2013). These disparities continue today. A record 3.6 million Hispanics were enrolled in public and private colleges in the U.S. in 2016, up 180% from the 1.3 million who were enrolled in 1999 (PRC, 2017). According to the PRC (2016), 41% of White students attained at least a bachelor's degree or higher, while only 15% of Hispanics attained a four-year college degree, compared with 22% of Blacks and 63% of Asians. Moreover, Hispanic enrollment increased 180% between 1999 and 2016 (PRC, 2017). Although the number of Hispanic students enrolling in college has increased since 1999 and Hispanic drop-out rates have somewhat decreased, retention to degree completion remains a challenge

(PRC, 2017; NCES, 2013). Additionally, graduate education schools in the U.S. also reported exigencies to attract and retain students of color (Carnevale & Fasules, 2017; Cornejo, 2008). Students of color are defined as students of African American, Latin American, Asian American, and Native American heritage (Davidson & Foster, 2001). The specific problem this study is addressing is high dropout rates among Hispanic college students in the U.S.

Potential challenges Hispanic students may have to contend with include discrimination and assumptions involving illegal citizenship as well as additional stigmas and pressures associated with obtaining legal status (Alvarez, 2015; Arana et al., 2011). Stigmas such as social barriers may create a sense of feeling as though one does not belong. Moreover, IP's destructive perceptions may leave successful Hispanic students feeling as though the next time they do, say, or write something, their inadequacies will be revealed. Hispanic college students may arguably be considered successful given the social myths, social and economic pressures, and poorer quality educational platforms they endured to not only graduate high school but graduate with college-level acceptance grade point averages. Carnevale and Fasules (2017) reported that 125,000 Latino (Hispanic) students receive test scores that rank in the top half of the country's high school students' test scores every year. IP feelings involving intellectual incompetence reflect a maladaptive set of cognitions known to be associated with poor psychological distress and psychological functioning (Petee, Brown, Lige, & Lanaway, 2015), anxiety, and depression (Kolligan & Sternberg, 1991; McGregor, Gee, & Posey, 2008).

Peteet et al. (2015) investigated the extent first-generation status, psychological well-being, and EI predicted scores of IP in 161 high-achieving African American (n = 117) and Hispanic (n = 44) university students from a large Midwestern PWI and found that low psychological well-being and low EI were significant predictors of IP. Ewing et al. (1996) found that ethnic/racial identity was not predictive of IP scores. Instead, Ewing et al. found that endorsing an Afrocentric worldview enabled Black students to succeed in a PWI setting. However, high EI endorsement may not abate IP symptoms for all underrepresented minority student groups in every academic setting (Devos & Torres, 2007; Either & Daux, 1990). Devos and Torres (2007) found that the more Hispanic college students identified with their culture, the less they identified with academics in PWIs.

Fraenza (2014) investigated IP in students in traditional and OL educational settings and found that out of a total of 211 students, 165 participants identified themselves as White, making up 76% of the sample; 93 were traditional students, while 72 were OL students. Thirty-six students identified themselves as Black. Of the 36 Black students, five were traditional students, while 31 were from OL programs. Only 10 participants identified themselves as *Other Race*, writing in Creole, Middle Eastern, and Spanish (Fraenza, 2014). It is important to note that less than 8 of the 165 participants reported being Hispanic. This participant sample was not proportionally representative of the U.S. post-secondary national student population. Fraenza (2014) said the majority of students experienced significantly higher IP scores in traditional settings than students in OL settings. OL participants reported feeling freer to be themselves and reported having

lower levels of psychological and psychosocial distress. Students in traditional settings may experience more anxiety compared to OL settings due to more frequent interpersonal contact and opportunities to compare oneself socially and ethnically. Once again, given the extremely small number of Hispanic participants, it is difficult to generalize or interpret these results for a Hispanic population.

Last, ethnic/racial salience is more significant in PWIs for Hispanic, Asian American, multiracial, and Black students (Steck, Heckert, & Heckert, 2003). Racial or ethnic salience refers to the extent to which race or ethnicity is relevant to an individual's self-concept at a particular point in time or a specific situation (Scottham, Sellers, & Nguyên, 2008). Ethnic/racial salience may be more or less important or relevant to students depending upon the LE. According to Tajfel & Turner (1979), if ethnic/racial salience is significant to high-performing Hispanic students in a PWI, the students may become conflicted, choosing to conform to group stereotypes and expectations rather than their own. Once individuals are cognizant of their social identity, that is, aware of the groups to which they belong, their perceptions, inclinations, and behavior can change dramatically (Hogg & Terry, 2000). They become more inclined to embrace beliefs and demonstrate values that epitomize their group (Hogg & Terry, 2000; Tajfel, 1972). Moreover, different environmental settings may contain exclusive social-contextual factors that may encourage more thinking about race and ethnicity, how one responds to it, and feelings of isolation, an emotional and cognitive process believed to influence IP scores (Pauker, Ambady & Apfelbaum, 2010). EI may explain why previous studies on IP in minorities show inconsistent results.

Purpose of the Study

The purpose of this quantitative correlational study is to examine the relationship between IP, EI, and LE among Hispanic university students with GPAs of 3.0 or higher. In this study, the continuous dependent variable (DV) is IP and the independent variable (IV) is LE (PWI, HSI, or OL). IP is measured by the Clarence Impostor Phenomena Scale (CIPS), (Clance, 1985). EI is the second independent variable, examined in this study as the potential moderator of the relationship between LE and IP. EI is measured by the Social and Personal Identities Scale (SIPI), (Nario-Redmond et al., 2004) Scores for IP and EI were obtained from Hispanic university students attending either a traditional PWI, HSI, or OL university.

Research Questions

The following research questions and hypotheses have been derived from the review of existing literature regarding IP, minorities, and LEs.

RQ1: Is there a statistically significant relationship between IP and type of LE among Hispanic college students?

$H_0 1$: There is no statistically significant relationship between IP and type of LE among Hispanic college students.

$H_a 1$: There is a statistically significant relationship between IP and type of LE among Hispanic college students.

RQ2: Does EI significantly moderate the relationship between IP and LE among Hispanic college students?

H_02: EI does not significantly moderate the relationship between IP and LE among Hispanic college students.

H_a2: EI does significantly moderate the relationship between IP and LE among Hispanic college students.

Theoretical Framework

The theoretical bases for this study are SIT and SCT. Because these two theories share many key assumptions, they are often labeled together as the social identity approach or social identity tradition (Sindic & Condor, 2017). According to the SIT and SCT, individuals can develop two principal identities: a personal self, who incorporates unique and distinctive information about themselves, and a collective self, who mirror information about the groups to which they belong (Tajfel, 1972; Turner & Oakes, 1989). Specifically, this collective self or social identity comprises information such as the degree to which individual students feel committed to or attached to a particular group, as well as the status and characteristics of this group (Tajfel & Turner, 1986). Tajfel (1978) through the SIT proposes that individual students act according to their social identity whenever they identify and accept themselves as group members rather than as unique individuals. The SCT involves the nature, antecedents, and consequences of psychological processes of self-categorization. Tajfel (1978) posited that members of devalued groups do not necessarily attempt to challenge existing intergroup hierarchies. In this study, the SIT and SCT provide a framework for studying the relationship between IP and EI in Hispanic students by focusing on how Hispanic students self-identify with their ethnic group and psychological processes of self-categorization.

Nature of the Study

A descriptive between-subjects design was used to compare three independent samples of Hispanic undergraduate college students, one sample from each LE. The quantitative survey method was used to collect data on EI, LE, and IP. Homogenous purposive sampling was used and was limited to Hispanic undergraduate college student populations with 3.0 and above GPAs from three different LEs: one PWI, one HSI, and one OL learning university. The CIPS and the SIPI were used to measure IP and EI, respectively.

Definitions

Ethnic Identity (EI): Refers to the extent to which an individual identifies with their ethnic group (Tajfel, 1979). EI is the moderator in this study.

Hispanic (also Spanish or Latino): People of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish cultures or origins of all races (US Department of Education, 2016).

Impostor Phenomenon (IP): The mindset of individuals who are successful by external standards but have internal dissonance and feelings of intellectual phoniness (Clance & Imes, 1978). IP is the dependent variable in this study.

Learning Environment: Type of environment learners experience. In this study, LE refers specifically to OL learning, traditional PWI, or HSI. The LE is the independent variable in this study.

Salience: The term salient refers to anything (i.e., trait, race, ethnicity) that is prominent and noticeable compared to its surroundings. Salience may influence

perceptions regarding causes of behavior. Salience can affect perceptions of minority and stereotyped group members (Taylor & Fiske, 1978).

Assumptions

It was assumed that self-report instruments used in this study adequately and accurately measured the constructs they purported to measure. Other assumptions were that students participating in the study did so willingly, could read and understand the English language, possessed the cognitive abilities to understand the questions, and responded truthfully. It was assumed that prominence of social identity is context dependent, with the prominence of that identity being dependent upon particular social comparisons available in any given setting. Thus, in the case of EI, when the setting contains a comparable ethnic outgroup, the prominence of the ethnic ingroup increases; when the setting contains the ethnic ingroup alone, the prominence decreases. The last assumption is that when a particular social (ethnic) identity becomes salient or prominent to an individual, self-stereotyping will occur and perceived ingroup homogeneity will increase.

Scope and Delimitations

Limitations, or potential weaknesses in the study, are those factors which restrict findings based on the research design, data collection, or statistical analysis. This study is purposively designed to investigate the influence of LE on IP in Hispanic students with EI as the moderator in three different LEs; therefore, participation was limited to the number of enrolled Hispanic students who were accessible while attending three different

learning institutions in the U.S.. For the purpose of this study, no other minority populations were included.

The research findings involve interpretations of data obtained from a sample representing a particular population. A measure of a psychological construct may or may not have the same or even similar psychometric properties or patterns of relationship with other variables in different populations. Inferences may be valid for one population and not for another. Therefore, findings may not be generalizable to other minority college student groups in or outside of the U.S.A.

Limitations

Quantitative data are information that can be counted, and which are generally collected through surveys. Quantitative data are analyzed using statistical methods. A quantitative approach is best used to answer what, when, and who questions and are not well suited to answer how and why questions. There was no previous data measuring the IP experience in Hispanic students before entering the university or college environment (i.e., high school). Another limitation may be the design of the study, which is not favorable for making conclusions involving causation. The study relies on self-report measures where students have limited response options and might be inclined to base their answers on what they perceive the researcher is looking to discover. Students may also have been reluctant to answer how they truly feel.

In order to avert or minimize potential limitations, the most sensitive standardized assessments were selected for this study. The Clance Impostor Phenomenon Scale (CIPS) was used rather than the Perceived Fraudulence Scale. In 1991, the two assessments were

compared and discriminant validity evidence for IP was provided by comparing the CIPS to measures of depression, self-esteem, social anxiety, and self-monitoring.

Significance

This research aimed to increase educators and academic researchers' understanding of the Hispanic student experience. This research is unique because it focuses on an underresearched area of higher education among a growing student population. The results of this study may lead to positive social change by providing insights into the IP experiences of Hispanic students in various LEs and aid higher learning institutions in terms of understanding the needs of their Hispanic populations. Educational equality and opportunity have long been important social change issues. As there are higher numbers of Hispanic students enrolling in higher learning institutions, supporting their successful degree completion allows for increased diversity in terms of the number of Hispanic students who complete bachelor and graduate degrees, as well as those who may enter professional educational and research career fields. Clearly, this research will not prevent Hispanic college students from experiencing IP; however, the information from this study would assist college and university settings to effectively understand the potential IP experience of Hispanic students who pursue college degrees. The information may influence positive social change by providing additional information about the Hispanic student experience to universities, colleges, and mental health workers to improve student engagement, stress management, and ethnic equality.

Summary

This chapter introduced the topic, purpose, and theoretical framework of this study. The purpose was to address the high dropout rate of Hispanic college students by studying the IP in different LEs with EI as the moderator. The premise of this study is that EI may explain why previous studies on IP in minority college students have yielded inconsistent results.

Chapter 2 will consist of a review of appropriate literature on IP and minority students and unique psychological and sociological challenges that may impede degree attainment. The theoretical foundation for this study will also be presented in greater detail.

Chapter 2: Literature Review

From 1996 to 2016, the Hispanic population increased nearly ninefold from 6.3 million to 56.5 million in the U.S. (PRC, 2017). The Hispanic population is the largest and fastest growing ethnic minority group in the U.S.. According to the U.S. Census Bureau (2017), the Hispanic population is projected to grow to 119 million by 2060. School enrollment for year 2012 revealed that Hispanic students (69%) outnumbered White students (67%) for the first time in recorded history (PRC, 2015). Hispanic students continue to lead in enrollment in both 2-year and 4-year colleges, yet, Hispanic college student dropout rates are a critical national concern, with Hispanics lagging behind other groups in graduate school programs (PRC, 2017). Hispanics remain last among other groups in obtaining a 4-year degree, with only 15% of Hispanics earning a bachelor's degree or higher compared to 22% of Blacks, 63% of Asians, and 41% of Whites (PRC, 2016). The largest Hispanic subgroup, those of Mexican heritage, are also the least educated group, more likely to accept low wages, have limited use of English, and live below the poverty line (Behnke, Gonzalez, & Cox, 2010). Such sociological factors may contribute to Hispanic students failing and feeling out of place in higher educational settings. Common social stereotypes characterizing Hispanics as low achievers can curtail the intellectual capabilities and efforts Hispanic student group members are expected to present (Arana, Castaneda-Sound, Blanchard, & Aguilar, 2011; McCleod, 2015). Aside from conflicting performance expectations, social pressures and stigmas associated with obtaining legal status may additionally contribute to feelings of not belonging. The IP may explain these feelings.

In the first section of this chapter, I introduce the theoretical frameworks, which are the SIT developed by Tajfel and Turner, and SCT developed by Turner and Oakes. Both theories share several key assumptions and are frequently referred to as the social identity approach or the social identity tradition. According to the SIT and SCT, individuals can develop two principle identities: a personal self, who incorporates unique and distinctive information about themselves, and a collective self, who mirrors information about the groups to which they belong (Tajfel, 1972; Turner & Oakes, 1989). The information embraced by the collective self, or social identity, influences the individual's level of commitment and attachment to a group. Additionally, gathered information impacts how the individual perceives group characteristics and group status (Tajfel & Turner, 1986). I also discuss the rationale for choosing these theories for this research. In the second section, I provide a comprehensive review of relevant studies, which are organized in categories, progressing from relevant general premises to the research problem of this study. Three major topics will be discussed: Hispanic students and IP, Hispanic students and LE environment, and Hispanic students and EI. In the third section of this chapter, I explain the gap in the literature based on reviewed literature and need for conducting this study. Finally, I end this chapter with a summary of the themes found in the literature.

Literature Search Strategy

The following databases were accessed to search for relevant studies, dissertations, and articles related to the topic: PsycARTICLES, PsycINFO, SocINDEX, SAGE Journals, Google Scholar, Education Source, Educational Resource Information

Center (ERIC), and ProQuest. The following search terms were used: *Hispanic college students*, *Latino college students*, *Chicano college students*, *dropout*, *impostor syndrome*, *impostor phenomena*, *ethnic identity*, *stereotypes*, *educational environment*, *learning environment*, and *school settings.* These terms were used individually and in combination to yield relevant studies, dissertations, and articles from the previously listed databases. Most of the studies and articles discussed in this chapter were published between 2008 and 2017. A small number of older studies and articles discussed in this chapter are seminal works related to the research topic.

Because there were no studies on IP and Hispanics, information was gleaned from relevant IP studies with minorities, which may or may not have included Hispanics or students. When Hispanics were included as participants, the sample size was small. I looked for consistencies and inconsistencies in research variables and results, and reviewed researchers' recommendations for methodological improvement or expansion in further studies.

Theoretical Framework

The chosen theoretical framework for conducting this study is comprised of two theories: SIT and SCT. The problem that this study will address has several facets possibly explained and understood through the lens of these theories. First, the SIT and SCT assist in understanding possible internal and external conflicts Hispanic students with IP may experience in university settings. Individuals act in terms of their social identity whenever they identify and accept themselves as group members rather than as unique individuals (Tajfel & Turner, 1979). Moreover, according to the SIT, individuals

who identify and accept themselves as group members will also tend to stereotype themselves accordingly (Tajfel & Turner, 1979). This may explain the influence of IP and EI on Hispanic college students. The SCT involves the nature, antecedents, and consequences of processes of self-categorization. This theory is useful for understanding connections between EI, LE, and IP. In the section that follows, I will provide an overview of the SIT and SCT theories, beginning with their etymology and development, to justify their selection for this study.

SIT

Tajfel (1970) demonstrated that most participants when assigned to a group would even under arbitrary and baseless categorization identify themselves as members of the in-group and find their group favorable compared to out-group members. In other words, subjective in-group favoritism and out-group derogation routinely occurred. Tajfel, Billig, Bundy, and Flament (1971) attributed participant perceptions to being categorized; after all participants did not know of one another or interact with one another, so preexisting individual personality or social tensions were nonexistent. Tajfel developed the SIT as a motivational explanation for why individuals assign perceptions.

Tajfel (1978) proposed that group membership forms the basis of an individual's sense of who they are in the social world. One primary component of the SIT involves how social and self-categorization shape a range of attitudes, emotions, and behaviors. SIT focuses on categorization from a psychological context based on a series of values, interpretations, and social categories. Social categories are clusters that individuals are placed in based on characteristics such as race, ethnicity, or gender (Tajfel & Turner,

1978). This practice of clustering is enacted through social and self-categorizing (Tajfel & Turner, 1978). It is important to note that these clustering perceptions are mostly visually-based and not necessarily based on fact (Crisp & Hewstone, 2007). Thus, perceptions and inferences made through categorizing may not always be correct (Crisp & Hewstone, 2007).

Tajfel and Turner (1979) posited that three mental processes were involved in evaluating groups and establishing self-concept, and that self-concept includes two components, personal and social identity. The three mental processes occur in a specific order. The first mental process is social categorization. During the categorization process individuals group people together to understand environment, expectations, and appropriate behavior. It is during this process that the individual identifies what similarities and differences they have with each group and begins germinating a personal identity (Tajfel & Turner, 1979). This is followed by the individual beginning the second mental process, known as social identification. In this stage, the individual absorbs the identity of the group they have come to categorize themselves with, meaning the group they have perceived to be most congruent with attributes of their personal identity. The individual will then begin to act in a manner they believe is consistent with the group's norms (Tajfel & Turner, 1979). The final process stage involves the individual becoming closely meshed with perceptions and opinions of group membership. At this stage, they may begin to self-stereotype according to their identified group (Tajfel & Turner, 1979). SIT addresses motivation and intergroup dimensions associated with group membership: conformity, stereotyping, and ethnocentrism (Crisp & Hewstone, 2007). Involuntary

keystones are assumed through SIT. One keystone is that there is emotional significance to identifying and behaving with a selected group and that self-concept is vulnerable during this process. Self-concept may be enhanced or weakened by perceptions of group norms regarding expected behavior and one's expected ability to perform and function in society. EI is a component of self-concept (Bailey, Williams, & Favors, 2014). An additional keystone is that the in-group needs to compare favorably with out-groups if one's self-concept is to be maintained. Furthermore, Tajfel (1978) posited that members of devalued groups will not necessarily attempt to challenge the existing intergroup hierarchy. Crisp and Hewstone (2007) stated that social categorizations may create some potential for misperception, and hostility. Hence, social identity and personal identity may be enhanced and/or ensured or diminished and/or compromised (Crisp & Hewstone, 2007).

SIT has been applied to the following topics: social influence, group cohesion, group polarization, collective action, leadership, personality, outgroup homogeneity, minority influences, and power. In this study, SIT and SCT provide a framework for studying the relationship between IP and EI in Hispanic students by focusing on how Hispanic students self-identify with their ethnic group and the psychological processes of self and social categorization.

SCT

The SCT is a conceptual extension of SIT developed by Turner and Oakes to address questions that arose in response to SIT about the previously described involuntary roots of social identification. SIT hypothesized that social identities carry

implications for within and between-group (i.e., intergroup) processes. For instance, individuals and groups will discriminate against other groups and other group members in effort to enhance their own self-image. Extending that idea, SCT focuses on the cognitive process by which individuals categorize themselves and others and define themselves in terms of membership within different social groups. The emphasis is on within-group (i.e., intragroup) processes. Unique to this theory is the premise that individuals not only think, act and feel independently, they also think, act, and feel collectively. Turner (2007) stated that individuals do not simply describe others as belonging to groups, they describe themselves as groups. Turner (2007) said that people talk about we and us as well as I and me; they act in a unified way as a crowd; experience collective emotions, feelings, and share similar attitudes, beliefs, and values. SCT asserts that a person may act individually in one setting, but in another setting demonstrate collective similarities with group members. Turner (2007) describes two types of behavior – individuality (i.e., personal) and group (i.e., social identity), as well as the interaction between both behavioral types in terms of how a person may choose to describe and express themselves. According to SCT, every person has various possible personal and social identities and can shift between them psychologically and behaviorally depending on their perception of the situation and their self-concept (Turner, 2007).

Onorato and Turner (2004) said that most people tend towards collective behavior rather than individual behavior. Such observances encouraged additional research to understand why individuals gear towards collective behavior. Cultural similarity and validation served as prime reasons people tend toward group behavior as

group definitions are similar in terms of values, goals, traits, and beliefs (Onorato & Turner, 2004). Moreover, the pressure of an expected, consensual and unitary behavior would be salient and encouraged in specific settings. SCT has been applied to secondary educational settings with the objective of improving school learning and well-being outcomes (Reynolds, 2012). In this study, SCT will assist in understanding the impact of social groups and specific settings on the individual Hispanic student.

Review of the Literature

Hispanic Student Dropout

The disparity between baccalaureate completion in Hispanic students and the general population has been significant. In March 2010, the Bill and Melinda Gates Foundation published a report by the AEI stating that the drop-out rate of American college students is tragic and that the drop-out rate for Hispanic students is seriously disconcerting. The AEI report included the statement that although the U.S. is number one in the world in terms of college enrollment, the U.S. has the highest drop-out rate. That means that millions of students have taken on thousands of dollars in debt with no diploma to show for it (AEI, 2010). This is crucial since most students who drop out are largely low-income, first-generation, Hispanic students (NEA, 2015).

In the U.S., educational experiences for Hispanics involve accumulated disadvantages. Many Hispanic students lack the economic and social resources other students receive (Schneider, Martinez & Ownes, 2006), tend to be less familiar with the U.S. education system, have less familial support, and tend to have weaker relationships with teachers and administrators (Carnevale & Fasules, 2017). Hispanics are also more

likely to enroll in a two-year rather than a four-year learning institution. However, Hispanic students who have been academically successful and prepared to enter four-year schools are also more likely to drop-out (Carnevale & Fasules, 2017). Psychological and social challenges are known to impede academic achievement and Hispanics are at greater risk for depressive symptoms, mental health impairment and related risk for suicide attempts and feelings of hopelessness compared with other ethnic groups (CDC, 2011; Wagstaff & Polo, 2012). Pina and Silverman (2004) said that young Hispanics experience higher levels of psychosomatic problems and anxiety symptoms as they emerge into early young adult college years. All of these factors may represent possible contributors in explaining the disparity in baccalaureate completion between Hispanic students and the general population.

Impostor phenomenon. IP is a concept that captures why Hispanic students may be feeling anxious and out of place (Weir, 2013). The concept of the IP refers to individuals who are successful by external standards but have an internal experience of intellectual phoniness (Clance & Imes, 1978). Although it may not be uncommon to question one's competencies and abilities, IP is an incessant pattern of feeling fraudulent and thinking that one is deceiving others (Weir, 2013). Such feelings and thoughts may vary in strength and frequency. In addition to feelings of phoniness and self-doubt, other common feelings associated with IP include the inability to properly attribute success and accomplishment, frustration with not meeting self-set standards, and fear of making mistakes (Kolligan & Sternberg, 1991). Feelings of intellectual incompetence reflect a maladaptive set of cognitions known to be associated with poor psychological distress

and psychological functioning (Peteet, Brown, Lige, & Lanaway, 2015), anxiety, and depression (Kolligian & Sternberg, 1991; McGregor, Gee, & Posey, 2008). IP's destructive perceptions may leave successful Hispanic students feeling as though the next time they do, say, or write something, their inadequacies will be revealed. This particularly applies to students who face the stereotypes frequently applied to this group. Stereotypes often depict Hispanics as low achievers with limited intellectual capabilities (Arana, Castaneda-Sound, Blanchard, & Aguilar, 2011; McCleod, 2015). One premise of this study is that specific LEs may lend themselves to pressures and stereotypes more than others. Research by Judd and Park (1993), and Swim (1994) has demonstrated a correlation between how group members perceive the stereotypes of their groups and how people from other groups perceive those same stereotypes. Categorization seems to provide information about others group memberships quickly (Turner, 2007), and stereotyping permits one to manage the world with less research and complexity (Macrae, Bodenhausen, Milne, & Jetten, 1994). Simply, individuals are innately inclined toward the conservation of cognitive effort and prefer a less resource-intensive heuristic process system when possible (Shah & Oppenheimer, 2008).

Negative outcomes of social categorization and stereotyping. Although thinking about others in terms of their social categorical memberships may have some possible benefits for the person doing the categorizing, categorizing rather than viewing others as unique individuals with their own characteristics, may have negative, and/or unfair outcomes for those being categorized. One problem is that social categorization may distort perceptions such that one may tend to exaggerate the differences between

different social groups and attribute increased similarity to members of outgroups. In other words, there is a tendency to assume there is more similarity among outgroup members than ingroup members (because one tends to know one's ingroup better and have less contact with outgroup members). According to Tajfel and Wilkes (1963) and Crisp and Hewstone (2007) such overgeneralizations influence one to treat all members of a group the same way. Such overgeneralizations and stereotyping tend to persist over time because people tend to seek evidence and create expectations to confirm their beliefs and ignore dis-confirming evidence. Hispanic students have tremendous challenges to contend with to overcome their typecast as low achievers and people of limited intellect.

Hispanic Students and IP

As previously stated, few studies have examined IP in Hispanic students. Most studies regarding IP and minority populations have focused on Black college students. Ewing et al. (1996) found that Black university students who endorsed an Afrocentric worldview and who maintained a positive academic self-concept were less likely to experience IP. Surprisingly, the participants in the Ewing study realized academic success in congruence with their endorsement of an Afrocentric worldview. The findings were unexpected because previous research indicated that most racial and ethnic minority students report experiencing racial discrimination, overt educational policies, culturally insensitive instructors and curriculum, and negative stereotypes (Chiu & Ring, 1998), which over an extended period of time negatively affected their mental health (Jones, Cross, & DeFour, 2007). Cokely et al. (2013) examined ethnic minority differences in minority status stress, impostor feelings, and mental health and contributors to minority

status stress and impostor feelings among 111 ethnic minority college students from the University of Texas at Austin. The assumption was that students who are more highly stigmatized and stereotyped as having lower intelligence (i.e., African American and Latino) would struggle more with impostor feelings (Cokely et al., 2013). However, Asian students (who are perceived as possessing great intellectual competence) reported struggling with significantly higher impostor feelings than their African American and Latino counterparts. Moreover, Cokely found that minority status stress and IP were both significantly correlated with psychological distress and psychological well-being for all of three ethnic minority groups (Asian, African American, and Latino). Peteet, et al. (2015) investigated predictors (first-generation status, psychological well-being, EI) of IP in 161 (73% were African American, 27% were Hispanic) academically successful Black and Hispanic students from a large midwestern PWI. Peteet, et al. (2015) findings did not concur with the previous research results from Ewing et al. (1996). Whereas Ewing found that racial identity was not predictive of IP scores, Peteet found that racial identity did predict IP scores. Peteet suggested that the LE may have influenced outcomes and that future studies should investigate African American students and Hispanic students separately so as to not ignore the unique attributes between diverse groups and college settings. Peteet et al. (2015) investigated the association of IP with psychological distress and self-esteem in 177 African American students from colleges and universities across the country. Participants were recruited through Facebook and online listservs and completed anonymous questionnaires through a secure survey system. Impostorism was found to be positively associated with psychological distress and negatively associated

with self-esteem. Specifically, higher impostorism predicts higher psychological distress and higher impostorism predicts lower self-esteem. Low self-esteem contributes to misattributions of success (Leary, 2000), a key component of impostorism (Clance and Imes, 1978). Moreover, Peteet et al. (2015) emphasized that none of the participants reported attending a historically black college or university (HBCU) and that feelings of impostorism may not exist for African American students who do attend HBCUs since comparison and categorization experiences would be different.

The results have been inconsistent, suggesting that minority students may benefit from attending minority serving learning institutions. Attending an HSI may not necessarily prevent IP either. For example, a Hispanic student may perceive the use of the Spanish language to be an important component of cultural identity and pride (Santiago-Rivera, Arredondo & Gallardo-Cooper, 2002). However, if the Spanish language was not preserved through the family, the negative impact of the loss of their native language may impact the student's identity and sense of self, particularly as non-bilingual students encounter other Hispanics and non-Hispanics who expect them to speak Spanish. These social confluences tend to accumulate and may hinder the student's ability to connect with possible support groups and experience college degree achievement. Devos and Torres (2007) demonstrated that tools used by African American students such as embracing an ethnic/racial-centric view did not improve Hispanic student academic achievement as it did African American students. Devos and Torres (2007) conducted studies to test the hypothesis that identification with academic achievement among Latino college students was related to the extent to which their ethnic group and significant

others were linked to academic achievement. Student participants completed a series of assessments measuring the interrelations among academic achievement, self, and ethnic groups (Study 1) or significant others (Study 2). Study 1 suggested that the more the Latino students identified with Latinos and stereotyped Latinos as low academic achievers, the less they identified with academic achievement. Study 2 demonstrated that the more Latino students identified with significant others as high academic achievers, the more likely they were to identify with academic achievement. These findings stress the socio-relational facets of the academic self-concept (Devos & Torres, 2007).

Two keystones of SIT may help explain IP in Hispanic students and the influence of ethnic salience. The first keystone is that there is emotional significance to identifying and behaving with a selected group and that self-concept is vulnerable during the identification process (McLeod, 2008). The student may feel emotional and vulnerable because their self-concept may be enhanced or weakened by perceptions of their identified group norms, expected behavior, and one's expected ability to perform and function in society. The second keystone is that their identified in-group must compare favorably with out-groups if their self-concept is to be maintained (McCleod, 2008). Maintaining a good self-concept may be a challenge during this process given the stereotypes of Hispanics and Hispanic students. Accordingly, to abate IP, maintain a good self-concept, and preserve self-esteem, a Hispanic student would need to perceive their identified group favorably and believe others perceive it favorably.

SCT describes behavior as individual, and group, whereby a person may act individually in one setting, but in another setting demonstrate collective similarities with

group members (Krizan, 2018, Tajfel, Billig, Bundy & Flament, 1971). According to SCT, every person has various possible personal and social identities and can shift between them psychologically and behaviorally depending on their perception of the situation and their self-concept (Krizan, 2018, Tajfel, Billig, Bundy & Flament, 1971). Hispanic students attending PWIs may experience conflict in shifting from personal behavior and group behavior for various reasons. Perhaps they are unable to identify a group they can assimilate with comfortably. Or they do identify with a group but are conflicted by a group stereotype and do not want to assimilate so they isolate. Or they may choose to assimilate for support but feel conflicted and frustrated by their conformity and inability in not meeting self-set standards (Kolligan & Sternberg, 1991). Last, Onorato and Turner (2004) specified that early SIT and SCT research demonstrated that most people tend towards collective behavior, rather than individual behavior as one cardinal way in which to maintain social connection.

Hispanic Students and Learning Environment

Each LE intentionally or unintentionally exerts its own set of protections and pressures on minority students and can be more or less familiar with each minority culture and its unique needs. In HSIs and PWIs physical appearance, as well as language, may disseminate challenges that influence IP in students. Johnson (1998) stated that light skinned Hispanics appear to enjoy a privilege that is not possible for darker skinned Hispanics (Johnson, 1998). Individuals confronted with comparisons may either choose to conform or change their belief out of a desire to fit in, be liked, or be correct (Asch, 1956, 1987). The Asch conformity studies are accepted as evidence for SIT and SCT

accounts of social influence, whereby the individual depersonalizes and begins to view themselves as identical members of a social category, rather than as a unique individual. They start to initiate their behavior on the beliefs, norms, goals, and needs of the identified group (Haslam, Reicher, & Platow, 2011). Such conformity may contribute to feelings of impostorism**.**

Peteet et al. (2015) stated that the most Black and Hispanic students have access primarily to PWIs. The work of Solórzano, Ceja, and Yosso (2000) revealed environmental distress and social factors in minority students at PWIs who believed they had to prove themselves by working harder. Working harder to prove one's abilities is not necessarily negative but can exert additional pressure. According to Festinger (1954) social comparison theory stated that individuals are continually making self and other evaluations across a variety of domains. Festinger explained that individuals mainly seek to compare themselves (i.e., intelligence, physical appearance, wealth, success) against someone (i.e., peers, professors) whom they believe is reasonably similar, but in the absence of such a benchmark, will use almost anyone. This is why the environment may be a critical factor in the Hispanic student experience. If a student compares themselves to a social reference whose attributes cannot reasonably be obtained, they may become distressed and give up. Regarding like-faculty, in 2015, there were 1.6 million faculty degree-granting postsecondary learning institutions. Of the 1.6 million, 42% were White males, 35% were White females, 6 percent were Asian/Pacific Islander males, 4% were Asian/Pacific Islander females, 3% each were Black females and Black males, and only 2% each were Hispanic females and Hispanic males (U.S. Department of Education,

NCES, 2017). With only 2% of Hispanic faculty members serving in postsecondary learning institutions, Hispanic students may have few to no role models or professors who negate the stereotype of laziness and unintelligence attached to this minority. Peteet et al. (2015) noted the possibility of benefits for minorities who attend minority-serving institutions and stressed the importance of studying the minority experience in diverse settings and minority-serving institutions.

Hispanic Students and Ethnic Identity

Although there are cognitive, affective, and behavioral factors that may contribute to academic challenges experienced by minority students, there has been a number a research studies in recent years that have documented other reasons that contribute to the failure of Hispanic college students. Cultural impact has been posited as one influence (Nieto, 2010). Williams (1958) referred to culture as a concept with two faces: "the known meanings and directions which members are trained to; and the new observations and meanings, which are offered and tested" (p. 6). Nieto (2010) said most people do not think about their culture unless their culture is in conflict with, or under the influence of another culture. People who are members of a majority culture do not seem to consciously ponder culture. This is why the influence of EI factors into this study.

Discrimination, racism, feelings of isolation, and diminished self-efficacy regarding academic performance are common obstacles for Hispanic college students. Racial and ethnic identity have been noticeably associated with self-concept and perception concerning group membership. While some studies have focused on the racial and ethnic development of specific racial and ethnic groups, limited research on Hispanic

students exists. Johnson (1998) said that identity is itself a myth of origin, or destiny, or both. Individuals judge self and others on appearance, language, and behavior. Individuals make up people inventing categories giving each category not only a label but an imagined history and an imagined behavioral script and then decide, yes or no, whether particular individuals should be assigned to the category. Moreover, the label Hispanic was created in 1978 by Directive 15 of the Office of Budget and Management and defined as a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture of origin (Santiago-Rivera, 2004, p. 6.). This definition includes people from the Spanish-speaking Caribbean, Spain, and the Dominican Republic. Given this definition, there are some diversity factors within the Hispanic minority group.

Some research supports a positive association between and academic performance when students were able to maintain their ethnic identity and still succeed. Ewing et al. (1996) found that African American college students from a PWI who embraced an Afrocentric worldview were able to abate IP and perform better academically. Flores-Gonzales (1999) found that Puerto Rican students in a public Chicago high school were able to embrace their EI and succeed academically and were not accused of acting like European-Americans or of being un-Puerto Rican. Devos and Torres (2007) found that Hispanic college students in a PWI with high ethnic salience were less likely to succeed academically. This suggests several important incongruencies regarding the influence of EI on minority groups in various LEs.

There are language differences within the Hispanic minority as well, meaning some members may speak Spanish, while others do not. It is not uncommon for students

with Spanish-speaking abilities to serve as language brokers between non-English-speaking parents and the community (Morales & Hanson, 2005). The responsibilities of translating for family members and serving as the family's link to survival and success can be overwhelming. And, while language and ethnicity are primarily related, recurrently, they are not. Aside from hailing from various countries, some members were born in the U.S. where the Spanish language is regarded as a foreign language, even in those regions where Spanish has been spoken longer than before the region became part of the U.S.. Unfortunately, it appears that language and ethnicity have remained integrated, serving to reinforce the false identity/impostor association.

Aside from language variances, there are skin-tone differences. Hispanics have a range of skin tones from pale white to dark black. Environment permitting, light or dark-skinned Hispanics can shift from a self-identification of race to a socially-constructed identification of race when confronted with skin-tone related societal expectations. The concept of possible selves describes the interface between the individual's current social contexts and their perceived options for the present and the future (Henry & Cliffordson, 2013). Possible selves are drawn from the individual's unique sociocultural and historical background as well as the images, symbols and immediate social experiences (Henry & Cliffordson, 2013. Social interactions at school with peers and faculty cultivate students' beliefs about possible selves and their place. Possible selves' function as incentives for future behavior and provide an evaluative and interpretive context for the current view of oneself (Henry & Cliffordson, 2013).

Summary and Conclusions

The U.S. is first in college student enrollment and first in college drop-out rates. Hispanics are the largest growing minority group and have passed White students in numbers of enrollments; yet, they realize the smallest number of graduates and greatest number of dropouts in the nation (NEA, 2015). This has been termed a national disaster (Bill and Melinda Gates Foundation, 2010; OECD, 2014). Minority studies have identified unique stressors and possible differences in minority experiences (i.e., LE, sociological, cultural, socio-economic and psychological pressures). Studies have demonstrated reasons why individuals may experience IP and how they respond to feeling inauthentic. However, at the time of this study, no known study existed using only Hispanic college participants to study IP in different institutional settings. EI has been shown to moderate the effects of IP in Black college students (Ewing et al. 1996) but did not moderate the effects of IP in students attending a PWI setting (Devos & Torres, 2007).

The purpose of this research was to quantitatively describe the relationship between IP, EI, and LE among Hispanic university students attending PWIs, HSIs, and OL universities. In this study, scores for IP and EI were obtained from Hispanic university students attending traditional PWIs, HSIs, and OL universities. Two objectives of this study were to expand information presented in existing literature through understanding how IP is experienced by Hispanic students and aid higher learning institutions in understanding the needs of their Hispanic population. Chapter 3 will describe the methodology.

Chapter 3: Research Method

Hispanic college students are the largest minority group to drop out of school, and Hispanics experience unique challenges while pursuing college degrees that may interfere with degree completion (CDC, 2011; NEA, 2015; Wagstaff & Polo, 2012). Among other challenges, Hispanic college students may be disproportionately affected by IP, especially in LEs in which they may feel that they do not belong. Lige et al. (2017) suggested that minority students may feel ostracized and perceived as the other in higher education settings. Lige et al. (2017) said that such perceptions as an anomaly in higher education may lead some students to experience increased feelings of IP. These experiences may be enhanced by the degree to which Hispanic college students acknowledge a sense of their EI. However, there is a gap in the literature involving the relationship between IP, LE, and EI in a Hispanic college student population. Because there is a growing concern among secondary educators regarding how to retain Hispanic students, this quantitative correlational research project questioned whether Hispanic students might experience IP differently in different LEs (PWI, HSI, and OL) and EI might moderate the influence of LE on IP.

This chapter explains the study's research design, sampling procedures, instrumentation, data analysis, and ethical considerations. The methodology section includes the participant population and demographics of each LE, followed by a detailed description of the selected self-report questionnaires. Last, the study's research questions and hypothesis are presented followed by a thorough explanation of how data were collected and stored in order to meet the ethical guidelines of each school's Institutional

Review Board (IRB). The IRB is a committee established to review and approve applications for research projects involving human subjects. The primary purpose of the IRB is to protect the rights and welfare of the human subjects.

Research Design and Rationale

The dependent variable in this research is IP. The first independent variable is LE, represented by three levels: PWI, HSI, and OL. The second independent variable is EI, which is treated in this study as a potential moderator variable. The study uses a quantitative correlational research design to examine the relationship between IP, EI, and LE among Hispanic college students. Data were gathered using two standardized self-report assessments: the CIPS and SIPI. A quantitative correlational approach is appropriate when the researcher seeks to understand and measure relationships between variables. The goal of this study was to collect self-reported and statistical data to explore relationships between the independent and dependent variables. A three-step hierarchical moderated regression analysis was run using IBM SPSS software (Version 26.0). SPSS is a software package used for interactive, or batched, statistical analysis. A hierarchical linear regression is a special form of a multiple linear regression analysis in which more variables are added to the model in separate steps called blocks. This is done to statistically control for certain variables, to see whether adding variables significantly improves a model's ability to predict the criterion variable and/or to investigate a moderating effect of a variable. LE was entered at Block 1 of the analysis, and the significance of R^2 at that block was used to evaluate the main effect of LE on IP. Strength of EI was entered at Block 2 and the change in R^2 from Block 1 to Block 2 was used to

evaluate the main effect of EI on IP. Finally, the LE x EI interaction terms was entered at Block 3 and the change in R^2 from Block 2 to Block 3 was used to test the interaction effect, i.e., the degree to which EI moderated the relationship between LE and IP. An advantage of the quantitative methodology is that researchers can examine a greater number of subjects, which increases the likelihood that the results will be reliable. Quantitative research also provides for greater objectivity and accuracy of results by enabling the researcher to make use of standardized statistical analytic procedures. Quantitative research findings can thus be replicated, analyzed, and compared with similar studies. Conversely, limitations of quantitative research include more time spent gathering and statistically analyzing data and a larger required number of participants. Additionally, the use of standardized questions with limited choice responses contained in self-report surveys may constrain participants' ability to express themselves fully. However, a survey method does provide an affordable way for researchers to collect data quickly. The quantitative model allows for this research to be replicated due to its ability to investigate connections between variables through close-ended questions, use of structured approaches, and statistical procedures. To date, this is the only research involving the collection of IP data from an all Hispanic population using this combination of selected assessments.

Methodology

The following sections provide a detailed account of various aspects of the research design and methodology. Topics covered include the population of interest,

sampling procedures, and procedures for data collection. There is also a description of the self-report inventories used in this study.

Population

The population of interest for this study were academically high-performing Hispanic college students enrolled in a HSI, PWI, or OL LE. Increases in the traditional college age population and rising enrollment rates have contributed to increases in college and university enrollment in recent years. The numbers of younger and older college and university students increased between 2000 and 2015 (U.S. Department of Education, 2018). During this time period, the 18- to 24-year-old student population rose from approximately 27.3 million to some 31.2 million (U.S. Department of Education, 2018). The percentage of 18- to 24-year-olds enrolled in college and university also was higher in 2015 (40.5%) than in 2000 (35.5%) (U.S. Department of Education, 2018). In 2015, there were 11.8 million college and university students under age 25 and 8.1 million students 25 years old and over (U.S. Department of Education, 2018). Increasing numbers and percentages of Black and Hispanic students are attending college. Between 2000 and 2015, the percentage of college students who were Black rose from 11.7% to 14.1%, and the percentage of students who were Hispanic rose from 9.9% to 17.3% (U.S. Department of Education, 2018). Also, the percentage of Hispanic 18- to 24-year-olds enrolled in college and university increased from 21.7% in 2000 to 36.6% in 2015, and the percentage of Black 18- to 24-year-olds enrolled increased from 30.5% to 34.9% in that same period (U.S. Department of Education, 2018).

Sampling and Sampling Procedure

The sample size requirements of any quantitative study are influenced by the type of statistical analyses that are used in addressing that study's research questions. Because of this, sampling goals cannot be discussed without some mention of the analyses that are to be used in the study. The sampling goal for this study is based on the planned use of a hierarchical multiple regression analysis with IP serving as the continuous dependent variable, LE (represented by dummy variables PWI and HSI) entered at Block 1, EI entered at Block 2, and the EI x PWI and EI x HSI interaction terms entered at Block 3. The significance of R^2 at Block 1 addresses RQ1 (whether LE is related to IP) and the change in R^2 from Block 2 (without the interaction terms) to R^2 at Block 3 (with the interaction terms) addressing RQ2 (whether EI moderates the relationship between LE and IP). G*Power software (Version 3.1.9.2) was used to determine the sample size needed to support this analysis. Because two effects were evaluated for statistical significance within that single analysis, separate a priori power analyses were performed to identify sample size requirements for each significance test. Given any difference in those sample size requirements, the larger of the two dictates the study's sampling goal. The first a priori power analysis estimated the sample size needed to support the test of the significance of R^2 at Block 1 (RQ1). Parameters input to that power analysis were as follows. The selected application was for linear multiple regression, fixed model, R^2 deviation from zero. The selected effect size was for a population effect of medium strength, Cohen's $f^2 = .15$. The selected significance level (α) was 0.05, with statistical power ($1 - \beta$) set at 0.80. Both of these are standard values in research in education,

biomedical science, and the social and behavioral sciences (Cowels & Davis, 1982). Finally, the number of test predictors is two (the dummy variables PWI and HSI representing the LE variable). The total sample size estimated for the analysis is $N = 68$. A second a priori power analysis was used to determine the sample size needed to support the test of change in R^2 from Block 2 to Block 3 (RQ2). The selected application is for linear multiple regression, fixed model, R^2 increase. The population effect size was set at medium, Cohen's $f^2 = .15$. Alpha error probability (α) was set at 0.05 and power ($1 - \beta$) was set at 0.80. The number of test predictors is two (the interaction terms PWI x EI and HSI x EI), and the total number of predictors is five (PWI, HSI, EI, PWI x EI, and HSI x EI). The total sample size estimated to support this analysis is 68 cases. With both a priori power analyses estimating a need for 68 cases, the minimum sampling goal was set at 69 cases to provide for equal numbers of participants to represent each of the three LEs, 23 participants in each. All participants in this study are Hispanic.

Some comment is warranted regarding the reported choice of effect size in the a priori power analyses. The effect size was estimated based on the results of earlier studies that investigated IP in African American college students. Peteet et al. (2007) investigated IP and racial/EI in 157 African American college students: 107 females (68.2%) and 50 males (31.8%) in a PWI. The Peteet et al. (2007) study observed an interaction effect that failed to meet statistical significance, but had a small to medium effect size, suggesting the study may have been underpowered to detect an actual effect. Peteet et al. (2007) encouraged replication of their study with larger sample sizes. In 2015, Peteet again investigated IP in 161 minority participants of which 73% ($n = 117$)

were Black/African American and 27% (n = 44) were Hispanic. The Peteet et al. (2015) study reported a large effect size. Given this information, it was determined that the effects to be expected in the proposed study would be at least of medium strength and that was taken into consideration in the sample size calculations presented previously.

Purposive sampling took place in the HSI and PWI LEs with the assistance of the registrar's offices at those institutions. Hispanic students with GPAs equal to or greater than 3.0 (out of 4.0) were invited to participate through Diversity Directors, professors, and other faculty members as well as through an email sent by the registrars' offices. Recruitment from the OL LE occurred through the school's research participant pool which is open to all enrolled students.

Procedures

The homogenous population consisted of actively enrolled male and female Hispanic college students with a GPA of 3.0 or higher from a PWI, a HSI, or an OL university. Hispanic (defined as a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race by the US Department of Education). Non-Hispanic students were excluded.

All participants were volunteers. The three LE samples were obtained from a PWI, a HSI, and an OL. At the time of this study student demographics reported by each LE were: PWI (83% White; 5% Black, 5% Hispanic/Latino, 2% American Indian/Alaskan; 2% Asian: 5% other); HSI (82.8% Hispanic/Latino; 6.7% White; 2.6% Black; 0.8% Asian; 7.1% other); and OL (30.6% White; 30.6% Black; 5.4% Hispanic/Latino; 1.7% Asian; 22.4% other).

Following Institutional Review Board (IRB) approval 02-06-19-0093884, registrars from the PWI and HSI sent Hispanic students who met the GPA requirements of the study a recruitment flyer with an Internet link to the PsychData research website. OL students were recruited through the school's participant pool. All data was collected using on online survey hosted by the PsychData research website. The survey included an informed consent form, demographic questionnaire, the CIPS measure of IP, and the SIPI measure of EI. Once the participants agreed to take part in the study and gave their consent, they gained access to the other elements of the survey. Students were informed of their right to refuse to participate and their right to withdraw from the study at any time without penalty by closing their web browser. Upon completing the survey, students were thanked for their participation and debriefed about the study on the PsychData research website. Contact information was again included. No further debriefing was required.

All three participating universities were asked to grant written and verbal permission to participate in my research with the understanding that all results and conclusions would be shared with each school and all participants. The IRB and registrars at the brick and mortar schools helpful and timely. I agreed to provide the designated contact person at each university with a link that enables any interested parties to access a website at which the results of the study are presented.

Instrumentation and Operationalization of Constructs

In this study, three self-report questionnaires were used. Two questionnaires were standardized and one was a demographic questionnaire. Study participants completed the

standardized CIPS inventory (see Appendix B) and the standardized SIPI (see Appendix C), in addition to a brief demographic questionnaire via an online link through PsychData upon participants' completion of the consent form.

Instrumentation

CIPS. The CIPS is a 20-item, self-report rating inventory that uses a 5-point Likert scale format anchored with 1 = *not true* to 5 = *very true*. Attributes measured by the CIPS include: (a) fear of evaluation, (b) fear of not being able to repeat success, and (c) fear of being less capable than others. The CIPS is used to measure participants' level of impostor phenomenon. Scores on the CIPS can range from 1-100. A score of 0-40 reflects none to mild impostorism; 41-60 reflects moderate impostorism; 61-80 reflects significant impostorism; and 81-100 reflects intense impostorism. The higher the score, the more frequently and seriously the impostor phenomenon interferes in a person's life.

Items on the CIPS are worded in a manner that consistently acknowledges the success of the individual in order to minimize social desirability effects. The CIPS has been shown to reliably differentiate impostors from non-impostors (Clance, 1985; Holmes et al. 1993). Originally researched among primarily White, middle, and upper-middle class high achieving women (Clance, 1985), CIPS has demonstrated good validity in studies with the following minority populations: African American (Cokley, McClain, Enciso & Martinez, 2013), Asian (Jaruwan, & Alexander, 2011), Persian (Ghorbanshirodi, 2012; Kamarzarrin, Khaledian, Shooshtari, Yousefi, & Ahrami, 2013), and Latino (Cokley, McClain, Enciso & Martinez, 2013). Permission to use the CIPS was granted by email from Dr. Pauline Clance (see Appendix A).

SIPI. The SIPI is a 16-item, self-report rating inventory that uses a 9-point Likert scale format with 1 = not at all important to who I am to 9 = extremely important to who I am. The SIPI is specifically designed to capture individual differences in terms of relative importance and centrality assigned to both personal and social identity. The SIPI produces a personal identity score and a social (ethnic) identity score.

The SIPI is sensitive in distinguishing which identity is most important to the individual based upon the highest score (Nario-Redmond et al., 2004). The highest number each identity category can score is 72, the lowest is 9. The greater number indicates identity salience. The personal identity subscale has an internal consistency reliability coefficient of .80 and the social identity sub-scale has an internal consistency reliability of .79 (Gray & Desmarais, 2014).

The SIPI contains 16 questions, with 8 each for social (ethnic) and personal identification. The factors considered in social identity include memberships one has, groups one belongs to, need to conform, racial and ethnic kinship, national pride, gender and skin color. The factors considered in personal identity include non-conformity, creativity, individuality, and rebelliousness, one's need to be completely unique and distinct from others. Social identity is operationalized as the tendency to categorize oneself in terms of one's aggregate group identifications, including cultural or EI, and personal identity as the tendency to individuate the self as distinct from in-group memberships (Greenwald et al. 2002). Tajfel (1981) defined EI as an aspect of social identity, specifically, the part of an individual's self-concept which derives from his or her knowledge of membership of a social group (or groups). Personal identity is

described in terms that differentiate the individual as distinct from other members of the in-group, represents uniqueness and idiosyncrasies. SIPI is sensitive in distinguishing between the interpersonal level of self, which differentiates the individual as unique from others, and the social (cultural or ethnic) identity level of self whereby the individual identifies with his or her group membership. In contrast to perspectives that emphasize the context-dependence of self-conception, SIPI captures individual differences in participants' readiness to categorize themselves using cultural or ethnic group and personal self-categories as measured by the degree of importance or centrality assigned to each (Nario-Redmond et al., 2004). A factor analysis and test-retest reliability analysis using a sample of 570 undergraduates supported the scale's two-factor structure by extracting two factors with eigenvalues of 1.0 or greater and established the instrument's reliability (Nario-Redmond et al., 2004). These two factors of the SIPI accounted for 35% of the total item variance (23% for factor 1, personal identity; 12% for factor 2, social identity). An internal consistency reliability analysis yielded alpha coefficients of .90 for the personal identity subscale and .79 for the social identity subscale, with the two indexes moderately correlated with each other, $r = .29$. The SIPI has been validated in minority educational and work-place studies with participants who identity as queer or bisexual and mixed raced and multicultural studies (Dam, 2016). Permission to use the SIPI was granted by email from Dr. Michelle R. Nario-Redmond (see Appendix B).

Demographic scale. A demographic questionnaire was created with guidance from Pew Research Survey Design to collect basic demographic information from each participant. The questionnaire was comprised of 7 questions in multiple-choice format.

Information on the questionnaire includes the name of the participants' school, educational degree goal, age, ethnicity, and year in their educational program (see Appendix C).

Data Analysis

Data were screened for quality before running any statistical analyses using IBM SPSS software (Version 26.0). Data were first screened to ensure that all participants met the criteria for inclusion in the study, i.e., Hispanic with GPAs of 3.0 or higher. Cases were deleted who failed to provide responses to the study's key variables—LE, the CIPS measure of IP, or the SIPI measure of EI. Cases were also screened for multivariate outliers by calculating the Mahalanobis distance statistic *D* for each case based on their scores on the SIPI and EI instruments. Values of *D* were evaluated for significance against the chi-square distribution using $df = 2$ (the number of variables used to calculate *D* and the .001 level of significance. Univariate outliers on IP and EI were screened next by standardized scores on those variables and searching for *z*-scores exceeding ± 3.0. Finally, survey response times were screened to identify any cases who completed the survey in an excessively short period of time. In addition to quality screening, the data were tested to ensure that all of the statistical assumptions upon which the hierarchical multiple regression analysis is based are satisfied.

The research questions addressed in this study with their corresponding null and alternative hypotheses were:

RQ1: Is there a statistically significant relationship between IP and type of LE among Hispanic college students?

H_01: There is no statistically significant relationship between IP and type of LE among Hispanic college students.

H_a1: There is a statistically significant relationship between IP syndrome and type of LE among Hispanic college students.

RQ2: Does EI significantly moderate the relationship between IP and LE among Hispanic college students?

H_02: EI does not significantly moderate the relationship between IP and LE among Hispanic college students.

H_a2: EI does significantly moderate the relationship between IP and LE among Hispanic college students.

A three-step hierarchical moderated multiple regression analysis was used to test both hypotheses. The three-category LE variable was entered at Block 1, represented by two dummy variables, PWI and HSI. The test of R^2 at that block addressed Research Question 1. The continuous EI variable was entered at Block 2. The change in R^2 from Block 1 to Block 2 provided a test of the main effect of that variable on IP. Finally, the PWI x EI and HSI x EI interaction terms was entered at Block 3 and the change in R^2 from Blocks 2 to 3 addressed Research Question 2.

Threats to Validity

This study used a correlational research design with a continuous dependent variable (IP), a three-category independent variable (LE), and a continuous independent variable (EI) which is treated as a potential moderator variable. There are internal threats and external threats to consider. Experimental mortality can be an internal validity threat

to any study design with more than one group. Experimental mortality occurs when a participant joins the study but does not complete it. Another factor concerns the drop-out rate of students in OL LEs versus traditional LEs. Specifically, if there is a significant difference to begin with that might threaten internal validity.

The consent form and invitation to participate provided a brief description of the study and its purpose. Students might have been motivated to attempt to reverse or reduce the anticipated effects for institutional school pride. A compensatory rivalry is one possible example to explain this behavior. Resentful demoralization may also occur if students experience feelings of resentment and demoralization due to their belief that their school receives fewer desirable goods or services than other schools (Saretsky, 1975). Consequently, student replies to the questionnaires may be to provide responses that increase the degree of difference between the groups in order to receive desirable services. Or in keeping with the behavior associated with IP, participants may respond dishonestly regarding the intensity of the IP distress they are experiencing in order to appear perfect.

External validity refers to the degree to which the results can be generalized. This study focused on one population: Hispanic college students with strong GPAs. Therefore, the results of the study may not be generalized to all students or Hispanic students attending secondary schools outside of the U.S.

Ethical Procedures

The American Psychological Association's Ethical Principles of Psychologists and Code of Conduct calls for researchers to safeguard the ethical treatment and

protection of participants. Because this study focused on a potentially sensitive population that may have been stereotyped or experienced discrimination, I was sensitive to participant reactions before, during, and after the data collection. The objective of this study was to assist the Hispanic student population, not to subject anyone to unwarranted stress in order to acquire data. No personally identifying questions were asked. Moreover, I took the necessary precautions to ensure that participating students cannot be identified in the research results or through other data sections of the dissertation. Once IRB approval was provided by all three learning institutions, an invitation to participate in the study was distributed through the registrar's office, professors, and other university staff at the HSI and PWI. Students from the OL were able to access the invitation through the participant pool. There were no incentives offered for participating in the research, nor penalty for refusing to participate.

Interested students meeting the study's criteria for inclusion were presented with the informed consent document containing a description of the procedures for participation, nature of the study, confidentiality issues, possible risks and benefits of participating, and contact information. The informed consent document emphasized that participation in the study was voluntary, and that participants had the right to stop participating at any time without penalty. The participants were not be subjected to any physical or psychological harm. The consent form and all collected data were processed through PsychData, an online research platform. PsychData is designed to meet APA standards for ethical research and the protection of participant confidentiality. All survey data are encrypted during transmission from the survey to the password protected

database. Participants completing surveys through PsychData are likely to have more privacy at their computer than in a lecture hall or classroom. PsychData has addressed concerns regarding the potential for viewing survey data by a third party by placing all surveys in a Secure Survey Environment (SSE). All survey pages are constructed such that a completed survey cannot be viewed by pressing the back button (greatly reducing the chance that someone could back up to see previously entered data). The SSE incorporates security measures to ensure that a participant's responses are not retrievable from their computer. All survey pages are entirely dynamic and database-generated (instead of static web pages that could be stored by the participant's computer). All surveys have redundant server-side code to ensure that they always load directly from the server and not from a prior cached version. Finally, upon completion of the survey, the survey window encouraged the participant to close this browser window.

During data transmission, all surveys hosted with PsychData are encrypted using Secured Socket Layer technology (SSL) that is equivalent to the industry standard for securely transmitting credit card information over the Internet. This technology encrypts both the questions displayed to the participants and their responses. Thus, all responses are instantly encrypted and remain so until they are received at the PsychData database. Interception of data when it is being transmitted between the Internet browser (i.e., Internet Explorer, FireFox, Safari, Chrome) and the PsychData database is unlikely. However, should interception of encrypted data occur, that data could not be decoded without the unique encryption key held only by PsychData.

Once research data are stored on a PsychData server, it is held in an isolated database that can only be accessed by the researcher with the correct username and password. PsychData employees do not examine customer data unless requested to do so by the account owner; additionally, those employees are trained in the ethics of research involving human subjects. As the researcher, I had full control over the data including the ability to delete all data at the completion of the survey. All data stored at PsychData are backed up on a daily basis, held in a tightly secured facility, and typically overwritten after 7 days. Per Walden University IRB requirements, data will be stored a minimum of 5 years. Once I have deleted the data, they will be permanently deleted from backups in one week. An IP address is a unique identifying number used to identify computers connected to the Internet. IP addresses will not be collected since they represent a form of potential indirect identification.

Summary

This chapter outlined the methodology to quantitatively describe the relationship between IP, EI, and LE in Hispanic university students. This study used a correlational research design to evaluate the relationship between IP and three LEs: PWI, HSI, and OL learning. The study also examined the role of EI as a potential moderator of the relationship between IP and LE. The CIPS and SIPI were used to measure IP and EI, respectively. The chapter concluded with an explanation of threats to validity and steps taken to ensure that human research participants were treated in an ethical manner. In Chapter 4, I will report the results of the data analyses.

Chapter 4: Results

The purpose of this quantitative correlational study was to examine the relationship between IP, EI, and LE among Hispanic university students with GPAs of 3.0 or higher. IP served as the continuous DV and was measured by the CIPS. The IV was LE, with three levels: (a) PWIs represented by a Midwestern university with 24,000 students, (b) HSIs represented by a public southern university with 25,151 students, and (c) OLs represented by a large OL university with 49,000 students. EI was a second IV, which was examined as a potential moderator of the relationship between LE and IP. Strength of EI was measured by the SIPI. Consistent with the stated purpose of the study, two research questions were addressed. These questions are listed next, along with their corresponding null and alternative hypotheses.

RQ1: Is there a statistically significant relationship between IP and type of LE among Hispanic college students?

$H_0 1$: There is no statistically significant relationship between IP and type of LE among Hispanic college students.

$H_a 1$: There is a statistically significant relationship between IP and type of LE among Hispanic college students.

RQ2: Does EI significantly moderate the relationship between IP and LE among Hispanic college students?

$H_0 2$: EI does not significantly moderate the relationship between IP and LE among Hispanic college students.

H_a2: EI does significantly moderate the relationship between IP and LE among Hispanic college students.

In the remaining sections of Chapter 4, the process of data collection will be described first, followed by the methods used to screen data for quality. Descriptive statistics are presented next, which served to describe the sample in terms of both demographic characteristics and levels of IP and EI. A hierarchical multiple regression analysis was used to address both of the study's research questions, and the results of tests of statistical assumptions of that procedure are described. That description is followed by the results of the multiple regression analysis and a discussion of how the results answered the study's research questions. The chapter closes with a summary and transition to Chapter 5.

Data Collection

Convenience samples of college students were recruited from all three LEs: one PWI, one HSI, and one OL. Registrars at the PWI and HSI identified Hispanic students with GPAs of 3.0 or higher and sent those students a recruitment flyer with a link to the study's online survey hosted by PsychData. OL students were recruited from the school's research participant pool and then screened to include only Hispanic students with GPAs of 3.0 or higher. Due to a small response rate from the OL participant pool, I requested approval to recruit participants through social media. Upon receiving IRB approval from the OL university in August 2019, participants were recruited through nonofficial school student support media websites. All data were collected using the PsychData online survey platform during the period between March 2019 and early October 2019. A total

of 103 responses were collected during that time period. Data were downloaded as an IBM SPSS data file and all subsequent data file manipulations and analyses were performed using IBM SPSS Version 26.0.

Data Quality Screening

Meade and Craig (2012) have noted that the quality of survey data collected using anonymous Internet surveys can be suspect, particularly when respondents are under some obligation to participate (as for example, students drawn from human subject pools). Meade and Craig recommended careful data quality screening to ensure that low quality data are eliminated prior to performing any further analyses. In this study, data were first screened to ensure that all participants satisfied the criteria for inclusion. Data were then screened for excessive missing data, multivariate outliers, univariate outliers, and cases where participants completed the survey in an excessively short period of time.

Records were first examined to ensure that all participants met the criteria for inclusion in the study (i.e., they identified as Hispanic and reported GPAs of 3.0 or higher). While registrars at the PWI and HSI recruited only students who met both of these criteria, that was not the case at the OL institution. One OL survey respondent was identified as missing data for both of the study eligibility variables. With no way to determine whether or not that individual met those requirements, the case was deleted.

Records were next screened for excessive missing data. Since analyses used to address the study's research questions required data on all three key study variables (IP, LE, and EI), the goal was to identify and eliminate cases who lacked data for one or more of those variables. Cases with excessive missing data were identified by counting for

each participant the number of missing responses on the 20 items of the CIPS, the 16 items of the SIPI, and two items that provided information about participants' LEs. Eight respondents failed to answer any of the items for either the CIPS or SIPI and were deleted from the data file. Two additional cases responded to the CIPS but did not provide answers to any of the items on the SIPI, and these two cases were also deleted from the data file. It was impossible to determine the LE of one case and that case was also eliminated.

During the course of performing the missing data screen, two cases were identified who failed to respond to single items in the CIPS and three cases were found to be missing responses to single items on the SIPI. Total scores on both of these instruments are calculated by adding ratings across all items. Consequently, responses are required for all items in order to calculate valid total scores. Rather than deleting cases with small amounts of missing data and losing statistical power as a result, the decision was made to impute missing ratings using the process of mean imputation. CIPS and SIPI item means were calculated from item ratings provided by the rest of the sample and those means were used as estimates where there were missing values. Myers, Gamst, and Guarino (2017) noted:

> In the simplest form of [imputation], the mean to be used as the replacement value is based on all the valid cases in the data file. This is both the most common and most conservative of the imputation practices. From our first statistics course on, we have been taught that the sample mean is the best estimate of the population mean. An analogous argument is offered to support using the mean substitution

> procedure. The best estimate of what a missing value might be is the mean of the values we have. (p. 43)

After calculating total scores on the CIPS and SIPI, data were screened for multivariate outliers. An individual case can show unremarkable scores on each of two or more variables and yet show a pattern of scores across the variables that is statistically aberrant in comparison to the rest of the sample. These cases are multivariate outliers (Meyers et al., 2017). Multivariate outliers exert a disproportionate influence on the outcomes of statistical analyses involving those outliers and multivariate outliers are unrepresentative of the rest of the sample (Warner, 2013). Meade and Craig (2012) noted that multivariate outliers sometimes result from careless or random responding. For all of these reasons, it is appropriate to eliminate multivariate outliers before proceeding with data analysis. Multivariate outliers were screened in this study by calculating the Mahalanobis distance statistic (*D*) for each case based on scores on two variables, the CIPS and SIPI. Value of *D* reflects the degree to which each case's pattern of scores on the variables used in calculating *D* deviate from the average pattern of the rest of the sample. Values of *D* were then evaluated for significance against the chi-square distribution using $df = 2$ (the number of variables used to calculate *D*) and a stringent level of significance ($p < .001$; Meyers et al., 2017). One case was identified in this way as a multivariate outlier and was deleted from the data file.

The data were next screened for extremely high and low scores on the CIPS and SIPI, called univariate outliers. A univariate outlier is a data point that consists of an extreme value on one variable. Data screening for univariate outliers was accomplished

by standardizing scores on those instruments and checking for *z*-scores exceeding $\pm$3.00. Tabachnick and Fidell (2013) observed that different authors recommend different criteria for identifying extreme values on the basis of *z*-scores and offered the criterion $z \leq \pm 3.0$ as a compromise that effectively identifies and eliminates truly extreme values without losing too much data. One case was identified in this way with an extremely low score ($z = -3.52$) on the CIPS. Although that respondent's other data were valid, the case was deleted since the analyses used to address the study's research questions required complete data on IP, EI, and LE from all cases.

The final quality screen was for respondents who completed the survey in an excessively short period of time. Metadata collected by the survey platform included survey start and stop times and these data were used to calculate response times. Those response times were standardized, and the resulting *z*-scores were screened for values of -3.0 or less, indicating extremely rapid response times. No cases showed *z*-scores approaching -3.0. Two cases showed high positive *z*-scores, but it was assumed that these individuals were interrupted as they worked on the survey and then returned later to complete it. Those two cases were not considered to be problematic and were left in the data file. After all stages of data screening were completed, there remained 90 cases for further analysis. This sample size was substantially greater than the sampling goal of 69 cases determined from a priori power analyses performed to determine the study's sample size requirements (see Chapter 3).

Findings

Sample Description

Criteria for inclusion required that all study participants should be Hispanic with GPAs of 3.0 or higher, so it is known that the sample consisted of academically high-performing Hispanic college students. In addition, the sample of 90 study participants represented three LEs (the study's independent variable) as follows: PWI, $n = 39$ (43.3%); HSI, $n = 27$ (30.0%); and OL, $n = 24$ (26.7%). The three LEs were not equally represented in this study, but the ratio of the largest ($n = 39$) to smallest ($n = 24$) was 1.6:1. That ratio closely approaches the criterion 1.5:1 suggested by several authors (Hair, Black, Babin, & Anderson, 2010: Pituch & Stevens, 2016) for judging samples to be of similar sizes when sample size similarity is an issue. In the present study, it was desirable for purposes of improved statistical power that each of the three LEs representing the levels of the categorical independent variable should be represented by approximately equal numbers of participants (Pedhazur, 1997). The obtained ratio of 1.6:1 more than satisfied the criterion of 2:1 suggested by Huberty and Alejnkid for judging sample size similarity. Table 1 provides a summary of the other known characteristics of the sample. The distribution of participants' ages was somewhat bimodal, with most students falling either in the 18-22 years category or the 33+ years category. There were considerably more females than males in the sample, and most students reported that they were White. Almost half of the participants were in their fourth year of the four-year degree, with the remainder about equally distributed between the first, second, and third years. The

majority of students reported that they were first generation college students with widely variable academic majors.

Table 1

Sample Demographic Characteristics

Variable	*f*	%
Age		
18–22	24	26.7
23–27	12	13.3
28–32	17	18.9
33+	36	40.0
Missing	1	1.1
Total	90	100.0
Gender		
Female	65	72.3
Male	24	26.7
Missing	1	1.1
Total	90	10.0
Race		
White, Caucasian	70	77.8
Black, African American	8	8.9
Missing	12	13.3
Total	90	100.0
Years in school		
First	11	12.2
Second	16	17.8
Third	17	18.9
Fourth	44	48.9
Missing	2	2.2
Total	90	100.0
First generation college student		
Yes	54	60.0
No.	35	38.9
Missing	1	1.1
Total	90	100.0
Academic major		
Business	10	11.1
Education	10	11.1
STEM	8	8.9
Psychology, sociology, anthropology	19	21.1
Arts, acting, music	3	3.3
Law	1	1.1
Medicine	8	8.9
Other	29	32.2
Missing	2	2.2
Total	90	100.0

Note. Some percentages may not sum to 100% due to rounding error, STEM = science, technology, engineering, and mathematics.

Table 2 provides descriptive statistics and Cronbach's alpha coefficients for IP (the dependent variable in this study) and EI (the moderator variable) and Figure 1 shows frequency histograms for those variables. Visual inspection of the distributions suggested that both IP and EI were approximately normally distributed and this visual impression was confirmed statistically by Shapiro-Wilk tests of normality. According to the results of those Shapiro-Wilk tests, neither IP ($S\text{-}W = 0.99$, $df = 90$, $p = .713$) nor EI ($S\text{-}W = 0.98$, $df = 90$, $p = .12$) deviated significantly from the normal curve. Although the hierarchical multiple regression analysis used in this study does not require that variables be normally distributed (for instance, dichotomously scored variables are allowed as predictors), violations of some of the statistical assumptions of the technique can be avoided when continuous variables in the analysis, both criterion and predictor variables, are normally distributed. The CIPS (measuring IP) showed excellent internal consistency reliability, as measured using Cronbach's alpha ($\alpha = 0.94$), and the SIPI (measuring EI) showed acceptable reliability ($\alpha = 0.78$).

Table 2

Descriptive Statistics with 95% Confidence Intervals, and Cronbach's Alpha for Measures of IP and EI

Variable	*N*	Min	Max	*M*	*SD*	95% CI	Cronbach's α
Impostor Phenomenon (IP)	90	23	90	55.48	16.94	[51.94, 59.03]	.94
Ethnic Identity (EI)	90	58	144	99.74	16.97	[96.19, 103.30]	.78

Note. $N = 90$.

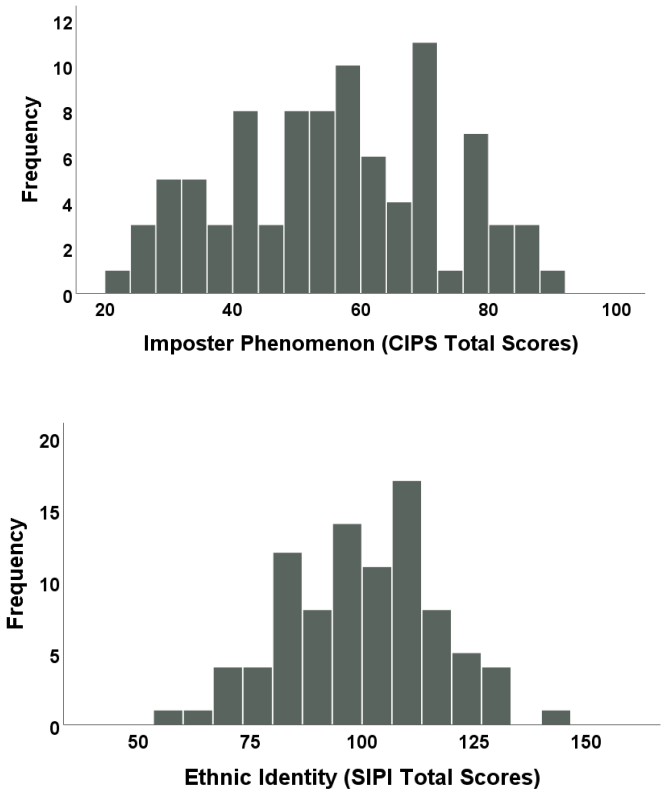

Figure 1. Frequency histograms for measures of IP (measured by CIPS total scores on the top) and EI (measured by SIPI total scores on the bottom).

Hierarchical Multiple Regression Analysis

A three-step hierarchical multiple regression analysis was used to address both of the study's research questions. The continuous dependent variable in that analysis was IP, measured by scores on the CIPS. The nominal scale (categorical) independent variable entered at Block 1 was LE, represented by three levels: PWI, HSI, and OL. Multiple regression analysis can accept dichotomously scored nominal scale variables as predictors, but not variables defined by three or more categories (Meyers et al., 2017). The use of multi-category nominal scale predictor variables requires recoding the multi-categorical variable so that each of the *k* categories of the variable is represented by a

separate dichotomous variable, a procedure called dummy variable coding. In this study, the three-category LE variable was dummy variable coded into three dichotomous variables, PWI, HSI, and OL, each scored 0 to indicate that a case *did not* experience that LE or 1 to indicate that the case *did* experience that LE. After dummy variable coding a *k*-category predictor variable, not all *k* dichotomous variables are needed as predictors in the multiple regression analysis. Not all *k* dichotomous variables are needed because the variables are redundant; if one knows a case's "score" (0 or 1) on $k - 1$ of the dichotomous variables, the score on the k^{th} dichotomous variable is also known. For that reason, only $k - 1$ of *k* dummy variables are entered as predictors in a multiple regression analysis (Meyers, et al., 2017). In this study, the dichotomous dummy variables PWI and HSI were entered at Block 1 of the hierarchical multiple regression analysis. Entered at Block 2 were EI scores (mean-centered to reduce multicollinearity as recommended by Warner, 2008). Finally, the interaction terms EI x PWI and EI x HSI (each calculated using mean-centered EI scores) were entered at Block 3.

The significance of R^2 at Block 1 (with only LE represented in the model) evaluated the degree to which LE was related to IP (RQ1). The significance of the increase in R^2 from Block 1 (with only LE in the model) to Block 2 (with both LE and EI in the model) tested the main effect of EI, that is, the degree to which EI explained unique variance in IP (i.e., variance that was not predicted by LE). The change in the significance of R^2 from Block 2 (without interaction terms in the model) to Block 3 (with interaction terms included in the model) evaluated the degree to which EI moderated the relationship between LE and IP (RQ2).

Tests of the statistical assumptions. Before performing the hierarchical multiple regression analysis, several of the statistical assumptions upon which that procedure is based were evaluated. The procedure assumes a continuous dependent variable. That continuous dependent variable in this study was IP, measured by the CIPS instrument. Multiple regression also assumes that there are two or more predictor variables that can be either continuous or dichotomous. In this study, the two predictors were: (a) the three-category LE variable, represented by two dichotomously scored dummy variables, PWI and HSI, and (b) EI, which was a continuous variable measured by the SIPI instrument. Multiple regression also assumes independence of observations, meaning that the responses from one case cannot be influenced by the other cases. Since participants were independent of each other, there is nothing in the design of this study that would cause a violation of that assumption. The remaining statistical assumptions were evaluated through the tests described next.

Linearity of relationships between continuous predictors and dependent variable. The hierarchical multiple regression procedure assumes that the dependent variable does not show a strongly nonlinear relationship to continuous predictor variables in the analysis. It is not essential that the variables be strongly linearly related, just that they not be strongly nonlinearly related. Multiple regression is based on the Pearson correlation that measures the strength of linear relationships between variables. The strength of the relationships between variables that are related in a strongly nonlinear manner is not captured accurately by the Pearson correlation. The linearity of the relationship between EI and PI was evaluated using a scatterplot, shown in Figure 2,

through which both a quadratic curve and line were fitted. Goodness-of-fit was measured by R^2. For the curve, $R^2 = 0.016$; for the line, $R^2 = 0.008$. Although the relationship between EI and IP was not strongly linear, it was also not strongly nonlinear and it was concluded that the assumption of linearity (or more precisely, the assumption of the absence of nonlinearity) was satisfied.

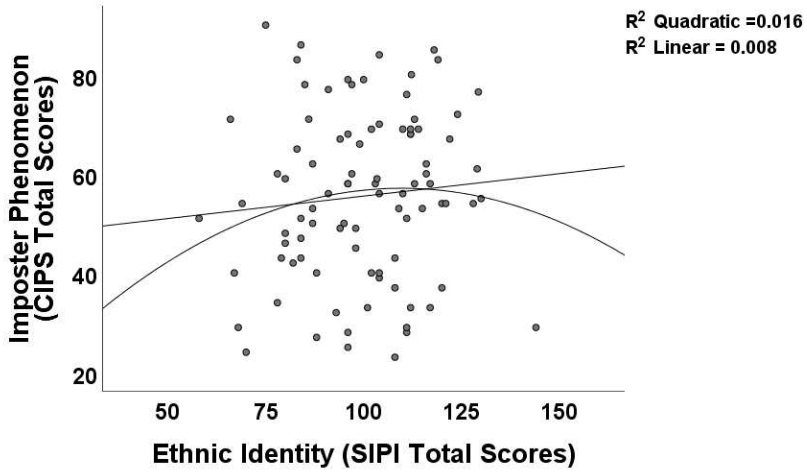

Figure 2. Scatterplot depicting the relationship between EI and IP.

Homoscedasticity of residuals. Multiple regression analysis also assumes that the variability of prediction errors is approximately the same for all predicted values. In a bivariate regression analysis, this appears as approximately equal scattering of points around the regression line fitted through a scatterplot (Tokunaga, 2019). In multiple regression analysis, the homoscedasticity of residuals assumption is tested by examining a plot of standardized residuals against standardized predicted values as seen in Figure 3. The points in Figure 3 show approximately equal vertical scattering across the entire length of a horizontal line fitted through them, indicating approximately equal variability

of residuals for all predicted values. It was concluded from this observation that the assumption of homoscedasticity of residuals was satisfied (Tabachnick & Fidell, 2013.

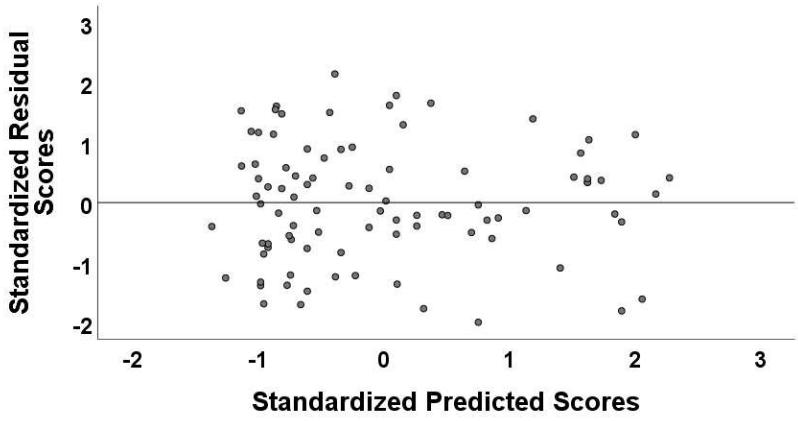

Figure 3. Plot of standardized residuals against standardized predicted scores.

Absence of multicollinearity. Multiple regression further assumes that the predictors are not so strongly correlated as to be excessively redundant. Multicollinearity was evaluated in this study by calculating tolerance values for all predictors. Tolerance values indicate the proportion of variance in each predictor that is not explained by the other predictors in the model. Tolerance values less than .10 can be indicative of excessive multicollinearity (Tabachnick & Fidell, 2013). Tolerance values for the predictors in this study ranged from 0.15 (for EI) to 0.64 (for the HSI dummy variable). It was concluded that multicollinearity was not excessive.

Absence of outliers. Just as bivariate outliers distort the placement of the bivariate regression line and attenuate the bivariate correlation, multivariate outliers exert a disproportionate influence on the results of a multiple correlation and regression analysis. Multivariate outliers were screened during data cleaning, and multivariate outliers were

also evaluated using the casewise diagnostics tool available from a preliminary run of the multiple regression analysis. That casewise diagnostics tool screened for individuals whose actual EI scores fell more than three standard deviations from their predicted EI scores. No such cases were identified and it was concluded that there were no multivariate outliers.

Normally distributed residuals. The final assumption of the multiple regression analysis is that the residuals (differences between actual EI scores and predicted EI scores in this study) should be normally distributed. Figure 4 shows a frequency histogram of the residuals from the multiple regression analysis. That plot provides a reasonably good visual approximation to the normal curve and a Shapiro-Wilk test of normality also found no significant deviation from a normal distribution, *S-W* = 0.98, *df* 90, *p* = .308.

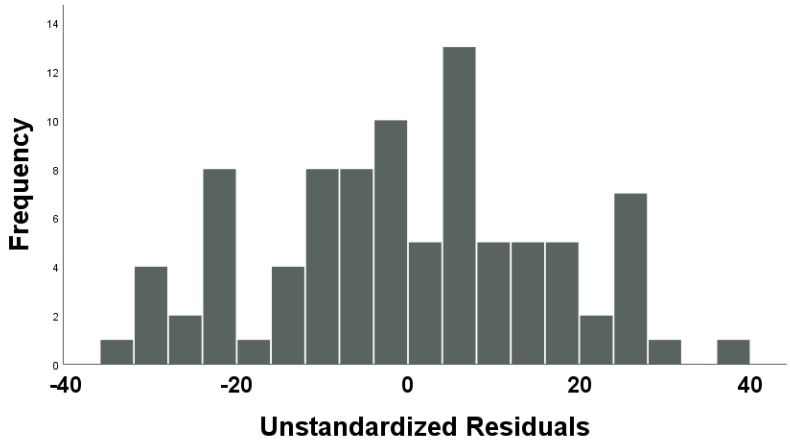

Figure 4. Frequency histogram of residuals from the hierarchical multiple regression analysis.

Hierarchical multiple regression analysis. Having established that all assumptions of the hierarchical multiple regression analysis were satisfied, the analysis

was performed. The results of the analysis will be presented first, followed by a discussion of how those results answered the study's research questions. Table 3 shows correlations between the variables in the analysis, Table 4 summarizes the model at each block, and Table 5 provides regression coefficients for models at each block with tests of the significance of those regression coefficients. Finally, Figure 5 shows a plot of IP means in each of the three types of LEs.

Table 3

Correlations Among Variables in the Hierarchical Multiple Regression Analysis (N = 90)

Variables		1	2	3	4	5	6
1	IP (CIPS total scores)	--					
2	PWI	.17	--				
		(.108)					
3	HSI	-.15	-.57	--			
		(.169)	(<.001)				
4	EI (SIPI Total scores)	.09	-.17	.05	--		
		(.395)	(.113)	(.665)			
5	EI x PWI	.13	-.14	.08	.68	--	
		(.233)	(.183)	(.447)	(<.001)		
6	EI x HSI	-.03	-.03	.05	.62	.00	--
		(.782)	(.777)	(.621)	(<.001)	(.968)	

Note. Values in parentheses are two-tailed significance levels, IP = Impostor Phenomena, CIPS = Clance Impostor Phenomena Scale, PWI = Predominantly White Institution, HSI = Historical Serving Institution, EI = Ethnic Identity, SIPI = Social Personal Identity Scale.

Table 4

Hierarchical Multiple Regression Model Summaries at Blocks 1, 2, and 3 (N = 90)

Block	*R*	R^2	Std. err. estimate	ΔR^2	*F* Change	*df*1	*df*2	Sig. *F* change
1	.181	.033	16.85	.033	1.47	2	87	.236
2	.216	.046	16.82	.014	1.25	1	86	.266
3	.248	.062	16.89	.015	0.68	2	84	.511

Note. The dependent variable was IP, measured by the CIPS. The predictor at Block 1 was LE, represented by PWI and HSI. The predictor at Block 2 was EI, measured by mean-centered SIPI scores. The predictors at Block 3 were the PWI x EI and HSI x EI interaction terms.

Table 5

Tests of the Regression Coefficients at Blocks 1, 2, and 3 (N = 90)

		Unstandardized coefficients				
Block	Predictors	*B*	Std. Err.	*β*	*t*	*P*
1	Constant	54.38	3.44			
	PWI	4.39	4.37	.13	1.01	.318
	HSI	-2.65	4.73	-.07	-0.56	.576
2	Constant	53.90	3.46			
	PWI	5.25	4.43	.16	1.19	.239
	HSI	-2.33	4.73	-.06	-.049	.624
	EI	0.12	0.11	.12	1.12	.266
3	Constant	53.63	3.61			
	PWI	5.88	4.54	.17	1.29	.199
	HSI	-1.87	4.87	-.05	-0.38	.702
	EI	0.19	0.28	.19	0.69	.495
	EI x PWI	0.04	0.32	.03	0.13	.899
	EI x HSI	-0.22	0.32	-.14	-0.69	.492

Note. PWI = Predominantly White Institution, HSI = Hispanic Serving Institution, EI = Ethnic Identity.

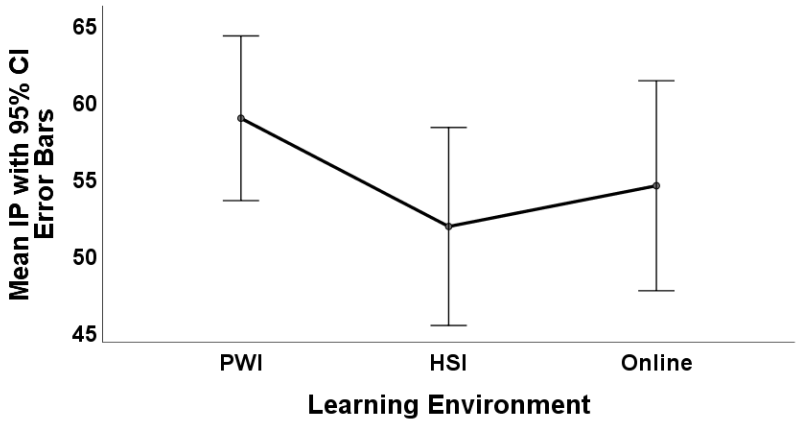

Figure 5. Mean IP as measured by the CIPS as a function of PWI (*n* = 39), HSI (*n* = 29), and OL environments (*n* = 24), with 95% CI error bars.

The results at Block 1 indicated that LE was not significantly related to IP, R^2 = .033, $F(2, 87) = 1.47$, $p = .246$. This finding means that differences in IP means were not significantly different from one type of LE to the next (Figure 5). Among students enrolled in a PWI (*n* = 39), the mean level of IP was 58.77 (*SD* = 18.13), 95% CI [52.89, 64.65]; among students enrolled in a HSI (*n* = 29), the mean level of IP was 51.72 (*SD* = 16.16), 95% CI [45.33, 58.11]; and among students enrolled in an OL university (*n* = 24), the mean level of IP was 54.38 (*SD* = 15.34), 95% CI [47.90, 60.85].

With the addition of EI at Block 2, R^2 was increased by .014 bringing the overall R^2 at Block 2 to .046. This was not a statistically significant increase in R^2, $F(1, 86)$= 1.25, $p = .266$, nor was the overall R^2 at Block 2 statistically significant, $F(3, 89) = 1.40$, $p = .249$. This finding indicated that EI did not explain a statistically significant unique portion of variance in IP (i.e., variance that was not already explained by LE). Not only did EI not explain significant *unique* variance in IP, the simple bivariate correlation

between the variables, $r(88) = .09$, $p = .395$, showed that EI did not explain *any* significant portion of the variance in IP, unique or shared with LE.

With the addition of the interaction terms at Block 3, R^2 was increased by .015 to provide an overall $R^2 = .062$. This was not a statistically significant increase in R^2, $F(2, 84) = 0.68$, $p = .511$, nor was overall R^2 significant at Block 3, $F(5, 84) = 1.10$, $p = .365$. This finding indicated that the interaction of EI x LE interaction (or "moderator") effect did not explain significant unique variance in IP (i.e., variance that was not already explained by LE and EI). EI did not significantly moderate the relationship between LE and IP.

Interpretation of the findings of the hierarchical multiple regression analysis as they are related to the study's research questions began with the test of the significance of the EI x LE interaction (or moderator) effect at Block 3 (RQ2). For the reason that in the presence of a significant LE x EI interaction effect there can be no straightforward interpretation of the main effects of either of those variables. In the absence of a significant interaction effect, the main effects of LE (RQ1) and EI can be evaluated by examining results at Blocks 1 and 2, respectively, where the interaction terms have not yet been entered.

Test of the significance of the ethnic identity x learning environment moderator effect (RQ2). The fact that the addition of the EI x LE interaction terms at Block 3 in the hierarchical multiple regression analysis failed to raise R^2 significantly from its value at Block 2 (without the interaction terms) indicated that EI did not significantly moderate the relationship between LE and IP. Expressed in other words, the relationship between

LE and IP did not change significantly from one level of EI to another. It was concluded from the hierarchical multiple regression analysis that there was insufficient evidence to reject the null hypothesis associated with Research Question 2: Ethnic identify does not significantly moderate the relationship between impostor syndrome and LE among Hispanic college students.

Test of the main effect of learning environment. Having determined that the relationship between LE and IP was not moderated by EI, attention turned to an analysis of the main effects, beginning with the main effect of LE evaluated at Block 1. At Block 1 the only predictor was LE. The fact that $R^2 = .033$ at Block 1 was not significant indicated that LE was not significantly related to IP; levels of IP were about the same in all three LEs. It was concluded that there was insufficient evidence to reject the null hypothesis associated with Research Question 1: There is no statistically significant relationship between impostor phenomenon and type of LE among Hispanic college students.

Test of the main effect of ethnic identity. It was not one of the stated purposes of this study to evaluate the relationship between EI and IP (i.e., the main effect of EI), but the hierarchical multiple regression analysis that was performed did address that relationship. The lack of significant change in R^2 from Block 1 (with only LE in the model) to Block 2 (with both LE and EI in the model) indicated that ethnic identity failed to explain a significant unique portion of variance in IP. In other words, the main effect of EI was not statistically significant.

Summary

Chapter 4 included a review of the purpose of the study and the two research questions with corresponding hypotheses. Evaluations of assumptions and data collection were reviewed. Baseline descriptive and demographic characteristics were provided as well as results of tests of statistical assumptions conducted prior to hierarchical regression analyses. The Results section included sample characteristics and statistical analysis findings. After establishing that all statistical assumptions of the procedure were satisfied, a three-step hierarchical multiple regression analysis was performed which addressed the study's research questions. The three-step hierarchical multiple regression analysis returned nonsignificant findings regarding RQ1, indicating that IP was unrelated to LE. Results returned regarding RQ2 indicated that EI did not significantly moderate the relationship between LE and IP. The null hypothesis for both research questions failed to be rejected.

Chapter 4 briefly presented a review of the purpose of the study, the study questions and hypotheses. Recruitment, data collection time-frame, and response rates were also presented, followed by population characteristics, statistical assumptions, and analysis findings. Finally, a summary of the answers to the research questions and corresponding hypotheses closes the chapter. While Chapter 4 included findings of the research, Chapter 5 will explain why the findings may have emerged as they did. I will interpret the meaning of the results and attempt to reconcile the results of this study with findings from previous research. The study's limitations will be considered with respect to how some of the characteristics of the study may have influenced the results.

Recommendations for future related research will be offered, which might capitalize on the strengths of this study while correcting its limitations. Finally, I will consider the implications of the findings of this study.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this quantitative correlational study was to examine the relationship between IP, EI, and LE among Hispanic university students with GPAs of 3.0 or higher. IP served as the continuous DV and was measured by the CIPS. The IV was LE, with three levels: PWIs, HSIs, and OLs. EI was a second IV which was examined in this study as a potential moderator of the relationship between LE and IP. Strength of EI was measured in this study by the SIPI. Two research questions were examined. These research questions are listed along with their corresponding null and alternative hypotheses.

RQ1: Is there a statistically significant relationship between IP and type of LE among Hispanic college students?

$H_0 1$*:* There is no statistically significant relationship between IP and type of LE among Hispanic college students.

$H_a 1$*:* There is a statistically significant relationship between impostor syndrome and type of LE among Hispanic college students.

RQ2: Does EI significantly moderate the relationship between IP and LE among Hispanic college students?

$H_0 2$*:* EI does not significantly moderate the relationship between IP and LE among Hispanic college students.

$H_a 2$*:* EI does significantly moderate the relationship between IP and LE among Hispanic college students.

This study was conducted to address the U.S. Hispanic student population's high dropout rates and low educational achievement. The theoretical framework for this study is comprised of two theories: SIT and SCT. A three-step hierarchical multiple regression analysis was performed to address each research question. The results indicated an insignificant relationship between IP and LE (RQ1). Moreover, EI did not significantly moderate the relationship between LE and IP (RQ2). Explicitly, LE and IP were unrelated at all levels of EI.

In this chapter, I explain interpretations of findings, limitations of this study, potential implications for positive social change, and recommendations for further research.

Interpretation of the Findings

The findings in this study did not confirm findings of the peer-reviewed literature presented in Chapter 2 suggesting an IP, LE, and EI correlation. Results regarding RQ1 indicate that changes in IP were not significantly different from one LE to the next.

The results of this study also suggested that the relationship between IP and LE with EI as a moderator would most likely not be observed in Hispanic university students as with African American university students. Peteet et al. (2015) examined the association of IP with psychological distress and self-esteem in 177 African American students from brick and mortar colleges and universities across the country, and impostorism was found to be positively associated with psychological distress and negatively associated with self-esteem. Expressly, higher levels of impostorism predicted higher psychological distress and lower self-esteem. According to Leary (2000), low self-

esteem contributes to misattributions of success, a core element of impostorism. Additionally, Peteet et al. (2015) noted that none of the participants in their study reported attending a HBCU. As a result, Peteet et al. (2015) theorized that feelings of impostorism may not be experienced in African American students who attend HBCUs since comparison and categorization experiences would be different. The suggestion that environment, social comparison, and categorization pressures may distinctively impact the IP experience for minority college students prompted the investigation of this study. Lige et al. (2017) investigated the relationships between EI and IP among 112 African American college indicated that students who perceived their membership with a group positively reported lower levels of IP than students who regarded group membership negatively. However, this study did not demonstrate a correlation between IP, EI, and LE possibly due to the students in each school experiencing somewhat similar protections afforded by each environment. Specifically, the social and categorization pressures in the OL and HSI schools may indeed be less than in a PWI; however, no significant differences were noted since the PWI chosen for this study may have comparably offered similar protections as the OL and HSI by providing relatable and positive Hispanic role models in staff and faculty. Solórzano, Ceja, and Yosso (2000) suggested environmental distress and social factors in minority students who attended PWIs who believed they had to prove themselves by working harder. Festinger (1954) said that individuals continually make self and other evaluations across a variety of domains. Festinger explained that individuals mainly seek to compare themselves against others (i.e., peers, professors) whom they believe to be reasonably similar. Social comparison and self-evaluation is

why environment may be a critical factor in the Hispanic student experience, especially for those students who may have no positive ethnic role models to counter negative stereotype beliefs. For example, if a negatively stereotyped Hispanic student categorizes his or herself to a like-minority social reference whose attributes are viewed negatively through stereotypes, their cognitive dissonance may increase, and they may despair. Similarly, if a stereotyped Hispanic student compares his or herself to nonminority students with attributes they believe are unobtainable, cognitive dissonance may increase, and they may despair. However, intelligent Hispanic role models in the position of faculty and staff may have helped dispel or combat the pressures of social comparison and categorization for the participants from the PWI.

Cokely et al. (2013) found that EI is predictive of IP scores in mixed minority students. Cokely et al. studied ethnic minority differences in minority status stress, impostor feelings, and mental health and contributors to minority status stress and impostor feelings among 111 multi-ethnic minority college students from the University of Texas at Austin. The Cokely et al. (2013) hypothesis was that students who are more highly stigmatized and stereotyped as having lower intelligence (i.e., African American and Latino) would struggle more with impostor feelings (Cokely et al., 2013). Cokely et al. (2013) found that minority status stress and IP were significantly correlated with psychological distress and psychological well-being for all of three ethnic minority groups (Asian, African American, and Latino). The findings were unexpected in regard to the Asian student population given their stereotype as a highly intelligent and hard working group. Possible explanation for the results of the Asian students' high

impostorism and minority status stress results may include meeting perceived high performance expectations as well as a lower representation of relatable and supportive Asian faculty and staff. Cokely et al. (2013) reported IP as being linked to decreased academic self-concept. Low academic self-concept associated with IP may conceivably be a mechanism influencing degree attainment for Hispanic college students. In the year 2013, the University of Texas at Austin was a PWI where minority students would possibly experience the aforementioned social comparison and categorization pressures. I chose to examine IP and EI in three different LEs based on the results and suggestions from Cokely et al. (2013) that the IP experience is unique for each minority group and should be uniquely studied. Again, my selected PWI may have mimicked similar social categorization and comparison protections as my chosen HSI and OL learning institution.

Theoretical Explanation

Results of IP and minority student studies have been inconsistent, as previously stated in Chapter 2. The results of this study failed to provide clarity regarding how IP is experienced by Hispanic students in various learning settings. SIT has two socio-relational keystones that may assist in explaining the findings of this study. The first keystone is the student may feel emotional and vulnerable because their self-concept may be enhanced or weakened by perceptions of their identified group norms, expected behavior, and one's expected ability to perform and function in society (McLeod, 2008). Environments implicitly and explicitly dictate expected behavioral norms and ethnic group identity. As previously mentioned, minority individuals are more susceptible to social and emotional vulnerabilities. The individual minority student may experience a

sense of emotional vulnerability that they are a fraud in their role or environment, regardless of their accomplishments. The connection between EI and environment with other minorities has been well documented suggesting that social pressures and emotional vulnerabilities vary between environments. Face-to-face LEs may unintentionally invite social comparisons of self and others more so than OL LEs. Additionally, Lemay and Asmore (2004) stated that EI appears to be an important issue in higher education in the U.S. with one supposition being that ethnicity will handicap students in important ways that are not yet understood. If there is a disparity between the minority populations being served and the professionals providing the services increased risk-taking and the benefits of constructive criticism may be compromised if the student perceives themselves as an other (Lige et al., 2017).

Psychologists Clance and Imes introduced IP in 1978, defining it as an internal experience of intellectual phoniness in people who believe that they are not intelligent, capable, or creative despite evidence of high achievement. Some researchers believe that the emotional vulnerabilities and IP consequences hit minority groups harder, as they may feel more like outsiders or others. For example, Devos and Torres (2007) and Hofstede (2011) suggested that students who are of European or Anglo decent comfortably approach professors and articulate disagreements and ask questions. This is due to their acceptance of a low-power distance culture, with little emotional distance, a limited dependence on their professors and a greater degree of interdependence (Hofstede, 2011). However, students from Hispanic and Asian cultures place a comparatively high-level of respect for people in positions of superiority and power.

These students may be less willing to participate in discussions, risk-taking debates, or question those with authority (Hofstede, 2011). Thus, a lack of representation in faculty and staff combined with the possible sense of discrimination may increase stress and anxiety in minority students. However, a lack of representation was not necessarily experienced in these three LEs since one is an OL with very limited, if any, face-to-face interaction, and the HSI and PWI both provided plenty of minority representation in faculty and staff.

The second keystone is that the individual's identified in-group must compare favorably with out-groups if the student's self-concept is to be maintained (McCleod, 2008). Devos and Torres (2007) said that the more Latino students identified with Latinos and stereotyped Latinos as low academic achievers, the less they identified with academic achievement. Devos and Torres (2007) also demonstrated that the more Latino students identified with significant others as high academic achievers, the more likely the student was to identify with academic achievement. Additionally, when a student does not identify with their academic LE, she or he is more likely to underperform and seem to be indifferent toward low academic performance evaluations (Cokely, 2002). Depending on their performance, the Hispanic student faces the possibility of confirming negative stereotypes about their identified social and ethnic group (Cokely, 2002), leading them toward academic disengagement. Therefore, a connection to LE enables one to attribute knowledge and ownership in personal abilities and achievement and abate feelings of IP (Clance & Imes, 1978). Based upon the conclusions of Devos and Torres (2007), Lige et al. (2017), Peteet et al. (2015), and Phinney (1996) and SIT, this study hypothesized that

environment would correlate with levels of IP. However, the findings of this study did not confirm this hypothesis. The partner schools selected for this study were selected over three years prior to the implementation of data collection and active unforeseen changes were occurring within each learning institution. The OL university Hispanic students learn behind a computer screen where the above described pressures and factors may be filtered or lessened with the exception of the academic face-to-face residencies that are not mandatory for all students. The HSI's Hispanic students are the majority group and have faculty and staff that model cultural identity, pride, and inclusiveness. The Hispanic students attending the partner PWI are unquestionably a minority group, however while data was being collected for this study the PWI was one of nine schools awarded the Seal of Excelencia by the non-profit organization Excelencia in Education. The award was earned for the school's leadership in intentionally serving Latino students and ensuring their success. Excelencia in Education reported that since the 2015-2016 academic year, Latino student enrollment at the partner PWI increased 16.2%, and Latino graduation rates have increased over 16%. Moreover, the number of Latino faculty at the university has increased over 20% and staff increased over 50%. I received emails from participating Hispanic students attending the PWI thanking me for assisting them in learning more about themselves and for caring about their population.

The social pressures, constraints, and protections varied little between each participating LE. Perhaps LE is related to IP and EI in the Hispanic college student experience between OL and PWI's and PWI's and HSI's but the school chosen to represent the PWI in this study was quickly and effectively evolving to serve their

Hispanic students. The partner PWI's evolvement to intentionally serve Hispanic students may have unintentionally compromised the internal validity of this study. Another possibility is the students who chose to participate in the study were simply more academically involved. Afterall, one of the criteria for participation in the study was having a minimum 3.0 GPA. Almost half of the participants reported being in their fourth year of the four-year degree, with the remainder about equally distributed between the first, second, and third years. I reviewed earlier studies to compare EI measurements. The EI measurement for participants in this study was $\alpha = 0.78$. The EI measurement for participants in the study by Cokely and Chapman (2008) was $\alpha = 0.73$. The EI measurement for participants in the study by Brouillard (2005) was $\alpha = 0.87$. EI measurements of this study were somewhat comparable to those in other studies. However, the outcomes varied. For example, Brouillard (2005) found that self-esteem did correlate with EI, but neither self-esteem nor EI correlated with academic success in Mexican-American university students. SE is well known to be correlated with IP (Clance & Imes, 1978). Devos and Torres (2007) found that the more Hispanic college students identified with their culture, the less they identified with academics in PWIs. This is contrary to the findings by Ewing et al. (1996) who found that African American students who embraced an African American ethnic EI abated the IP experience; likewise, for Cokely and Chapman (2008). It appears that high EI is more effective for African American student success than it is for Hispanic students. Another possible influencing variable in these studies is the LE. The African American participants from

one study attended a HBCU (Brouillard, 2005). Consequently, the possibility of LE impacting IP in Hispanic students should not yet be ruled out.

SCT focuses on the cognitive process by which individuals self-categorize, self-define, and categorize others in terms of membership. Specifically, how they fit and operate within their defined group. There is individual behavior and group (collective) behavior which the student experiences and engages. EI has proven to be a key factor for a student tending toward group behavior and group definitions (Onorato & Turner, 2004). Considering these processes, Hispanic students attending the HSI may not experience cognitive dissonance between their individual and group behavior, since the need to shift between groups may be lessened and group behavioral expectations may be similar to individual behavior due to comparable ethnic identities.

Hispanic students attending a PWI may not experience the same protections from social and cognitive pressures. Rather, they may be conflicted by the need to reduce the discomfort of within-group processes by altering their self-definition (EI), or individual identity to fit in. However, Hispanic students attending the partner PWI may not have experienced this dissonance even though they represent one of the smallest minority groups on campus. The reason being the university's intentional concerted effort to employ more Hispanic faculty and staff in order to reduce the Hispanic student drop-out rate and increase Hispanic student retention and graduation rates. The partner PWI also established a Latino Student Union with weekly events and cultural educational programs.

Hispanic students attending other PWI's that are not intentionally focusing on the needs of Hispanic students may experience the discomfort of feeling out of place, which is a key component of IP. Hispanic students attending a PWI may also experience the tensions to shift from individual to collective behavior, and how to do that. Each individual has various possible personal and social identities and can shift between them psychologically and behaviorally depending on their perception of the situation and their self-concept (Turner, 2007). Did the students attending the participating HSI, PWI, and OL choose to conform to expectations of the overarching social ethnic environment? Who knows? This study, however, was unable to demonstrate or support this possible dynamic, suggesting that further research is still needed.

Limitations of the Study

Many of the findings of the research studies reviewed in preparation for this study could not be generalized to a Hispanic student population due to their low number of Hispanic participants. Similarly, this study ought not to be generalized to the Hispanic university student population given the questionable internal validity, and findings of insignificance in the relationship between IP, LE and EI. The instruments (CIPS, SIPI) used to collect data proved to be reliable. The CIPS (measuring IP) showed excellent internal consistency reliability, as measured using Cronbach's alpha ($\alpha = 0.94$), and the SIPI (measuring EI) showed acceptable reliability ($\alpha = 0.78$). Additionally, the online data link provided through the database, Psychdata, was trustworthy in confidentiality and utility.

Another possible limitation in this study was in requiring students to have a 3.0 or higher GPA to participate in the research. The objective in this decision was to filter out students that were not high-performers since impostorism was a central focus. Moreover, higher levels of impostorism have been linked to higher GPA (King & Cooley, 1995). However, by limiting the GPA diversity of the Hispanic sample, I may have automatically, albeit unintentionally, limited the sample, including EI and IP. In a correlational study, this could be catastrophic. In order for two variables to be correlated, they must co-vary. In order for two variables to co-vary, each variable must be free to vary as fully as possible across its full theoretical range. By limiting the variability of my sample, I may have inadvertently attenuated the sizes of the correlations such that my analysis may have failed to demonstrate the results it would have likely indicated if I had allowed the variables to vary freely.

Last, another limitation of this study was the use of the survey method, as it relied on self-report. Several variables may have influenced the results, including intended deception of participants and difficulties in communication. For example, a few students did not answer the question regarding where they attended school. It had been assumed that participating students would answer all questions honestly.

Recommendations

What was noted in this research is that school leadership can make changes to increase the retention and graduation rates of Hispanic students as noted by the success realized by participating PWI. As stated in Chapter 1, the Hispanic student dropout rate represents both an economic and a social concern given the growing Hispanic population

in the U.S. (PRC, 2017). Literature discussed in Chapter 2 revealed inconsistent results in studies on university minority students, IP and LE, or IP and EI. This study sought to discover the correlation between the three variables: IP, LE, and EI in a Hispanic student population. The university chosen to represent the PWI in this study no longer represents a typical PWI even though Hispanic students comprise one of its smallest minority groups. The internal validity of this study may have been compromised by the selected university's participation as a PWI. It is recommended that this study be replicated using another more appropriate PWI. Lige et al. (2017) postulated that EI attitudes and feelings of IP may differ between students in different LEs. Moreover, it is also recommended that participation in the study not be limited to students with a GPA of 3.0 and over but be open to all registered Hispanic students in order to more effectively discover correlation between impostor phenomena, LE, and EI with this student population

Implications

The possible social change implications of this study involve increased Hispanic college student retention rates and increased number of graduates. Since 2012, Hispanic students represent the largest university student group in the U.S., as well as the largest dropout group in the world (PRC, 2016). Individuals who earn a college degree have higher earning potential and ability to contribute economically to their family and community (NRCHCF, 2018). Therefore, degree completion is vital economically to the individual, family, and society. Psychosocially, degree completion may help dispel stereotypes associated with Hispanic students as being lazy and/or unaccomplished, and willing to accept underpaid wages (Arana, Castaneda-Sound, Blanchard, & Aguilar,

2011; McCleod, 2015). In addition to intellectual development, college is the place where several major developmental stages occur during the young adult student's life. Unsuccessful resolutions of these developmental tasks may lead to personal adjustment problems (Caballero, 1997). Organizationally, universities may benefit by the increased pool of capable potential Hispanic candidates for faculty and staff positions in their schools. The benefits and social change implications listed here appear to be exemplified by the participating PWI in this study and theoretically imply that environmental changes to encourage inclusiveness of Hispanic students may increase the number of Hispanic graduates.

Conclusion

Although this study demonstrated no significant relationship between IP, EI and LE among Hispanic college students, it contributes to the literature centered on understanding the Hispanic college student experience. This study contributes to research design, theoretical framework, and assessment selection toward additional quantitative research studies. A notable revelation discovered at the end of this research study indicated that Hispanic student retention rates increased at the partner PWI that evolved to serve it's Hispanic population. Reyes (2018) observed differences in terms of when students identified culturally, interacted socially with one another with faculty and administrators and non-Hispanic peers depending upon their LE. Lige et al. (2017) said that ethic identity attitudes and feelings of IP may differ between students in different LEs. Reyes (2018) suggested that schools do influence Hispanic students' ideas about their identity, purpose, and available opportunities. Moreover, a recent report stated that

HSIs reported graduating over 45% of Hispanic college students in 2017-2018 (Espinosa, L., Turk, J., Taylor, M., & Chessman, H., 2019). Retention rates for students in HSIs were also marginally higher than other learning institutions (67% vs 66%) in 2017-2018 (Espinosa, et al., 2019). Therefore, though there have been improvements, the elevated drop-out rates remain a social concern. A qualitative research study provides a supplementary starting point for quantitative researchers to more deeply explore problems and opportunities. As a result, additional quantitative research remains necessary to provide knowledge for why and how to attend to the continually growing Hispanic population and Hispanic college student dropout rate. An empirically data-informed foundation is essential for those working to develop new pathways to close persistent equity gaps for today's college students.

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Appendix A: Permission to Use the CIPS

On Tuesday, May 1, 2018, 8:44:36 PM EDT,

Dear Marie,

I am so pleased you are doing this study. We need more research for persons of color. Dropout is such an important issue. When I was at XYZ College, I was very concerned about working on this issue with minority student. Also, at XYZ state for minority students at the Master's and D. doctoral level. I grew up in XYZ and dropout is also big for those students. I am so glad you are doing this. Do You Have your design yet.? Anyway, you may be interested in a recent talk I gave at NIH. One of the main students organizing the Keynote was Spanish I am glad you and XXXX are in correspondence.

Best Regards,

From:

Sent: Tuesday, May 01, 2018 5:37 PM

To: marie

Cc:

Subject: Fw: Permission requested to use the CIPS

Dear Marie,

I am replying to your Impostor Phenomenon (IP) request on behalf of Dr. XYZ. Can you please tell us the name/address of your University, Department, Degree, etc. Is your study being conducted/funded as a part of XYZ Foundation? Also, do you plan on using the CIPS in English or translating it to Spanish?

You have permission to use and make copies of the scale, *Clance Impostor Phenomenon Scale (CIPS)*, and I have attached it along with the scoring.

Also, please read the permission form, included with the scale, and reply with your consent.

Appendix B: Permission to Use the SIPI

Hi Marie,

Thank you for your email and interest in my work. I'll attach the SIPI instrument here.

There is much more work to do.

Stay in touch,

Appendix C: Demographic Questionnaire

Which learning environment are you currently enrolled in?

- XYZ
- XYZ
- XYZ

What type of major are you enrolled in?

- Business
- Education
- STEM (i.e., engineering, chemistry, computer/information technology, mathematical sciences, physics)
- Psychology, Anthropology, Sociology
- Arts, Acting, Music
- Law
- Medicine
- Other _____

What year of school are you presently completing in your program?

- First
- Second
- Third
- Fourth

What is your age?

- 18-22

- 23-27
- 27-31
- 32 or over

What is your race?

- White
- Black, African American

Are you Hispanic

- Yes
- No

Are you of Hispanic, Latino, Chicano, or Spanish origin?

- No, I am not of Hispanic, Latino, or Spanish origin
- Yes, Mexican, Mexican American
- Yes, Cuban
- Yes, Puerto Rican
- Yes, Spanish (Spain)
- Yes, Other: _____ Please specify. (i.e., Argentina, Dominican, Salvadoran, Nicaraguan, Honduran)