PREDICTING THE RELATIONSHIP BETWEEN STUDENT, FACULTY, AND

INSTITUTIONAL DIVERSITY WITH GRADUATION RATES IN HIGHER EDUCATION

by

Hridya C. Mondal

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Philosophy

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APPROVED BY:

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ABSTRACT

The importance and significance of diversifying higher education are undeniable. Research has examined that diversifying higher education may produce more graduates, predominantly minority students. However, more literature is needed on how diversifying faculty and students relate to and impacts overall undergraduate graduation rates in higher education in the United States. This study aimed to gauge the predictive relationships between student diversity, faculty diversity, institutional locale, enrollment size and admissions selectivity and construct a relationship with graduation rates. The study examined a random sample of 291 Title IV, four-year postsecondary institutions, and Integrated Postsecondary Education Data System (IPEDS) employed for the data collection process. From IPEDS, the researcher obtained six years of cohort data from 2015-2020 for race and ethnicity of students and faculty, enrollment, admissions, and 2016-2021 graduation rates data, combined, averaged, and used for analysis. The study utilized a quantitative predictive correlational research design, and multiple linear regression analysis was used to analyze the data. A significant predictive relationship was found ($F = 29.985$, $r = .623$, $p < .001$) between student diversity, institutional locale, enrollment size, admissions selectivity, and graduation rates. However, no significant predictive relationship ($p = .568$) was found between faculty diversity and graduation rates. The effect size was large ($R=0.623$), and the null hypothesis was rejected at the .05 alpha (α) significance level. Future research should be conducted to include more institutions from towns and rural areas to assess the further impact on minority students' graduation rates.

Keywords: Discrimination, diversity, faculty, higher education institution, inequity, minority, White, non-White

Dedication

This research is devoted to my late mother, wife, and children. In late 2020, my mother died of adrenal cancer and could not have surgery because the Covid-19 Pandemic collapsed everything. I dedicated this dissertation to my family, who made innumerable sacrifices to achieve this portentous goal. I am thankful to my wife Rita and my children Raima, Rohan, and Ritika for their support, as I could not provide enough time for them because the dissertation kept me out from them. I would not be where I am today without my family and their support. Their unwavering encouragement and support for the past five years have not gone unnoticed; indeed, it has been the wind beneath my wing. I am grateful to my biggest cheerleaders, my wife, and kids, for encouraging me through the obstacles and many sleepless nights.

Acknowledgments

A successful dissertation requires many people's encouragement, guidance, support, and mentorship. I cannot fulfill my dream without recognizing my dissertation chair, committee members and advisors. I would first like to acknowledge and thank you to my dissertation chair, Dr. Lovik, for his guidance, support, consistence reassurance throughout my coursework and dissertation journey. To my methodologist, Dr. Quindag, thank you for your interest in psychometrics. Otherwise, she would not involve with her current workload and responsibility. I would also like to thank Dr. Rich Jensen for his time, commitment, encouraging words, cooperation, and prayers over the past year towards this project to achieve my dream. Finally, my family, Rita, Raima, Rohan and Ritika, are the foundation of my success.

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List of Abbreviations

American College Test (ACT)

Association of American Medical Colleges (AAMC)

American Association of University Professors (AAUP)

American Indians/Alaskan Natives (AI/AN)

Bureau of Statistics (BLS)

Dual Process Theory (DPT)

Elementary and Secondary Education Act (ESEA)

Grade Point Average (GPA)

Gross Domestic Product (GDP)

Historically Black Colleges and Universities (HBCUs)

Integrated Postsecondary Education Data System (IPEDS)

Institute for Higher Education Policy (IHEP)

Multiple Linear Regression (MLR)

National Association for the Advancement of Colored People (NAACP)

National Center for Education Statistics (NCES)

Pew Research Center (PRC)

Predominately White Institutions (PWI's)

Scholastic Aptitude Test (SAT)

Social Identity Theory (SIT)

Underrepresented Minority (URM)

United States Department of Education (US DOE)

CHAPTER ONE: INTRODUCTION

Overview

The purpose of this quantitative study was to determine the predictive relationships between student diversity, faculty diversity, institutional locale, enrollment size and admissions selectivity and construct a relationship with graduation rates. The study intended to determine whether graduation rates are related to other institutional factors that include geographical locations, enrollment size, and admissions selectivity. Chapter One defines the framework of the research study, problem statement, purpose statement, and significance of the study. Included are a research question, hypothesis, and definitions.

Background

For the past 50 years, the United States' racial/ethnic population composition has changed dramatically (Bureau of Labor Statistics, 2021; Bureau of U.S. Census, 2021). According to the U.S. Census Bureau, in 2021, the total population estimate in the United States was 331.8 million (U.S. Census Bureau, n.d). The population distribution in 2021 was as follows: Whites 60.1%, Hispanics 18.5%, African Americans 13.4%, Asian Americans 5.9%, American Indians/Alaskan Natives 1.3%, and Native Hawaiian/Pacific Islanders 0.2% (Bureau of U.S. Census, 2021). The number of White citizens declined by 28% between 1961 and 2021 because minority populations increased over the past 50 years (Bureau of U.S. Census, 2021; Krogstad, Dunn, & Passel, 2021). The United States Census Bureau projected that by 2050, Caucasians would no longer be the majority group in the United States (Bureau of U.S. Census, 2021; Krogstad et al., 2021). Garriott, Love, and Tyler (2008) suspected that the pattern of population demographic change might have distinct implications for the higher education system in the United States. Despite the population change, African Americans, Hispanics, Native Americans, and Pacific Islanders are

underrepresented at every higher education level compared to Whites and Asians (Bialik, 2018).
The enrollment and attainment gap between African American and Hispanic students and White
and Asian students is exceptionally detrimental because it has a significant impact on student's
future endeavors and long-term social positions to achieve upward mobility (Assari, 2018;
Carter, 2006).

Higher education faculty play an essential role in research, education, and service for the
institutions, from teaching to knowledge development (Bonilla, Dee, & Penner, 2021; Moreno,
Smith, Clayton-Pedersen, Parker, & Teraguchi, 2006). Higher education administrators
acknowledge that to develop students' knowledge, improve teaching and learning, and truly
achieve excellence in academic areas, higher education institutions must sustain the balance of
intellectual capabilities and innovation that materializes from a faculty which is racially and
ethnically diverse (Moreno et al., 2006). Even though higher education administrators indeed
acknowledge the value, wisdom, and intellectual knowledge that diverse faculty bring to the
institution, national and state data suggest that there has been barely any change in the proportion
of minority faculty (Bonilla et al., 2021; Moreno et al., 2006). In 2003, the faculty comprised
85% Whites, 3.6% Asian/Pacific Islanders, 5.6% African Americans, 3.4% Hispanic, and 2%
others (Espinosa, Turk, Taylor, & Chessman, 2019; Turk, 2019). In the past 15 years, there has
been a slight increase in minority faculty, such as 1.4 % for African Americans, 1.3% Hispanics,
7.8% Asian/Pacific Islanders, and 0.5% others, and a slight decrease of 11% in White faculty (de
Brey et al., 2019; National Center for Education Statistics, 2020a). The national data indicated
that among the full-time faculty, 75% were Whites, 12% were Asian/Pacific Islanders, 6% were
African Americans, and 6% were Hispanics (National Center for Education Statistics, 2020a).

Compared to the increased college enrollment for non-White students, minority faculty

representation was significantly lower than their White counterparts (Bonilla et al., 2021).

White males historically dominated higher education institutions (Michalski,

Cunningham, & Henry, 2017). However, the university environment has changed remarkably

over the last half a century, profoundly shifting students, faculty, and staff demographic profiles

(Michalski et al., 2017). Research indicated that some progress had been made to improve

educational opportunities for students of color and increase diversity in higher education;

however, the enrollment and attainment gaps between White students and other minorities still

exist (Michalski et al., 2017). After introducing affirmative action in 1970, a meagre

improvement has been made for some minority groups like Asian Americans (Stulberg & Chen,

2014; Swail, 2003). However, compared to population increase, college enrollment and

graduation rates have not increased proportionally for other minority groups, such as African

Americans and Hispanics compared to their counterparts, Whites and Asians (de Brey et al.,

2019; National Center for Education Statistics, 2020b). From 2000 to 2018, African American

18–24-year-old college enrollment increased by 6%, from 31% to 37%, whereas their population

increased by 29% (de Brey et al., 2019; Hussar et al., 2020). For the same period and age group,

Hispanic college enrollment increased by 14%, from 22% to 36%, whereas their population

increased by 69.7% (de Brey et al., 2019; Hussar et al., 2020). In 1997, 45% of White students

18–24-year-old enrolled in colleges and universities; by 2020, it was increased to 62.9% (de

Brey et al., 2019; Hussar et al., 2020), but their population decreased by almost 25% (Bureau of

Labor Statistics, 2021; Bureau of U.S. Census, 2021). Boliver (2016) pointed out that over the

years, some progress has been made in building equitable representation and access to higher

education for minority students, especially African Americans, Latinos, and Native Americans.

However, the progress and attainment gaps are still large and far behind compared to Whites and Asians (Boliver, 2016). Bonilla et al. (2021) argued that despite the progress of faculty and minority students, minority faculty and students had not experienced a substantial increase, which is a growing urgency for higher education institutions across the United States.

Historical Overview

In 1636, the colonists constructed Harvard College, and at the beginning of the American Revolution, they established nine colleges and seminaries (Thelin, Edwards, & Moyen, 2004). Unfortunately, colonial colleges were established for the elite and wealthy; only White Christian males could matriculate (Thelin et al., 2004). White women, African Americans, and other minorities were denied participation by statute and custom (Thelin et al., 2004). The first commencement of Harvard was held in 1642, and the graduating class consisted of only nine students of Whites, Christians, and males (Cipriano, 2019; Ellis, 1873). Paul (2011) added that the ranking of its graduates was not conducted by their grades or alphabetical names; instead, these nine men crossed the stage in line with their wealth and societal status. This legacy continued for the next 121 years as Harvard classified its graduates by their family status in society (Harris, 1993).

In 1837, Horace Mann and other reformers initiated the Common School Movement (Marshall, 2002; Messerli, 1965). They argued that schools were decisive in fostering Christian moral values and educating every inhabitant to participate in democracy (Marshall, 2002). Throughout the 1800s, many states joined the Common School Movement, in which schools were free, funded and regulated by the state government (Marshall, 2002; Reese, 2011). Marshall (2002) added access to schools was particularly for White children, including women. However, African Americans and other minorities were prohibited from schooling because leaders wanted

them to remain enslaved (Burris-Kitchen & Burris, 2011; Murtadha & Watts, 2005). Despite the

risks, the Quaker community and other advocates remained devoted to educating more African

Americans by secretly offering them tutoring (Horton & Horton, 1998). Horton and Horton

(1998) added that in the 19th century, educating African Americans was limited, risky, and

dangerous. In the mid-19th century, some higher education institutions, such as Oberlin

Collegiate Institute and Dartmouth College, offered access to education for Blacks (Bowen,

Kurzweil, Tobin, & Pichler, 2005). Oberlin College was not only the first college to admit

African Americans; it was the first school to admit students without respect for their race

(Bowen et al., 2005; Pilgrim, 2010). Oberlin's trustees passed a resolution on racial integration of

higher education in the United States (Pilgrim, 2010). Pilgrim (2010) added that African

Americans and Whites worked together to build First Church and listened to the White minister

sitting side-by-side in the Church. In 1837, the Institute for Colored Youth, the oldest historically

Black college and university (HBCU) in the United States, currently known as Cheyney

University, was founded by a Quaker named Richard Humphreys (Bowen et al., 2005). From

1861 to 65, during American Civil War, many Historically Black Colleges and Universities

(HBCUs) were established to educate Blacks (Bowen et al., 2005; McCall & Castles, 2020). The

HBCUs became lighthouses for Blacks who were forbidden from attending predominately White

institutions (PWIs) (McCall & Castles, 2020).

In 1896, in the United States Supreme Court in the *Plessy v. Ferguson* case, racial

segregation in public facilities was legal (Ferguson, 1896). Between the 19th and early 20th

centuries, in the practice of Jim Crows Laws, "separate but equal" condemned African

Americans to inferior treatment and facilities, such as prohibited from sharing the same schools,

buses, and other public places, hotels and restaurants (Griffen & Schools, 2019; Horn, 2001;

Woodward, 1964). The National Association for the Advancement of Colored People (NAACP) challenged the segregation laws in public schools and filed lawsuits in South Carolina, Virginia, and Delaware on behalf of the plaintiffs (Sartain, 2020; Woodward, 1964). The United States Supreme Court ordered against racial segregation in several landmark cases that ultimately ended the Jim Crow laws (Klarman, 2007; Woodward, 1964).

In the 20th century, some progress was accomplished regarding diversity in education, including various rulings and acts that promoted fair and equal access to education for all Americans, including African Americans and other minorities (King, McIntosh, & Bell-Ellwanger, 2016). In 1954, *Brown v. Board of Education of Topeka* was a landmark Supreme Court case that ruled racial isolation of children in public schools was unconstitutional (Russo, Harris, & Sandidge, 1994). *Brown v. Board of Education* case was the cornerstone of the civil rights movement and established education and other services equal to all (Woodward, 1964). *Brown v. Board of Education* was the name given to five separate cases such as *Brown v. Board of Education of Topeka, David v. Board of Education (VA), Briggs v. Elliot, Gebhart v. Ethel and Bolling v. Sharpe* (Sartain, 2020; Woodward, 1964). Sartain (2020) added each case was different, but the fundamental issue was the segregation in public schools. The National Association for the Advancement of Colored People (NAACP) appealed to the United States Supreme Court. In 1952, when the cases came before the Supreme Court, the judges consolidated all five cases under the name of Brown v. Board of Education (Levine, 1954; Courts, U.S., 2015; Sartain, 2020). In this case, Marshall, the head of NACCP Legal Defense, argued that separate school systems for Whites and Blacks were inherently unequal and violated the Fourteen Amendment equal protection clause of the U.S. Constitution (Courts, U.S., 2015; Supremejusticia.com, 2020). Marshall (2002) argued that separate school systems tend to make

Black students feel inferior to White students, and the system should not be legally permissible (Supremejusticia.com, 2020). The Supreme Court was deeply divided, and on May 14, 1954, the decision was that "the Supreme Court declared that in the field of public education, the doctrine of *separate but equal* has no place. Separate educational facilities are inherently unequal, and segregation in public education denies equal protection of the laws" (Courts, U.S., 2015; Levine, 1954). ESCR-Net (2013) indicated that the *Brown v. Board of Education* case overturned all those unconstitutional practices such as racial segregation in public schools, the right to equal protection under the Fourteenth Amendment, separate but equal, equality, racial discrimination and the right to education.

Historically, many racial groups in the United States have faced severe discrimination in civil, political, social, educational, and economic opportunities (Blank, Dabady, & Blank, 2004). Blank et al. (2004) argued that discrimination against minorities exists in criminal justice, healthcare, employment, housing, income and wealth, and other societal areas. Research indicated that various forms of discriminatory treatment persist in society, especially in higher education, creating a significant concern for equal opportunity (Bonilla et al., 2021; Bonilla-Silva, 2015).

Society-at-Large

Black, Hispanic, and Native Americans remain underrepresented in higher education proportionate to their population (King et al., 2016). Research suggested that from 1980 to 2014, the percentage of White and Asian students enrolled full-time increased significantly compared to their counterparts, Hispanics and Blacks (King et al., 2016; National Center for Education Statistics, 2017). The national data indicates every year between 2000 and 2018, the college enrollment rate for Asian and White students was higher than for Blacks and Hispanic students

(Hussar et al., 2020; National Center for Education Statistics, n.d). King et al. (2016) emphasized that the percentage of White students enrolled at private, non-profit institutions was highest and lowest among Hispanics.

In 2017, a study was conducted by Monarrez and Washington (2020) to measure and assess national patterns of racial/ethnic representation in higher education (Monarrez & Washington, 2020). In their analysis, Monarrez and Washington (2020) focus on their population's four most considerable ethnic backgrounds: White, Black, Asian, and Latino. Monarrez and Washington (2020) also concentrated on a smaller minority group, such as Native Americans and Pacific Islanders, frequently overlooked in many of these studies. In their reports, researchers compared the representation of college racial and ethnic demographics, whether each racial or ethnic group is overrepresented or underrepresented for an individual college or a group of colleges in the United States (Monarrez & Washington, 2020). Research indicated that Latinos and Blacks are underrepresented at more selective colleges by 9% and 6%, respectively (Monarrez & Washington, 2020). Their research also suggested that more selective private and public colleges and universities have similar representations for most groups (Monarrez & Washington, 2020). Monarrez and Washington (2020) added Black students are overrepresented by 15% in for-profit postsecondary institutions.

However, Asian and White students are overrepresented at more selective universities and colleges by 8% and 4%, respectively. Still, no significant difference was observed in the Black and Hispanic students' representation at less selective and selective institutions (Monarrez & Washington, 2020). The study also unveiled that Native Americans were overrepresented at two-year public colleges but underrepresented at four-year public colleges in between 2009 and 2017 (Monarrez & Washington, 2020). Native Americans attend postsecondary education at

17% compared to 60% of the total population (Postsecondary National Policy Institute, 2019).

According to the Bureau of U.S. Census 2018 population estimate, the highest proportion of

Native Americans are in the western states with more reservations and tribal nations, such as

Alaska, Oklahoma, New Mexico, South Dakota, and Montana, and the lowest proportion is in

the east of Mississippi (Bureau of U.S. Census, 2018). Monarrez and Washington (2020) added

that the national representation for Native Americans and Pacific Islander students is similar, and

their gaps are negligible. Pacific Islander students have steadily declined at two-year colleges for

the same period and are overrepresented at four-year for-profit institutions (Monarrez &

Washington, 2020). The data also indicated a higher level of Black student underrepresentation

at more selective public universities and colleges in most southern states (Nichols, 2014).

Nichols (2014) pointed out that the national ethnic and racial representation trends considerably

vary between states. Monarrez and Washington (2020) pointed out that between 2009 and 2017,

Black students gained representation in Northeastern colleges but lost representation in other

states. Latino students have gained representation in most states but by varying degrees

(Monarrez & Washington, 2020).

King Jr. et al. argued in a 2016 study that higher education practices remain widely

unchanged as the American demographic shift and new diversity initiatives emerge (King et al.,

2016). The Integrated Postsecondary Education Data System (IPEDS) suggested that the faculty

had remained 70% White, whereas professors of color made up 30% of the overall faculty

(DiBenedetto, Peters, & Voight, 2021; National Center for Education Statistics, 2021a).

Washington, Boone, Kim, Shakya, and Roberts (2021) argued that a lack of diversity in faculty

could be a potential problem for diverse student bodies. Moreover, a significant improvement

was achieved in the 20th century in access to higher education for all; however, in the 21st

century, a great deal remains in making higher education diverse and accessible to all Americans, including minorities (Allen et al., 2021).

Boliver (2016) argued that improving students' diversity in higher education is widely acknowledged by the stakeholders to build more equitable access for minorities. Boliver (2016) added that universities and colleges face political and legal pressure to ensure a fair and consistent enrollment process, especially for underrepresented minority groups. Higher education administrators continuously work for improvement but remain a significant gap in its achievement (Boliver, 2016). To address these concerns, higher education institutions implemented an affirmative action plan in 1970 to reduce the diversity gap and increase minority representation in education and employment for Asians, Blacks, Native Americans, Latinos, and other non-Whites (King et al., 2016; Ogbonnaya-Ogburu, Smith, To, & Toyama, 2020). However, these race-conscious practices have been targeted by legal challenges (Gurin, Dey, Hurtado, & Gurin, 2002). Gurin et al. (2002) argued that in the current context of legal challenges to affirmative action and race-based considerations in college admissions, educators had been challenged to articulate diversity's educational purposes and benefits.

The United States Supreme Court ruled in *Gutter v. Bollinger* (2003) that the affirmative action admissions policy of the University of Michigan Law School does not violate the Fourteenth Amendment Equal Protection Clause (Carnevale & Rose, 2013; Devins, 2003). The Court ruled that student body diversity is a compelling state interest that can justify using race in admissions to achieve diversity in higher education (Edwards, 2004). The *Gutter v. Bollinger* (2003) case was a landmark victory for minority students and enhanced diversity in higher education (Devins, 2003; Edwards, 2004). This victory once again allowed higher education institutions to practice their rights to consider race and ethnicity in the admissions

process and promote student diversity (Carnevale & Rose, 2013). In the *Fisher v. the University of Texas Austin* (2016) case, the Supreme Court also upheld the consideration of race in the admissions process (Strauss, 2017). Fisher filed a lawsuit alleging that the university's race consideration disadvantaged Caucasian students, including herself, violating the Equal Protection Clause (Carter & Lippard, 2020). However, Supreme Court justices ruled 4-3, rejecting the claim of Abigail Fisher at the University of Texas Austin that reassured many admissions professionals to continue to practice and consider race and ethnicity for admissions (Jaschik, 2018).

Over the past five decades, affirmative action plans and multiple federal court rulings such as Regents of the University of California v. Bakke, Gratz v. Bollinger, Gutter v. Bollinger, and Fisher v. the University of Texas, public referenda, executive order, and state law which allowed colleges and universities to legally consider race as a factor in admissions (Thornhill, 2019). However, these prohibitions did not eliminate informal consideration of race in admissions, especially in historically predominately white institutions (PWIs). Their admissions regime ensures that race will remain salient during their admissions decisions (Bonilla-Silva, 2015). A study suggested that most PWIs now desire and are willing to embrace Black students to diversify their campuses (Thornhill, 2019).

However, in January 2022, Supreme Court recently wanted to revisit the question of affirmative action in higher education and decided to hear the cases of Harvard and the University of North Carolina (UNC) that challenged the use of race as one factor for admissions (Totenberg & Singerman, 2022). Totenberg and Singerman (2022) added that the Court would not only consider admissions practice at Harvard and UNC affirmative action programs but also reexamine 52 years of practice of race can even play any role in admissions. The proponents of affirmative action plans have been concerned that the previous rule was 4-3 in favor of the

affirmation action plan and moderate conservative Justices are holding the balance of power (Totenberg & Singerman, 2022). Currently, there are no moderate conservatives on the Supreme Court; the Supreme Court may rule that affirmative action is unconstitutional, which might create barriers to diversifying higher education (Totenberg & Singerman, 2022).

Opportunity and attainment gaps between White students and students of other ethnic groups related to four-year college enrollment and completion of graduation still persist (Monarrez & Washington, 2020). In their research, Monarrez and Washington (2020) indicated that African American, Latino and Native American students pursue certificates and associate degrees at higher rates than Whites and Asians (Arcidiacono & Koedel, 2014; Espinosa et al., 2019; Monarrez & Washington, 2020). Contrary, White and some Asian students pursue bachelor's and postgraduate degrees at higher rates than their peers from minority groups (Arcidiacono & Koedel, 2014; Monarrez & Washington, 2020). Black and Pacific Islander students enrolled disproportionately in private for-profit institutions, whereas most Asian and White students attend private or public non-profit four-year colleges and universities (Monarrez & Washington, 2020). The persisting education attainment gap between White and Asian students and students of other minority groups may suggest that not every student can have access to a college education or attain the same advantages of a university degree (Arcidiacono & Koedel, 2014; Espinosa et al., 2019; Monarrez & Washington, 2020).

Conceptual Background

Humans can recognize diversity and understand the differences within and between racial identities, including ethnicity, age, gender, nationality, religion, education, sexual orientation, socioeconomic status, language, physical appearance, and marital status (Franklin, 2013). The conceptual framework of diversity is the understanding and interpretations used to describe

human behavior, predict, generate, and gain new knowledge on a topic (McEwen, 2003). Ethnic and racial diversity may promote a broad range of educational outcomes, including active thinking skills, intellectual engagement and motivation, citizenship engagement, racial and cultural understanding, judgement and compatibility among different groups and cultures (Gurin et al., 2002). Gurin et al. (2002) argued that the impact of racial diversity on educational outcomes initiates mainly engagement and interaction with diverse peers on campus and in the classroom to have maximum educational benefit.

Many theories related to diversity were examined for this study, such as cognitive theory (CT), social exchange theory (SET), diversity pedagogy theory (DPT), multiple intelligence theory (MIT), intercultural competence theory (ICT), Tinto's (1975) integration theory (IT), similarity-attraction paradigm (SAT) and social identity theory (SIT). The cognitive diversity hypothesis suggests that many angles of steaming from the cultural distinctions between ethnic groups can positively impact creative problem-solving and innovation. The similarity-attraction paradigm and social identity theory (SIT) hold that individuals, in terms of their group memberships, seek to maintain a positive identity in their groups and self-serving comparisons with other groups (Tajfel & Turner, 1979). Both similarity-attraction and SIT may hold individuals' preferences for interacting with others like their groups, which can negatively affect outgroups. The social exchange theory (SET) suggests that human relationships and social behavior have resulted in an exchange process (Cherry, 2021). In higher education, students weigh the potential benefits and risks of social relationships, and when the risk outweighs the rewards, students will terminate the connection (Cherry, 2021). Cherry (2021) argued that the SET could be applied to the social structure created by repeated exchanges and exercising power and influence. The social process addresses the exchange tradition, including interpersonal

commitment, fairness, trust, justice, procedural, and collective action (Cherry, 2021). The diversity pedagogies theory (DPT) postulates how a student should know each other, how things should be instructed, how teaching should be done, and how DPT can be brought to improve the student learning process (Rutto, 2017; Sheets, 2009). The teachers, professors and educators must know and understand how culture and environment play a critical role in teaching and learning (Sheets, 2009). Rutto (2017) pointed out that diversity pedagogies theory (DPT) may serve as a framework like other behaviorists, constructivists, and cognitive learning theories. Gardner's multiple intelligence (MIT) suggests that all people have different kinds of intelligence, and higher education institutions can use this multi-diverse intelligence to improve student's learning outcomes and future endeavors (Morgan, 1996). Above, the briefly discussed theories potentially benefit and will significantly positively impact be improving diversity in higher education. After thoroughly reviewing all potential approaches that can be selected for this study, it was determined that social identity theory (SIT) would be the most relevant and practical.

In 1978, Tajfel and his colleagues proposed social identity theory (SIT) in social psychology (Hogg, 2020; Leaper, 2011; McLeod, 2019; Tajfel, 1974; Tajfel & Turner, 1979). The SIT is a psychological theory focusing on social context, a key determinant of self-definition and behavior (Ellemers & Haslam, 2011). Social identity is an individual's sense of who they are and which people belong to is a critical source of pride and self-esteem (McLeod, 2019). In their theory, Tajfel, Turner, Austin, and Worchel (1979) suggested that individuals' self-concepts are based on their membership in social groups. Tajfel and Turner (1979) argued that individuals seek to maintain a positive identity in their groups and make self-serving comparisons with other groups regarding their group memberships. The theorists say that social identity establishes

intergroup behavior significantly distinct from interpersonal behavior (Ellemers & Haslam, 2011).

The primary motivation of SIT is the maintenance, achievement, and enhancement of self-esteem (Smurda, Wittig, & Gokalp, 2006). Trepte and Loy (2017) define social identity as a combination of self-categorization that evaluates influences on individual self-esteem. Smurda et al. (2006) emphasized that the original self-esteem hypothesis suggests two distinct relationships between bias and self-esteem. Smurda et al. (2006) argued that threatened self-esteem promotes intergroup discrimination because of the need for positive self-esteem and successful intergroup prejudice enhances social identity. Thus, when identity is salient, self-esteem is elevated and discrimination institutes (Trepte & Loy, 2017).

In historically unequal societies, prejudice is one of the critical determinants of discrimination; intergroup contact may be a central driver of social change (Di Bernardo et al., 2021). A recent study was conducted by Hayward, Tropp, Hornsey, and Barlow (2018) to examine the relationship between the disadvantaged group (Black and Hispanics) and the advantaged group (Whites). Their findings suggested that positive contact with advantaged group members, such as Whites, can improve the attitudes of disadvantaged groups like African Americans, Hispanics and Native Americans towards them, which may reduce prejudice (Hayward et al., 2018). It may lower perceptions of group discrimination consequent collective action (Hayward et al., 2018). However, little is known about the negative contact with the advantaged group that predicts collective action among the disadvantaged group members (Hayward et al., 2018). Negative contact could increase collective action among disadvantaged group members by increasing ingroup identification, inciting anger, highlighting discrimination, and reducing supportive outgroup attitudes (Reimer et al., 2017). Research suggested that

members of a positive intergroup contract with an advantaged group can discourage collective

action among disadvantaged group members; positive intergroup contact can encourage

advantaged group members to act on behave of disadvantaged outgroups (Di Bernardo et al.,

2021). Below is a conceptual model diagram of social identity theory.

Figure 1

Social Identity Theory Conceptual Framework
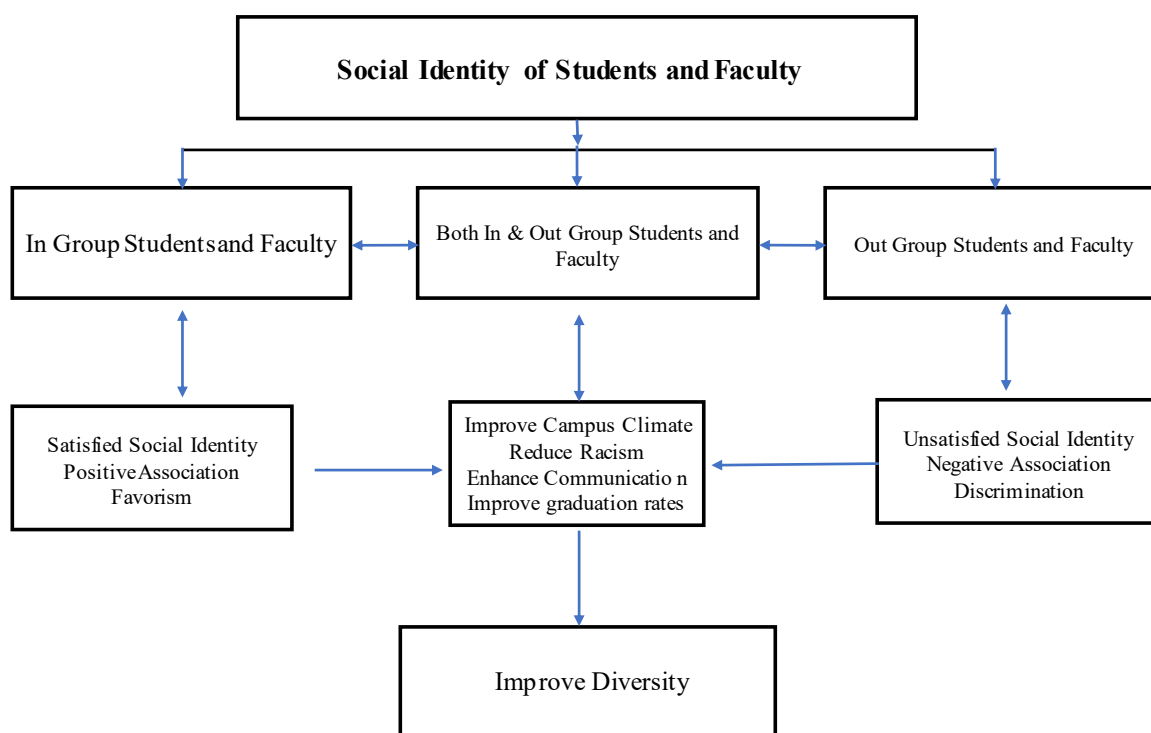
The social identity theory (SIT) suggests that when people first contact others, they

categorize them as belonging to an ingroup or an outgroup (Tajfel, 1974). Tajfel (1974) argued

that people see ingroups as heterogeneous and outgroups as homogeneous. There is often solid

ingroup favoritism and often derogation of outgroup members (Tajfel, 1974). Leaper (2011)

claimed that when a first-year student is enrolled in a school or an employee is hired, they tend to search for their own ethnic, cultural or group people and associate with them because people will see them in a group will be treated as heterogeneous. Leaper (2011) argued that social identity affects people's attitudes and behaviors regarding their ingroup and outgroup social identities. Social identities are so strong and most influential when individuals consider themselves in a specific group and feel strong emotional ties to the group (Leaper, 2011). Leaper (2011) added that when they affiliate with a group that confers self-esteem and makes them feel more secure, it helps sustain their social identity.

The SIT was more appropriate for this study because it emphasized how group membership is incorporated into self-concept and how this will impact students' and faculty's views of other outgroup members, non-members, or members of rival groups (Greenwald & Pettigrew, 2014). The SIT was used widely for ingroup favoritism and outgroup discrimination (Greenwald & Pettigrew, 2014). The SIT explained and unveiled the conformity and socialization of students and faculty in peer groups (Leaper, 2011). Many social psychologists applied social identity theory as their theoretical framework because it emphasizes personal and social identity (Di Bernardo et al., 2021; Hayward et al., 2018; Leaper, 2011; Reimer et al., 2017). Leaper (2011) argued that in their relationships to group membership, social identity refers to "we," and personal identity refers to "I." However, based on the social context, an individual's personal and social identity may be more salient to the other person. For instance, when interacting with a friend, personal identity is more important than interacting with a group of peers on the playground, the social identity is more important (Leaper, 2011). Research suggested that group prejudice and stereotyping are more common when social identities are

salient and downplaying the salience of intergroup differences may reduce prejudice and discrimination (Bigler & Liben, 2007; Leaper, 2011).

Problem Statement

The diversification of students and faculty bodies in higher education institutions has not kept aligned with the proportion of diverse racial/ethnic general populations in the United States (Bureau of Labor Statistics, 2021; Bureau of U.S. Census, 2021; Stout, Archie, Cross, & Carman, 2018). There is an expectation from the stakeholders that universities and colleges should educate more students and involve more faculty representatives from the ethnically diverse portion of the United States population (Stout et al., 2018). Many scholars and educators argue that higher education diversity is an ongoing challenge throughout the United States (Davis & Fry, 2019; Espinosa et al., 2019; Luster-Edward & Martin, 2019; Phillips, 2019). Luster-Edward and Martin (2019) asserted that students of color are represented disproportionately throughout student bodies, faculty, staff, and administration in higher education, which has been a serious concern for many years. Multiple literature reviews suggested that the enrollment of racial/ethnic students population increased over the years (Espinosa et al., 2019; Holland & Ford, 2021; Turk, 2019); however, the graduation rates did not increase as the same rate of minority population increased (de Brey et al., 2019). Despite the progress in educational attainment in recent decades, race and ethnicity disparities remain high proportionate to the population (Espinosa et al., 2019). These disparities suggested that many minority Americans left opportunities to improve their lives and contribute to society (Espinosa et al., 2019; Turk, 2019).

Although ethnic and racial diversity has increased slightly among college faculty over the past 20 years, the proportion of White faculty is higher overall than the proportion of the White student

population (Davis & Fry, 2019). Multiple researchers indicated a substantial difference between White and non-White faculty compared to the student-faculty ratio in higher education in the United States (Davis & Fry, 2019; National Center for Education Statistics, 2021b). Davis and Fry (2019) argued that in the United States, college students are twice as like as faculty to be Black and four times as like to be Hispanic. Integrated Postsecondary Education Data System (IPEDS) data for the fall of 2017 suggested that 76% of postsecondary faculty members were White compared to 55% of White undergraduate students (Davis & Fry, 2019; Integrated Postsecondary Education Data System, 2019; National Center for Education Statistics, 2018a). However, approximately 24% of postsecondary faculty members were non-White compared to 45% of non-White students (Davis & Fry, 2019). Research also identified racial and ethnic gaps between college faculty and students across all academic disciplines (Davis & Fry, 2019). Many studies have scrutinized the relationship between student and faculty diversity, minority students' enrollment, retention, and graduation rates, including Banks and Dohy (2019), Dawson and Cuevas (2020), de Brey et al. (2019), and Dewberry and Jackson (2018). However, little research has examined the relationships between faculty and student diversity, their race and ethnicity, and other institutional diversity factors such as locale, enrollment size, and admissions selectivity that contribute to minority students' success and achievement, especially for graduation rates. The opportunity gaps between non-White and White counterparts persist in higher education despite the decade of remediation approach taken by the institutions (Banks & Dohy, 2019). Nevertheless, despite the enrollment increase, progress in graduation rates and increased minority faculty, Black and Hispanic students and faculty have not experienced substantial increases in colleges and universities proportionate to the population compared to Whites and

Asians (Bonilla et al., 2021; Derrick, DeLong, & Myers, 2021; Libassi, 2018; Stout et al., 2018; Warren & Bonilla, 2018).

This study was related to other studies, such as Luster-Edward and Martin (2019), Holland and Ford (2021), Stout et al. (2018), and Smith (2020) addressing institutional racial and ethnic diversity and its relationship to graduation rates. A rigorous literature search was conducted, which uncovered studies specifically focused on examining the relationships between graduation rates and a linear combination of student diversity, faculty diversity, institutional locale, enrollment size and admissions selectivity. Stout et al. (2018) highlighted their study implications that "future research could more closely look at these relationships with Diversity Scores among differing types of minority-serving institutions for more accurate information" (p. 412). This study addressed the problem of determining predictive relationships between graduation rates and student diversity, faculty diversity, institutional locale, enrollment size and admissions selectivity. More research is needed on institutional locale and its relationship with graduation rates; therefore, continued research on this topic should be conducted.

Purpose Statement

The purpose of this quantitative study was to determine the predictive relationships between student diversity, faculty diversity, institutional locale, enrollment size and admissions selectivity and construct a relationship with graduation rates. The study intended to determine whether graduation rates are related to other institutional diversity factors that include geographical locations, enrollment size, and admissions selectivity. For this study, the dependent/criterion variable is graduation rates, and the independent/predictor variables are student diversity, faculty diversity, institutional locale, enrollment size, and admissions selectivity.

According to IPEDS, the graduation rate is the calculated percentage of students who completed or graduated from their program within a specific timeframe, such as four or six years (National Center for Education Statistics, 2020d). Race is defined as biological differences, outward physical characteristics that groups and cultures consider socially significant, and ethnicity refers to shared cultural, traditional, and familial characteristics such as language, practices, ancestry, and beliefs (American Psychological Association, 2019). For this study, ethnicity is defined as non-White, such as African Americans, Asians, Hispanics, American Indians/Alaskan Natives, Pacific Islander/Hawaiian, Aboriginal and Indigenous and White faculty, and students in the United States (National Center for Education Statistics, 2021c).

The geographical locale is the institution's physical place in the city, suburban, or rural areas of the United States (National Center for Education Statistics, 2021d). The locale represents the urbanicity (city/suburban/rural) by the population size of the institution's location and an urban-centric locale code assigned through a methodology developed by the U.S. Census Bureau (National Center for Education Statistics, 2020c). This locale code applies current geographical concepts to the original NCES Locale Code used by IPEDS (National Center for Education Statistics, 2020d). The enrollment size captured the number of students enrolled in credit courses in the fall (National Center for Education Statistics, 2020d). In IPEDS, both fall enrollment (EF), and 12-month enrollment (E12) survey components contain the number of students enrolled in postsecondary credit courses; regardless student is seeking a degree/certificate or a course under Title IV-eligible institutions (National Center for Education Statistics, 2020d). The enrollment data were collected in the fall for the fall enrollment component data used for this study. Colleges and universities report an unduplicated total number of students by gender, attendance status, level, first-time, transfer-in,

continuing/returning, and degree/certificate-seeking statuses enrolled throughout the reporting

period (National Center for Education Statistics, 2020d). Selectivity measures the percentage of

admitted students; the lower the percentage, the more selective the institution is (National Center

for Education Statistics, 2020d). For this study, the selectivity rates percentage was calculated by

the number of students enrolled divided by the number of applicants and multiplied by 100.

Significance of the Study

Diversity is on the top agenda in many industries, including higher education institutions

(Setati, Zhuwao, Ngirande, & Ndlovu, 2019). In 2003, in a landmark decision in *Grutter v.*

Bollinger case, the Supreme Court ruled colleges and universities have the right to strive for

diversity on campuses and affirmed the right of colleges and universities to follow racial

diversity as a part of their educational mission (Devins, 2003; Robinson, Franklin, & Epermanis,

2007; Setati et al., 2019). Thus, many higher education institutions now include diversity in their

mission statements (Setati et al., 2019). The importance of diversification of faculty and students

in higher education is widely recognized by the stakeholders such as students, their parents,

faculty, educators, administrators, government officials, and political leaders (Franklin, 2013;

Stout et al., 2018). Diversification in higher education is significantly important because it will

shift student bodies and curriculum changes and build stronger communities (Carlton, 2021).

Carlton argued that a more diverse institution opens all students to a broader range of

perspectives to become better problem solvers and change their thinking skills. Carlton (2021)

argued that diverse students and faculty bring diverse knowledge to the institutions. If all

students and faculty are from the same ethnic background, society will not be aware of all the

challenges and problems in the school environment (Carlton, 2021). Carlton (2021) added that

higher education administrators must ensure that everyone on the campus can contribute to the school community.

In the United States, colleges and universities have changed dramatically over the past half-century (Michalski et al., 2017). Derrick et al. (2021) argued that higher education institutions are more diverse than ever in terms of gender, race, disability, class, religion, social status, first-generation students, and other accessibility needs. Nevertheless, a disproportionate rate of representation of minority students and faculty, especially Blacks and Hispanics, is a significant concern (Derrick et al., 2021; Kena et al., 2016; Michalski et al., 2017; Morgan, 2020). A study was conducted by Allen et al. (2021) on African American faculty status in higher education, and their research suggested that African American faculty members are underrepresented and have low academic status at most of the nation's colleges and universities (Allen et al., 2021). Their research data suggested that African Americans represent only 4% of professors and associate professors compared to 87% of White Americans (Allen et al., 2021). Blacks and Hispanics are far behind compared in the educational race compared to Asians and Whites (Derrick et al., 2021; Kena et al., 2016). de Brey et al. (2019) argued that college enrollment gradually increased slightly for minority groups, including African Americans, Hispanics, and Native Americans. Despite this gain, the rate of progress has varied among these racial/ethnic groups, and differences by race/ethnicity persist in terms of increases in attainment and progress on the key indicators of educational performance, such as graduation rates (de Brey et al., 2019).

In the 21st century, faculty diversity and adequate representation in colleges and universities are vital for diverse study bodies in higher education (Chessman & Wayt, 2016; Flaherty, 2015; and Griffin, 2019). Although higher education institutions' professors are

predominately White and male; however, there has been increased attention to the lack of faculty diversity in colleges and universities (Griffin, 2019). Research indicated that about three-quarters of all full-time faculty at postsecondary degree-granting institutions are White and only 11% are African Americans, Latinos and Native Americans. Comparatively, one-third of all students enrolled in college are Blacks, Latinos or Native Americans, and 52% are Whites (Griffin, 2019). Many scholars have identified that the recruiting and retaining of minority faculty members is a concern; there should be less of a gap if there are efforts to recruit African Americans and Hispanics (Flaherty, 2015; Griffin, 2019). From 2015-2016, students nationwide protested incidents of racism and discrimination on and off campuses, and the demand to increase faculty diversity became a top agenda (Ndemanu, 2017). While higher education administrators are aware of these demands, unfortunately, progress remains a significant concern for minorities (Griffin, 2019). With the internal and external pressure, higher education institutions have voiced their struggles with and commitment to hiring faculty bodies that are more equivalent to their student bodies (Griffin, 2019). Griffin (2019) argued that there are many challenges and opportunities to increase faculty diversity; it is vital to understand the barriers that limit progress toward increasing representation.

The colleges and universities' geographical locale, enrollment size, and selectivity may play a crucial role in higher education diversity (Franklin, 2013). Research indicated that in the United States, 70% of students attending college would remain in the same state where they completed high school (Franklin, 2013). If a particular state, city, or county has diverse racial-ethnic populations for a specific location, students' graduation rates may be higher, and they would have a diverse workforce with a long-term economic advantage from a diverse human capital (Franklin, 2013). However, their research also suggested that in terms of human

resources, some regions are net losers in the education production process because some regions have insufficient opportunities for those graduates, and they cannot keep the workforce in their area (Franklin, 2013). Nevertheless, various research suggests that regional levels of higher cultural diversity are positively associated with new knowledge generation for students and positively impact economic growth (Audretsch, Dohse, & Niebuhr, 2010; Franklin, 2013; Niebuhr, 2010).

Franklin (2013) stressed that the demographic location is not only responsible for improving diversity, but the population is responsible for the observed diversity variation in students and faculty for that region. For example, a particular institution's ethnic and racial minority student enrollment would have been higher if that region had a culturally diverse population (Franklin, 2013). However, the admissions selectivity for a specific institution may not be the same for that location and enrollment size; it depends on institutional characteristics and students' choices (Holland & Ford, 2021). This study will investigate whether graduation rates are related to institution locale, enrollment size and admission selectivity.

This research was focused on the quantitative predictive correlational design to examine the relationships between graduation rates and a linear combination of student diversity, faculty diversity, institutional locale, enrollment size, and admissions selectivity. The quantitative predictive correlational approach was most suitable for the proposed research because the researcher used quantitative variables to determine the relationship between graduation rates and student, faculty, and institutional diversity. For this study, the data was collected from the Integrated Postsecondary Education Data System (IPEDS) database, which contains more than 7,000 institutions and up to 250 variables (National Center for Education Statistics, 2021e).

Therefore, the quantitative design will explore more representations from the subject population and be more appropriate for the intended study (Holton & Burnett, 2005).

The literature indicated that many quantitative studies had found diversity gaps in higher education, including Banks and Dohy (2019), Dawson and Cuevas (2020), Libassi (2018), and Stout et al. (2018). Yet, the researcher could not find in the literature any predictive correlational study to establish predictive relationships between the graduation rates and the linear combination of student diversity, faculty diversity, institutional locale, enrollment size, and admissions selectivity. The study unveiled and determined whether faculty representation was comparable to student representation; based on the results, the study recommended how to enact change and what to improve for the stakeholders. The outcome of this study should provide valuable information to government officials, educational, and political leaders to improve overall diversity in higher education.

Research Question

RQ: How accurately can graduation rates be predicted from a linear combination of student diversity, faculty diversity, institutional locale, enrollment size, and admissions selectivity?

Definitions

1. *Discrimination* - Discrimination is the prejudicial treatment of people and groups based on the characteristics such as race, gender, sex, age, or religion (American Psychological Association, 2019).

2. *Diversity* - According to the Association of American Colleges and Universities (AAC&U), diversity is the variety created in society by the presence of different points of view and ways of making things meaningful that follow the influence of distinct cultural-

religious heritage. Diversity values individual differences in how humans socialize men and women and social differences that emerge from race, class, sex, gender, disability, age, and developed ability (Swain, 2013).

3. *Ethnicity* - is the cultural identity and is often used as the historical successor of the concept of race (van de Vijver, 2017). According to American Psychological Association, ethnicity refers to shared cultural characteristics such as language, practices, ancestry, and beliefs (American Psychological Association, n.d).

4. *Minority group* - A minority group defines as any racial/ethnic group that is non-White, such as African Americans, Hispanics, Asians, Pacific Islanders, and Native Americans (Wirt et al., 2001). For the study, Asians are the minority in the population of the United States. Asians are also the minority in higher education faculty, like other minority groups. However, in student bodies, their enrollment, graduation, and attainments are higher than any other racial/ethnic group compared to their population, except White and Asians are also the minority in faculty like other minority groups.

5. *Race* – is a matter of social structure and cultural representation that shares certain distinctive physical traits or social qualities (Omi & Winant, 2020). According to American Psychological Association, the race is defined as biological differences that groups and cultures consider socially significant (American Psychological Association, n.d).

6. *Title IV Institutions*- Title IV institutions are those with a written agreement with the U.S. Department of education that allows them to participate in at least one federal student financial aid program in conformity with the Higher Education Act of 1965 (National Center for Education Statistics, 2019-20).

CHAPTER TWO: LITERATURE REVIEW

Overview

A systematic review of the literature was conducted to examine and understand more about student, faculty, and institution factors that potentially may impact graduation rates difference between White and non-White students and identify the literature gaps pertaining to higher education diversity. The literature search also investigated how well racial and ethnic student and faculty groups are represented in universities and colleges across the United States based on institutions' geographical settings and demographic characteristics. The primary purpose of the literature review was to synthesize the existing knowledge on higher education diversity and connect this knowledge to the proposed study. Included is the theoretical framework relevant to the issues of diversity gaps, followed by a synthesis of the current literature pertaining to student, faculty and institution diversity and how much racial and ethnic groups are represented in the colleges and universities in different demographic areas of the United States. Finally, a gap in the literature was identified, underscoring the practical need for the study.

Conceptual Framework

The conceptual or theoretical support provides a necessary basis for appropriately framing a research study (Creswell, 2013). During the literature search, multiple theoretical frameworks related to diversity and two diversity models of learning were examined and identified: diversity pedagogy theory (DPT), social exchange theory (SET), intercultural competence theory (ICT), multiple intelligence theory (MIT), Person-environment (P.E.) fit theory, Vygotsky's socio-cultural theory (SCT), social identity theory (SIT), critical race theory (CRT), explicit theory of structural discrimination, aversive racism theory, Tinto's (1975)

integration theory, a multicultural model for diverse learning environment (MMDLE), and Cox's interactional model of cultural diversity (IMCD). An analysis of the multiple theoretical models suggested that social identity theory (SIT) is the most relevant and closely related to the proposed study. The SIT was applied as a conceptual framework to understand the theoretical rationale of social contexts and emphasized intergroup differences among different social, racial/ethnic groups, including Whites, Blacks, Hispanics, Asians, and other underrepresented minority groups on higher education campuses across the United States.

Henri Tajfel developed social identity theory (SIT) from his personal and scientific interest in social perception, comparison, categorization, prejudice, discrimination, and intergroup conflict (Hogg, 2020). Hogg (2020) added that Tajfel, a Jewish survivor of World War II, was inspired by his personal experiences of discrimination and intergroup conflict. Tajfel witnessed how people living together as a neighbor, colleagues, and friends could come to see each other as dangerous enemies even though there was no reason behind it (Ellemers & Haslam, 2011; Tajfel, 1974). In his research on SIT, Tajfel explained how people sometimes behave as group members rather than as individuals (Tajfel, 1974). Later in 1979, Tajfel and his colleague John Turner identified SIT theory as an intergroup conflict (Tajfel & Turner, 1979). The main aim of the SIT is to understand and explain how people can come together to adapt and behave instead of as individuals (Hogg, 2020). The central hypothesis of SIT is that ingroup members will seek to find a negative aspect of outgroup members to enhance their self-esteem (Hayward et al., 2018; Reimer et al., 2017). Primarily, the SIT address three main issues: describe human psychological processes and how people's social identities are different from personal identities; how people distinguish different strategies they can use to drive a positive social identity; and

specific key characteristics of social structure which approach was applied in each case (Ellemers & Haslam, 2011).

The SIT was initiated to determine the ingroup and outgroup behavior, worth, evaluation and compare their values (Tajfel & Turner, 1979; Trepte & Loy, 2017). Tajfel and Turner (1979) argued that their group evaluation, social categorization, and group membership values for the self-concept constitute their social identity. Tajfel and Turner's theoretical work on SIT elaborates on why and how people act as group members and how this influence and reflects their self-perception (Tajfel & Turner, 1979; Trepte & Loy, 2017). In SIT, seven underlying psychological strategies are logically arranged in a chronological process: people categorize themselves in certain social groups, the social group is more or less salient in a particular context, people evaluate their salience ingroup relative to relevant to outgroups, people perceive positive distinctiveness, self-categorization and its evaluation and influences, individual's self-esteem, and finally how individual mobility, social creativity, social competition, and stereotyping are affected. These principles to reinterpret or change group memberships are affected by their belief structures concerning how stable a group's structure is.

The SIT apprehends the process of social categorization, comparison, and identification as people define social reality and their position relative to others (Tajfel, 1974). According to the SIT, a significant part of an individual's self-esteem comes from their social identity, which depends on the status of their ingroup in society (Di Bernardo et al., 2021). A member of the advantaged group fosters positive self-esteem, while a disadvantaged group member should foster lower self-esteem (Di Bernardo et al., 2021). Tajfel and Turner (1979) argued that when social identity is underestimated because the ingroup has low status, the individual may decide to adopt an individual (social mobility) or a collective (social change) strategy to improve self-

esteem. For example, concerning East and West Germany, in the perspective of East Germans, a study by Mummendey, Klink, Mielke, Wenzel, and Blanz (1999) found a positive relationship between the perception that intergroup relation was unstable, impermeable, illegitimate, and increased social competition (Mummendey et al., 1999). This study suggested that among the disadvantaged group members, illegitimacy, instability, and impermeability of group boundaries were related to greater intentions to engage in social change (Di Bernardo et al., 2021). Another study was conducted among advantaged (392 Italian students) and disadvantaged (165 immigrant students) by Di Bernardo and colleagues on intergroup contact on how interactions with outgroup members achieve social equality and their willingness to engage in collective action to challenge social inequality (Di Bernardo et al., 2021). Their research suggested that contact was positively associated with social change motivation among advantaged and disadvantaged groups (Di Bernardo et al., 2021).

Over the past 50 years, many psychologists, educators, collaborators, and followers embraced SIT, including Tajfel, Turner, Hogg, Sherif, Wilkes, Festinger, Levine, Moreland, Brown, Ellemers, Haslam and others (Hogg, 2020). Typically, social psychologists pursue to develop interventions to produce positive outgroup attitudes, reduce intergroup conflict and promote equality between groups (Di Bernardo et al., 2021). Intergroup contact is often portrayed as one of the most effective strategies to reduce prejudice and produce an equal society. Multiple literature reviews have suggested that higher levels of a contract are traditionally associated with lower levels of prejudice (Di Bernardo et al., 2021; Hayward et al., 2018; and Reimer et al., 2017).

Historically disadvantaged groups like minorities are usually the drivers of social change toward equality; it is essential to understand the factors that promote their involvement in

collective action (Dixon, Levine, Reicher, & Durrheim, 2012; Hayward et al., 2018)). Dixon et al. (2012) argued that contact could be both positive and negative, so it is crucial to examine how positive and negative contact both contribute to predicting collective action among disadvantaged group members (Barlow et al., 2012; Dixon et al., 2012; Hayward et al., 2018). Positive contact with an advantaged group, such as Whites, may reduce disadvantaged group members' support for challenging inequality, and negative contact may mobilize members of disadvantaged groups to take action (Hayward et al., 2018). Various research suggests that positive contact with the advantaged group members establishes structural discrimination by demoralizing disadvantaged group members from involving in collective action (Dixon et al., 2012; Reimer et al., 2017; Wright & Baray, 2012).

Related Literature

Institutional and systematic racism is deeply postulated in the fabric of the United States society, and higher education institutions are not immune to it (Cabrera, 2019; Washington et al., 2021). Ethnic bias in colleges and universities is not a new topic (Bryant, 2021). Before the Civil War, minorities were excluded from admission into higher education institutions (Bryant, 2021). The concern that ethnic minority students are underrepresented in higher education has driven a considerable interest in the 21st century (Davis & Fry, 2019; King et al., 2016). Research suggests that African Americans and Hispanics remain underrepresented in higher education proportionate to the population compared to White and Asian students (Davis & Fry, 2019; King et al., 2016). Multiple studies suggest that the current diversity climate in higher education is a concern, including Banks and Dohy (2019), Bonilla et al. (2021), Capers, Clinchot, McDougle, and Greenwald (2017), de Brey et al. (2019), Denson and Chang (2009), Franklin (2013), Hall et al. (2015), Phillips (2019), Michalski et al. (2017), Monarrez and Washington (2020), and Stout

et al. (2018). This chapter will provide a general explanation and require links to the purpose of the study. This literature review further scrutinizes the student and faculty diversity gaps and institutional diversity factors in higher education, the potential existence of diversity gaps for the underrepresentation of racial-ethnic minority groups, and the significance of holes in identifying and addressing the literature gaps limitations and making necessary improvements. The section will illustrate the current and existing peer-reviewed literature related to the issue of study.

Race and Ethnicity in Higher Education

The history of racial crisis existed in higher education in the United States from the founding nation's first university, Harvard, in 1636 until the Civil War (Anderson, 2002; Rose, 2018; Taylor, Turk, Chessman, & Espinosa, 2020). Although there has been an increase in minority students' representation in higher education over the years, the progress rate is creeping, and attainment gaps are still wide compared to their population growth (Espinosa et al., 2019; Taylor et al., 2020). Despite the growth, opportunity and experience still diverge for racial and ethnic students (Espinosa et al., 2019; Taylor et al., 2020). Structural and cultural barriers continue to affect higher education for minority students, especially African Americans, Hispanics, and Indigenous students (Espinosa & Mitchell, 2020). Research indicated that from 1996 to 2016, the percentage of Black, Indigenous, and people of color undergraduate students grew nationally from 29.6% to 45.2% (Dedman, 2019; National Center for Education Statistics, n.d.; Punti & Dingel, 2021). This demographic shift makes higher education campuses promising cross-cultural engagement and socialization sites. However, many students face unwelcoming campus environments, and many minority students report more hostile racial climates than their White counterparts (Punti & Dingel, 2021). Punti and Dingel (2021) added that Black, Indigenous, and student of color experiences on higher education campuses differ significantly

from White students, especially at predominately White institutions (PWIs). These experiences affect minority students' success in higher education, including campus climate, sense of belonging and microaggressions that result in racial battle fatigue and minority students required to adopt various strategies for survival on the campuses (Punti & Dingel, 2021).

African Americans in Higher Education

Historically, African Americans were prohibited from learning except for religious instructions (McCall & Castles, 2020; O'Hara, Gibbons, Weng, Gerrard, & Simons, 2012; Thelin et al., 2004; Tolliver & Miller, 2018). During the era of slavery, education for enslaved African Americans was discouraged and made illegal for most Southern states of the United States (Bowen et al., 2005). Even after slavery, education for formerly enslaved people and their descendants was not widely available due to racial segregation in schools and inadequate school funding for African Americans (Bowen et al., 2005). After the Civil War, in 1965, historically Black colleges and universities (HBCUs) were established to provide higher education for African Americans (Bowen et al., 2005; McCall & Castles, 2020). Consequently, African Americans were not participating in higher education in the same proportion as Whites and Asians (O'Hara et al., 2012; Tolliver & Miller, 2018).

In higher education, African Americans face multiple accountable issues such as enrollment, retention, and graduation rates (Tolliver & Miller, 2018). Although Black students' college enrollment has increased over the past two decades, proportionate to the population, they dawdle at every level of higher education compared to Whites and Asians (Bialik, 2018). Research indicated that only 11% of African American students are enrolled in postsecondary education (Bialik, 2018). Although little is known about the factors that affect African American students' college attendance, many psychologists and researchers have recently begun to explore

variations in college enrollment behavior among students of different racial/ethnic groups (Perna, 2000). Analysis suggested that Black students attending colleges and universities with lower entry requirements are likelier to drop out than Whites and Asians (Busby, 2020). There are many reasons behind insufficient enrollment and graduation rates, such as mentoring, student support services, academic preparation, and sociological, indicating community expectations are lower or nonexistent for their success (Tolliver & Miller, 2018).

Multiple researchers have identified substantial postsecondary disparities between Black and White students in the areas of persistence, GPA, and graduation rates, including Bowen et al. (2005), Hobson, Szostek, and Griffin (2021), Kao and Thompson (2003), Kugelmass and Ready (2011), Martin, Spenner, and Mustillo (2017), Musu-Gillette et al. (2016), Nichols (2014), and Radford, Berkner, Wheeless, and Shepherd (2010). Researchers have identified multiple pre and post-enrollment factors contributing to African Americans' poor performance, low grades, and graduation rates (Henderson, Ryan, & Phillips, 2019; Hobson et al., 2021). These factors are delayed enrollment, part-time enrollment status, having children or dependents, being a single parent, self-dependent college financing, lack of high school diploma, low income, first-generation college student, and being employed as full-time while attending colleges and universities (Henderson et al., 2019; Hobson et al., 2021).

Improving African American students' recruitment, enrollment, persistence, and graduation rates are the keys to their success in higher education and future endeavor (Shapiro et al., 2017). Tolliver and Miller conducted a study in 2018 among African American college students. Their findings unveiled four factors, such as mentorship, on-campus support, socialization, and family and community expectations, that can contribute supportive role in improving undergraduate graduation rates for African American Students (Tolliver & Miller,

2018). Many enrollment management efforts focus on early intervention programs that target

students at high risk of dropping or stopping out of enrollment (Tolliver & Miller, 2018). The

management communicates with those students and provides necessary resources or access to

information or financial support to continue their studies (Tolliver & Miller, 2018). However,

most of these programs are designed to assist as many students as possible, but fewer programs

have been designed specifically for minority students such as African Americans (Shapiro et al.,

2017; Tolliver & Miller, 2018).

Latino-Americans in Higher Education

The Hispanic population grew exponentially during the first two decades of the 21st

century and became the most noticeable ethnic minority in the United States (Cejda, 2020).

Hispanic students are the fastest-growing college enrollment population and represent about 11%

of colleges and universities (Cejda, 2020; Santiago & Brown, 2004). Cejda (2020) pointed out

that as their population increased, a more significant percentage of youth completed high school

and enrolled in colleges. Although Hispanics are the largest minority group in the United States,

they lag behind other racial and ethnic minority groups in higher education attainment (Gándara,

2017).

Community colleges are described as a pipeline for higher-education Latino students

(Cejda, 2020; Padilla & Martinez, 2020). A study indicated that 42.9% of all Latino enrollment

in higher education was in community colleges, and between 2006 and 2011, more than 600,000

Latinos were enrolled in community colleges (Bauman, 2017; de Brey et al., 2019). Bauman

(2017) added that only 25% of students transferred into four-year colleges and universities and

earned bachelor's degrees among community college graduates. Cejda (2020) argued that many

Latino students are non-traditional, low-income, work part-time, are first-generation and have

less academic preparation than their peers. They mainly enroll in community colleges near their home, enroll part-time, commute to college, and live concentrated geographically in several states in the United States (Cejda, 2020).

According to Pew Hispanic Center, many Hispanics enrolled at bachelor's degree-granting institutions for the first time do not graduate (Cejda, 2020). Research also suggested that between 25 and older, 11% only have bachelor's degrees compared to 29% of Whites and 25% of non-Hispanics (Bauman, 2017; Cejda, 2020). Karaman, Watson, and Freeman (2021) argued that Hispanic students experience several barriers and challenges in successfully conferring their graduations. Most challenges are related to student issues, such as social support, adjustment, retention, mental health, and financial struggles during college life (Karaman et al., 2021). Karaman et al. (2021) added that while some barriers are more evident, such as financial issues, others may be more deeply rooted in social, personal, and cultural factors associated with college retention and graduation. The NCES conducted a literature review of the reason behind the lower number of Hispanic students who completed bachelor's degrees (Martinez-Lopez, Tinajero, Rodriguez, & Paramo, 2019). Multiple studies identified many risk factors that exist and have negatively impacted Latino graduation completion rates. These risk factors are delayed postsecondary enrollment, working full-time, part-time enrollment, not having a high school diploma, having children or dependent, single parent and low-income families (Cejda, 2020; Crisp & Nora, 2012; Núñez, Johnelle Sparks, & Hernández, 2011; Sáenz, Mayo, Miller, & Rodriguez, 2015).

Karaman et al. (2021) conducted a study among 496 first-year college students to investigate the relationship between academic self-concept, college adjustment and social support and its impact on college adjustment. The result indicated that multiracial Latino

students had the most significant impact on being adjusted in college compared to Whites,

Blacks, and Asian students (Karaman et al., 2021). Research also indicated that academic self-

concepts affect their success in college; social support, academic adjustment and attachment

were statistically significant predictors for academic self-concept (Karaman et al., 2021). Cejda

(2020) stressed that Latino undergraduate students are most likely to experience these obstacles

in their graduation plans. Due to these risk factors, Latino students forcing them to repeat the

courses or drop out (Cejda, 2020). Cejda (2020) pointed out that social experience and

institutional commitment play a significant role in higher education success. Evidence suggests

that social experiences and institutional commitment play a more direct role in the persistent

decisions of Whites and Asian students but a much lesser role for Hispanic students (Cejda,

2020; Crisp & Nora, 2012).

Research indicated that many Hispanic students have lower mathematical skills

contributing significantly to their university enrollment (Copur-Gencturk, Cimpian, Lubienski, &

Thacker, 2020; Swail, Cabrera, & Lee, 2004). Evidence also suggested that individual academic

factors such as high school GPAs and SAT scores and internal institution characteristics such as

selectivity and resources may affect college enrollment, persistence, completion, and lower

degree attainment for Hispanic students (Capers, 2019). Cejda (2020) pointed out that due to

their lower scores, many Hispanic students were not eligible for admission into the California

State University systems and opted to enroll in community colleges. Compared to Black and

White children, Hispanic students have lower school readiness and high school completion rates

(Reardon & Galindo, 2009).

Many Hispanic parents do not have formal education, did not graduate from high school,

or do not have postsecondary education due to their migration from Central America, family

immigration status, first-generation, and socioeconomic condition (Cejda, 2020; Swail et al., 2004). Capers (2019) argued that there are still many gaps in understanding structural, economic, cultural, and political factors and conditions that may affect Latino students' outcomes and success. Higher education administrators and educational leaders should understand the obstacles faced by Latino students and the factors that impact Latino students pursuing their bachelor's degrees (Cejda, 2020). Cejda (2020) suggested that educational leaders can identify the outcome and better understand factors facilitating baccalaureate completion by understanding their problems.

Asian Americans in Higher Education

Asian Americans generally refer to people with ethnic backgrounds in South Asia, Southeast Asia, and East Asia (Chang, 2017). Between 2000 and 2019, Asian Americans recorded the fastest population growth rate among all major ethnic groups and grew by 81% in the United States (Budiman & Ruiz, 2021; Bureau of U.S. Census, n.d.). Since the mid-19th century, Chinese and Indians have lived in the United States. Japanese lived in the late 19th century, and Filipinos and Koreans in the first decades of the 20th century (Tamura, 2001). With the Immigration and Naturalization Act of 1965, the United States allowed immigrant families to reunite, consequently attracting skilled labor from around the world, and many Asians began to arrive (Tamura, 2001). By 1994, the Asian American population had grown 900%, from 1 million to 8.8 million (Bureau of U.S. Census, n.d.; Tamura, 2001). In 2018, according to the U.S. Census, there were about 24 million, which was 5.4% of the total population of the United States, and over 1.1 million were in higher education (Bureau of U.S. Census, 2018; Chang, 2017).

The largest Asian origin groups in the United States differ significantly by education, income, and other characteristics (Budiman & Ruiz, 2021). Asian Americans face crucial challenges such as higher education and research, paradigms of achievement, family improvement, citizenship, bilingual education, culture, ethnicity, race, and school community (Chang, 2017). Ng, Lee, and Pak (2007) pointed out that academic achievement for Asian Americans is used as a beacon to enlighten the prototypical American success story- a group to admire and emulate by others. Thereby, their success produces a heightened sense of fear in the school community, which takes over classrooms, increases test scores and ruins the grading curve (Ng et al., 2007). Asian Americans are described as monolithic and recognized as a model of minority and good citizens (Budiman & Ruiz, 2021).

Asian Americans have a positive societal image through their intelligence, patience, hard work, and resourcefulness (Hassan, 2018). Recent empirical findings show that Asian Americans are described by their peers as soft-spoken, intelligent, friendly, artistic, hardworking, pleasant, and high in academic motivation and performance (Cabrera, 2019; Thompson, Kiang, & Witkow, 2016). Multiple studies indicated that teachers had perceived Asian American students as intelligent, industrious, positive racial stereotypes, compliant and quiet compared to other ethnic groups (Denson & Chang, 2009; Thompson et al., 2016). Overall, different racial groups surrounding Asian Americans seem to hold stereotypical beliefs about themselves and other dimensions, including work ethic, intellect, and social manners (Thompson et al., 2016). Asian students' competitiveness and work ethics may outperform White peers for the best educational place (Cui & Kelly, 2013). However, research suggests that when Asian students enroll in schools, they tend to cause segregation and exclusion from the mainstream by creating their

group organizations and clubs and refusing to socialize with students racialized as Whites (Cui & Kelly, 2013).

For years in Ivy League Schools, there has been a perception that Asian applicants are held to a higher standard than similarly situated White applicants (Arcidiacono, Kinsler, & Ransom, 2022; Fuchs, 2019). Cui and Kelly (2013) pointed out that the "Ivy League schools have taken the issue of Asian Prowess so seriously they have operated with secret quotas for decades to maintain their WASP credentials" (Findlay & Köhler, 2010, p.81). Evidence from the well-documented internal discussions at Harvard, Yale, and Princeton reveal why they should not admit hardworking, ambitious Asian American students because they want to keep their White Anglo-Saxon Protestant (WASP) descent on the campuses (Cui & Kelly, 2013). Asian Americans are in favor of meritocracy-based admissions into higher education (Cui & Kelly, 2013). An investigation was conducted by a group that supports meritocracy-based admissions and opposes all race-based admissions criteria. Asian Americans scored higher than any other racial/ethnic applicants on admissions measures such as test scores, grades, and extracurricular activities (Wong, 2019). However, the analysis found that students' personal ratings significantly reduced their admission chances (Wong, 2019). A non-profit organization, Students for Fair Admissions (SFFA), filed a petition to the U.S. Supreme Court to determine whether the university's use of race in its admissions process intentionally discriminates against Asian Americans and favors White applicants (Pearce & Perrotte, 2021). Recent lawsuits exposed Harvard's Asian applicants' to having better GPAs, higher test scores, and specific extracurricular activities than their counterparts of any other race, but applications were rejected (Wong, 2019).

Harvard's admissions officers evaluate each candidate individually and assign ratings on various matrices such as academic qualifications, personal attributes, overall leadership,

extracurricular activities, and athletic activities based on a whole-person review (Pearce & Perrotte, 2021). The other characteristics collected from application materials suggested that the GPA and test scores were not only the factors in the selection process (Pearce & Perrotte, 2021). Statistical analyses proving or disproving discrimination were conducted by professor Arcidiacono on behave of SFFA alleging discrimination against Asian applicants and by Professor Card defending against these allegations on behalf of Harvard (Arcidiacono et al., 2022; Fuchs, 2019). Professor Card's multidimensionality analysis suggested that students admitted to Harvard perform well across multiple profile ratings that support Harvard's Arguments (Arcidiacono et al., 2022). Harvard argued that its admissions policy did not discriminate against Asian students because the standard test scores were not only the factors in the selection process (Pearce & Perrotte, 2021). Other matrices, such as personal attributes, overall leadership, and extracurricular and athletic activities, were considered for the admissions process (Arcidiacono et al., 2022; Pearce & Perrotte, 2021). Professor Arcidiacono presented an Index Decile analysis and showed that Asian American students are discriminated against, which aligns with the SFFA argument (Arcidiacono et al., 2022; Fuchs, 2019).

The court considered whether personal rating should be included in models assessing race's effect on the probability of admissions (Pearce & Perrotte, 2021). When personal rating was included in the model, the logistic regression showed that Asian applicants' identity was not statistically significant compared to other students admitted to Harvard. When excluded, Asian students had a negative effect on their probability of admission (Pearce & Perrotte, 2021). The court decided that the model, which includes the personal rating, was completer and more appropriate to include rating despite its correlations with race (Pearce & Perrotte, 2021). The First Circuit Court agreed with the decision. However, the Students for Fair Admissions seeks to

have Supreme Court overrule its prior cases and hold that higher education can no longer use race as a factor in admissions decisions (Pearce & Perrotte, 2021). However, in the United States Supreme Court, moderate conservative Justices hold the balance of power; therefore, if the SFFA wins the case, and in the future, higher education institutions can no longer use race as a factor in admissions (Totenberg & Singerman, 2022). Many psychologists are concerned that if the Supreme Court considers affirmative action unconstitutional, it will reduce higher education access for people of color (Pearce & Perrotte, 2021). The opponents of the affirmative action plan argued that affirmative action was introduced 50 years ago and is not applicable in the 21st century (Sawchuk, 2021).

Many psychologists are concerned that if the Supreme Court overrules the affirmative action plan and restricts the consideration of race in admissions decisions, that will reduce higher education access for people of color (Pearce & Perrotte, 2021). The opponents of the affirmative action plan argued that it was introduced 50 years ago and is not applicable in the 21st century (Sawchuk, 2021).

White Students in Higher Education

According to the United States Bureau of Labor Statistics 2019, indicates that White individuals comprise approximately 61% of the United States population (Bureau of Labor Statistics, 2019; Bureau of U.S. Census, 2019). Some researchers predict that by 2050, the White population will constitute less than 50%, and they will no longer be the predominant racial group in the United States (Garriott et al., 2008). These patterns of changes may have specific implications for structural systems within the United States, predominately by Whites (Garriott et al., 2008). The U.S. Census Bureau data suggested progress in educational attainment across various ethnic groups between 2010 and 2019; however, the gap between White students and

non-Whites still exists (Allen et al., 2021; Garriott et al., 2008; Rojas-LeBouef, & Slate, 2012; U.S. Census Bureau, n.d.).

A study suggested that as the student body in higher education became more diverse ethnically and racially, White students enrolled declined between 1995-96 and 2015-16 (Espinosa et al., 2019; Integrated Postsecondary Education Data System, n.d.). During the same period, ethnic and racial minority students increased to 45%, and most of the growth was attributed to Hispanic enrollment, and the gap between Whites and Black students did not change measurably (King et al., 2016). The increased Hispanic enrollment and decreased White enrollment may contribute to the Latino population growth, and the White overall population decreased over 20 years (Espinosa et al., 2019). Although more racial and ethnic students gained access to postsecondary education, equity gaps in enrollment, graduation, persistence, and completion of higher education still remain (Espinosa et al., 2019).

The United States' higher education system is greatly affected by the increased number of racial and minority groups of students (Darling-Hammond, 2016; Garriott et al., 2008). Because higher education is regarded as an essential pathway to economic and social development, many minority students will likely pursue postsecondary education (Garriott et al., 2008). Many historically predominant White institutions (PWIs) made a tremendous effort to increase and retain minority students, significantly impacting the national average of minority students' enrollment (Darling-Hammond, 2016). Despite the increased student diversity, colleges and university campuses do not create meaningful opportunities for minority students, especially for cross-racial, social, and academic interactions (Darling-Hammond, 2016). Garriott et al. (2008) examined the contributions of racism to White students' college adjustment and self-esteem. Findings suggested that White students who embrace overtly racist attitudes and express

racial dissonance may also exhibit a lower level of self-esteem (Garriott et al., 2008). The implication of this study concludes that creating a diverse, culturally sensitive college environment is urgent to reduce racism on higher education campuses (Garriott et al., 2008).

Historically, Whites have dominated the college and university population, including students, faculty, staff, and administration (Garriott et al., 2008). Garriott et al. (2008) argued that in order to develop realistic college environments, there might be unique challenges from Whites students regarding their multicultural sensitivity and competence. Pope, Reynolds, and Mueller (2019) argued that multicultural sensitivity and competence have never been simple for individual beings and doing better across the line of differences; instead, it relies on one's awareness and knowledge of institutional structures, personal interaction, and organizational processes. Pope et al. (2019) highlighted that multicultural competence does not depend on people who dominate their social identities, such as Black, White, heterosexual, homosexual, or religious.

Nevertheless, multicultural competence is the structure of power that creates people who have not preferred whiteness, cissexism, and other structural strength that create disparities in the distribution of resources and life changes (Pope et al., 2019). Only by sustaining one's multicultural awareness, skills, and knowledge of recognizing and dealing with oppressive structures can one's interactions hope to reflect multicultural interpersonal competence (Pope et al., 2019). In order to change the demographic higher education landscape, many educators, psychologists, and researchers believe that there is a necessity for tolerance, beliefs, acceptance, and attitudes of both White and non-White students and faculty regarding race, racism, multiculturalism and diversity (Bonilla et al., 2021; Bonilla-Silva, 2015; Garriott et al., 2008).

American Indians/Alaskan Natives/Indigenous in Higher Education

As per the 2019 U.S. Census, there are 5.7 million American Indians/Alaskan Natives (AI/AN), comprising 1.7% of the total population in the United States (Bureau of U.S. Census, 2019). American Indians/Alaskan Natives are the original people living in North, South, and Central America who maintain tribal affiliation (Johnson, Myers, Ward, Sanyal, & Hollist, 2017). According to IPEDS, AI/AN will comprise only 1% of the undergraduate and less than 1% graduate population of the United States (Bureau of U.S. Census, 2019; National Center for Education Statistics, n.d.). These AI/AN sometimes left out of postsecondary research and data reporting due to the smaller sample size (Johnson et al., 2017). Research also suggested that AI/AN students are more likely to require and receive a grant and financial aid than other students but less likely to take out student loans (Johnson et al., 2017). Research suggested that in 2015-16, 90% of AI/AN students received grant aid compared to 77% of all students, and 31% of AI/AN undergraduate students received federal loans compared to 40% of all students (de Brey et al., 2019; Johnson et al., 2017; National Center for Education Statistics, 2019-20a). The AI/AN students are less likely to enroll in college preparation courses or advanced placement in high school and have fewer family members who have attended college (Johnson et al., 2017). Data suggested that 21% of AI/AN children under eighteen lived in a household with their parents who completed a bachelor's degree or higher degree compared to 52% of White families (Johnson et al., 2017).

The severely underrepresented American Indians/Alaskan Native/Indigenous students and faculty in higher education is an ongoing issue; they face many challenges due to their socioeconomic background (Johnson et al., 2017). Indigenous students' college persistence is a significant concern in the United States and globally (Walton, Clark, Pidgeon, Arnouse, &

Hamilton, 2020). Walton et al. (2020) argued that indigenous students had significantly lower university participation and dropout rates than non-indigenous students. Walton et al. (2020) claimed that many Indigenous college students come from rural areas while other students are from urban areas. Students from rural areas experience not only transition from high school to college or university but often face the cultural shock of moving to a city that can affect their postsecondary education experiences (Bomberry, 2013; Walton et al., 2020).

Various research suggests that when Indigenous students are in college, they often face a lack of financial support, childcare, access to elders, affordable housing and other services and programs (Bomberry, 2013; Hare & Pidgeon, 2011; Walton et al., 2020). Most of them are apart from those support networks and detached from cultural ceremonies, which could negatively affect the persistence of Indigenous students' future endeavors (Bomberry, 2013; Hare & Pidgeon, 2011; Walton et al., 2020). To improve their persistence in higher education, researchers suggested that most Indigenous students require academic and poverty-related support, such as financial, social, and psychological support (Walton et al., 2020). A study was conducted among Indigenous female single-parent students, revealing that each requires sufficient financial aid related to poverty, childcare, and affordable housing (Walton et al., 2020). In addition to financial support, Indigenous students need cultural support, such as Indigenous ceremonial activities at college intersecting with social engagement with faculty, staff, and other students (Walton et al., 2020).

The statistical data suggested that American Indian/Alaskan Native students remain unreported or merged into minorities or underrepresented groups (Johnson et al., 2017; Walton et al., 2020). They assumed that all minority groups were the same or excluded from postsecondary data because of their low representation (Johnson et al., 2017). Some researchers argued that if

the number of AI/AN is not taken into consideration or low enough to exclude from diversity discussion, then administrators, faculty, researchers, and policymakers would not have opportunities to learn more about AI/AN students in higher education (Johnson et al., 2017).

Multiracial Students in Higher Education

Two or more race groups are a complex issue, especially in data collection in higher education (Liebler & Halpern-Manners, 2008). More than two races United States population is almost 2% (Espinosa et al., 2019). Between 2008 and 2018, IPEDS categorized Asian and Pacific Islanders and added two or more race groups for students who self-identified two or more race groups (de Brey et al., 2019; Integrated Postsecondary Education Data System, n.d.). Baker, Klasik, and Reardon (2018) argued that the two or more races category was introduced to re-estimating gaps after recategorizing multicultural students into different race groups.

Minority Faculty in Higher Education

Research indicated a significant gap between the faculty's racial and ethnic composition and the United States population distribution (Rucks-Ahidiana & Bork, 2020). According to the U.S. Census Bureau, the population distribution in the United States is approximately 61% Whites and 39% are non-Whites (Bureau of U.S. Census, 2019). A survey was conducted among full-time faculty members of 2,774 IPEDS degree-granting postsecondary institutions. The results suggested that 76.2% of faculty members are Whites, 10.9% are Asians and 12.9% underrepresented minorities (American Association of University Professors, 2018). Although racial minority faculty positions are growing due to the increased number of minority doctoral students and higher education institutions are committed to hiring more racially diverse faculty (Rucks-Ahidiana & Bork, 2020). While White doctorate-degree holders are still the majority, non-White Ph.D. recipients accepting academic jobs increased remarkably (Rucks-Ahidiana &

Bork, 2020). However, Black, Latino and Asian professors are entering academia, and their hiring, salary, and promotion are comparatively lower than White professors (Rucks-Ahidiana & Bork, 2020).

Research suggests that tenure-track non-White underrepresented faculty members face disadvantages that their counterparts, Whites, do not experience (Rucks-Ahidiana & Bork, 2020). Non-White faculty members must respond to much greater student demands for counselling and mentoring, especially issues associated with race and racism on the campuses, compared to their counterparts (Rucks-Ahidiana & Bork, 2020). As legitimate scholars, Non-White faculty members must do more psychological and emotional work to be visible. A report indicated that three-quarters of Asian, Black, and Hispanic professors worked harder than less than half of White professors (Rucks-Ahidiana & Bork, 2020). This invisible work involves mentoring and supporting students, legitimizing students' research, and involving racial/ethnic microaggressions that most institutions do not recognize (Rucks-Ahidiana & Bork, 2020).

A recent Harvard University Graduate School of Education analysis suggested that White faculty and non-White faculty have different perceptions of diversity and inclusion on campus (Flaherty, 2021). 73% of White faculty members are more likely to agree that visible leadership supports and promotes diversity on the campus than only 31% of Black faculty members agree that visible leadership supports and promotes diversity (Flaherty, 2021). Anderson (2021) is surprised that there is a significant gap between White and Black faculty members' perceptions of promoting diversity and inclusion on campuses. Anderson (2021) added that White faculty feel their colleagues and leadership fully support diversity and inclusion; however, the Black faculty disagree. Flaherty (2021) argued that even a higher perception gap exists on how department faculty support and promote diversity in their department. Research indicated that

78% of White faculty agree that their department is committed to diversity and inclusion. In comparison, 28% of Black faculty disagree that their colleagues are committed to promoting and supporting diversity (Flaherty, 2021). Many educators argued that to improve diversity and inclusion on campuses, an institution can move from illusion to reality by forming genuine partnerships with organizations in the United States that require collective action on systematic change in the institutions (Flaherty, 2021).

Monaghan (2018) argued that the progress of minority hiring has ceased due to public funding cuts, and many of the hiring are shown as illusory that contribute to minority faculty members' psychological suffering. Monaghan (2018) added that even White sympathetic faculty members sometimes make the academy a stressful place for underrepresented minority faculty and students. Monaghan (2018) stressed that African Americans, Hispanics, and other historically excluded minority populations remain far less represented in university faculties than in the general population, especially in prestigious colleges and universities. Minority faculty often serve as ethnic representatives and unofficial diversity consultants within the institution setting and may represent an institutional mascot (Monaghan, 2018). Rucks-Ahidiana and Bork (2020) suggested that higher education institutions may address these racial disparities and inequalities by acknowledging invisible extra work performed by non-White faculty. The administration must recognize their involvement and commitment to the schools, support and mentorship of non-White faculty, and create equality for all professors (Rucks-Ahidiana & Bork, 2020).

Although colleges and universities have made some progress in increasing faculty diversity, the percentage of minority faculty remains unacceptably low, and the demographics of higher education faculty do not reflect the population (SREB, 2021). Minority faculty serve as

role models, and diversity will positively impact campus students (SREB, 2021). A study indicates that increasing the number of minority faculty on higher education institutions' campuses can reduce challenges of common stereotypes about who produces and delivers knowledge in society (Trejo, 2020). The minority faculty may have different research interests and approaches than Whites and can offer new concepts in their fields of study (Trejo, 2020). Higher educational institutions can create programs that target preparing underrepresented students for doctoral studies, such as McNair Scholars, Meyerhoff Scholars and Gates Millennium Scholars programs (SREB, 2021). Trejo (2020) pointed out that higher education institutions must do more than rely on the symbolic structure of diversity for effective diversity and inclusion practices to become a reality. Colleges and universities must employ and engage underrepresented and well-represented skilled faculty, scholars, and leaders to enhance diversity and inclusion (Trejo, 2020). They must develop strategies based on data and metrics to identify faculty inequalities and engage all faculty in achieving excellence in diversity and inclusion (Trejo, 2020).

Higher Education Admissions and Enrollment Process

Higher education enrollment programs play a crucial role in establishing an institutional mission and vision (Coleman, Keith, & Webb, 2020). Although admissions and enrollment are connected, there is a fundamental difference. Students must be admitted first to be enrolled in a school or program (Carlevatti, 2020). Carlevatti (2020) argued that if minority and underrepresented students are behind in the admissions race, they will also be behind in the enrollment process compared to Whites. King et al. (2016) added that college enrollment also correlated with socioeconomic status and parent education, which influences the relationship between race and ethnicity of college-going students.

Research suggested that fewer high school students from Blacks and Hispanics enroll at selective and elite institutions than Whites and Asians (King et al., 2016). Since disadvantaged students enroll at institutions that require passing the admissions process, they are behind from competition due to their family's socioeconomic status (King et al., 2016). Bussey, Dancy, Parker, Peters, and Voight (2021) argued that access to selective college admissions is still a problem for underrepresented minorities and students of color. The researchers suspected that disadvantaged minority students might never compete with those who belong to educated, upper-class families despite their racial backgrounds because they grew up in lower family-income families, lower socioeconomic backgrounds and are first-generation college students (Bussey et al., 2021). Neklason (2019) argued that family income had benefitted applicants in enrollment considerations such as access to selective college admissions preparatory schools, paid tutors, trainers, extracurricular activities, and sizable donations.

Higher Education Graduation Rates

American higher education institutions currently face one of the most pressing issues the number of students who fail to graduate (Creighton, 2007). According to IPEDS, the graduation rates within 150% of the four-year standard program completion time at Title IV degree-granting postsecondary institutions: Asians 74%, Whites 64%, Blacks 40%, Hispanic 54%, Pacific Islanders 51%, American Indians/Alaskan Natives were 39%, and for multiracial were 60% for the 2016-2017 graduation year (Cohort entry 2010-15) (de Brey et al., 2019; National Center for Education Statistics, 2018b). The graduation rate for Asians is the highest, and Blacks and American Indians/Alaskan Natives are the lowest. The graduation rates reduce as the portion of Black students increases (Bowman & Denson, 2022). Their study suggested that if a school has only 5% Black students, White students' graduation rates are 16 times higher than Black

students. However, if the school has 65% Black students, the graduation rates for White students are only 4% more than for Blacks (Bowman & Denson, 2022). The overall minority student retention rates are lower than for White students (Stout et al., 2018).

The structural barriers and unfriendly campus environments adversely affect the college graduation rates for minority students (Bowman & Denson, 2022). The perceptions of an unpleasant campus climate for minority students are associated with the lower institution's commitment and lower students' persistence and retention (Bowman & Denson, 2022; Johnson et al., 2017); however, the exact relationship is non-significant for White students (Bowman & Denson, 2022). Since racial minority students face an unwelcome campus climate frequently, promoting a favorable environment is necessary for the success of minority students (Bowman & Denson, 2022). Ethnic student organizations, cultural centers, academic departments, or programs can significantly promote minority students' graduation rates (Johnson et al., 2017). A study was conducted among South Asian American undergraduates at several public four-year institutions. The results showed that connecting people with similar cultural backgrounds could promote persistence for underrepresented minority students (Bowman & Denson, 2022).

Higher education institutions are working to increase student persistence and improve minority graduation rates (Banks & Dohy, 2019). Research indicated that Under the University Innovation Alliance (UIA), 11 public universities in the United States made up a consortium that is engaged in an exchange of best practices for retention and graduation rates of their colleges (Banks & Dohy, 2019; Bisoux, 2018). This membership has resulted in an increase in graduation rates by 24.7% and completion of an undergraduate degree by 9.2% (Banks & Dohy, 2019; Bisoux, 2018). From these positive outcomes, the UIA projected that by 2025, the member universities would produce 94,000 graduates (Banks & Dohy, 2019; Bisoux, 2018).

Higher Education Institutions Locale

The geographic location of colleges and universities plays a crucial role for students' families with lower incomes and being financially disadvantaged (DeRuy, 2016). The student and faculty diversity variations in different parts of the country are significantly different (Koricich, Chen, & Hughes, 2018). Koricich et al. (2018) emphasized that students from rural communities face numerous challenges and experience lower graduation attainment than metropolitan areas. Research supports that students in rural communities are disadvantaged by poor access to popular programs, colleges, and universities (Koricich et al., 2018). Low-income and first-generation university and college students disproportionately prefer to attend institutes close to home due to their personal financial conditions, community ties, parental support, and jobs, even though having scholarships or long-distance schools is a good fit for them (DeRuy, 2016). A study indicated that 57% of first-year college students enrolled in four-year colleges attend a college within 50 miles of their homes (DeRuy, 2016).

Furthermore, students of color and lower-income families enroll in colleges that are close to their homes (DeRuy, 2016). Park, Sanders, Cope, Muirbrook, and Ward (2021) argued that those students who live in remote areas face more crucial challenges than urban students from areas. There are many factors beyond students' control to consider for selection, such as socioeconomic status, ineffective teachers, lack of preparedness, awareness of higher education options, race and ethnicity, and distance from higher education institutions (Park et al., 2021). In order to decide to attend a better college or university located in a different geographic region, other factors involved include parental academic attainment, students' achievement, financial resources, and clear expectations and encouragement from parents and teachers (Park et al., 2021).

The regional-level diverse student body has an essential regional economic benefit (Franklin, 2013). Franklin (2013) argued that if a particular geographical location successfully retains diverse and educated postgraduate students, the areas will have more diverse student bodies that may have long-term economic growth related to ethnic diversity and human capital. The geographical location with higher racial and ethnic diversity would have the most diverse student bodies that may benefit firms and regions economically (Franklin, 2013). However, demographic location alone is not responsible for the observed variation in student body diversity, and other characteristics of the institutions and geographical areas may play an essential role in student diversity (Audretsch et al., 2010).

Admissions Selectivity in Higher Education

Higher education cultures and structures vary significantly depending on the institution's selectivity, especially for elite institutions (Holland & Ford, 2021). A study was conducted by analyzing IPEDS admissions webpage data of 278 degree-granting institutions, postsecondary colleges and universities across the United States to understand whether the student's selectivity plays any role in higher education diversity (Holland & Ford, 2021). Evidence indicates that highly selective institutions represent their diversity by promoting their institution diversity through advertising or marketing, focusing their institution's involvement in ethnic-racial activities on the campuses than less selective institutions (Holland & Ford, 2021). In order to achieve diverse classes, highly selective institutions use admissions marketing recruitment tools and engage in practices that emphasize more to attract underrepresented minority students more than less demanding institutions (Friedman, 2018; Holland & Ford, 2021). To secure their own prestige, highly selective colleges and universities market their ethnic-racial diversity and emphasize more to keep minority students (Friedman, 2018).

Research showed that elite colleges and universities promote student diversity by de-emphasizing White populations and drawing attention to the non-White ethnic-racial student population (Holland & Ford, 2021). However, it was also found that less selective institutions have a higher number of minority students, such as Blacks and Latinos (Holland & Ford, 2021). The less selective institutions tend not to represent their ethnic-racial diversity or engage in strategies that appear to de-emphasize their underrepresented minority students (Byrd, 2019; Holland & Ford, 2021). Megan and colleagues argued that the institutional habitus of less-selective colleges and universities influences practices and policies that differ across the field, which leads to variations among colleges and universities (Byrd, 2019; Holland & Ford, 2021).

Diversity Gap in Medical and Nursing School

The Association of American Medical Colleges (AAMC) and the National Academy of Medicine (NAM) have identified that a more diverse population of medical students is required to reduce the diversity gap and increase minority representation in a healthcare organization (Chatterjee et al., 2020). In 1970, an AAMC task force explored how to improve the recruitment and retention of minority applicants from underrepresented racial and ethnic groups, including Latinos, African Americans, and Native Americans (Chatterjee et al., 2020). In the early 1990s, the AAMC committed to enrolling 3000 underrepresented minority students in medical schools by 2000; unfortunately, multiple studies suggested this goal was not met (Chatterjee et al., 2020; James Jacob, 2015; Smith, Cech, & Metz, 2014). One study indicated that fewer black males matriculated in medical school in 2014 than in 1978 (Smith et al., 2014). Another study also disclosed that minority representation among the AAMC members differs significantly from the ethnic and racial breakdown of the United States population (Chatterjee et al., 2020).

Nurses of color are underrepresented in healthcare organizations in the United States (Noone & Najjar, 2021). Smiley et al. (2018) argued for an increased nursing workforce from minorities; however, the survey indicated that it remains a significant gap compared to their population. Noone and Najjar (2021) specified that the selection process could introduce bias during the admissions. The selection of candidates can be involved at any point during evaluations, such as transcripts review, essay review, standardized test review, and quality of the school students attended (Noone & Najjar, 2021). Applicants' race, gender, age, weight, disability, physical characteristics and stereotypes may influence decision-making (Noone & Najjar, 2021). Admissions officers may unintentionally prefer applicants who have had similar experiences as they have (Noone & Najjar, 2021). Noone and Najjar (2021) claimed that in the past decades, considering race in the admissions process has dropped dramatically. Kehal, Hirschman, and Berrey (2021) conducted a study on affirmative action plans. The result showed that half of the universities and colleges never considered race in their samples in their admission process (Kehal et al., 2021; Noone & Najjar, 2021).

Diversity Challenge in Higher Education

Many stakeholders do not understand different higher education institutions' diversity policies (Coleman et al., 2020). Hence, admissions administrators may misrepresent and misinterpret admissions policies during students' admissions decisions (Coleman et al., 2020). Boliver (2016) indicated that ethnic minority applicants are less likely to receive admissions offers than their equivalent White peers. The research identified a tremendous difference in admission chances that were too small for the ethnic minority, and inequalities in admissions opportunities were more significant (Boliver, 2016). Boliver (2016) proclaimed that as the percentage of ethnic minority applicants increases, the comparative odds of an offer decrease

compared to Whites, even though both minority and white candidates have the same merit and qualifications. Thornhill (2019) claimed that White admissions officers are the gatekeepers for the higher education enrollment process, particularly for predominantly White institutions (PWIs). Admissions officers ensure that race remains salient during the enrollment process within the historical and primarily predominately White institutions (HPWIs) admissions regime (Thornhill, 2019).

A study was conducted among 311 admissions officers at selective colleges focused on their background decisions (Bowman & Bastedo, 2018). Bowman and Bastedo (2018) found that many selective colleges and universities rely on their alumni for admissions. Research indicated that more than half of respondents make admissions decisions based on alumni recommendations (Bowman & Bastedo, 2018). The analysis also revealed that the non-white, minority, underrepresented admissions officers might offer admissions to low-socioeconomic status applicants (Bowman & Bastedo, 2018). Since minority students face significant challenges getting admitted into the higher education system, reducing the diversity gap in higher education would be more challenging to accomplish (Thornhill, 2019). However, the diversity challenge is not just about admitting more diverse into college; it is about getting more diverse students through college (Murrell, 2019).

Improving higher education's diversity in postsecondary institutions is a top priority and long-term goal for many higher education institutions in the United States (Bryant, 2021; Stout et al., 2018). Unfortunately, a recent report by IHEP suggested that much higher education institutions are undercutting campus diversity through inequitable recruitment, admissions and enrollment practices that restrict opportunities for minority students (Bryant, 2021; Bussey et al., 2021). Research indicated multiple facets of the admissions process that exclude minorities, such

as traditional recruitment policies and practices for wealthy students, early and legacy

admissions, a standardized testing system for entries, and an equitable student body at the

institutions (Bryant, 2021). Research also indicated inadequate support for underrepresented

minority students on campuses, and institutions need to improve their support for underserved

minority students (Bauman, Bustillos, Bensimon, Brown, & Bartee, 2005).

Summary

The intention of the literature review was to synthesize the existing knowledge on higher

education diversity and connect this knowledge to the proposed study. An analysis was

conducted to investigate diversity on higher education campuses, understand student, faculty,

and institution factors, and potentially identify a literature gap pertaining to higher education

diversity and inclusion. This analysis scrutinized how racial/ethnic groups are represented on the

higher education institutions' campuses, investigated potential existences of diversity gaps,

connected past and present challenges, and made recommendations for improvement. For this

study, social identity theory was applied as a conceptual framework to examine the intercultural

relationships among students and faculty because SIT will elaborate on why and how different

ethnic groups act as group members and how this influence and reflect their self-esteem and

perceptions (Tajfel & Turner, 1979; Trepte & Loy, 2017). The SIT was suitable for this study

because this theoretical framework emphasized how group members are incorporated into self-

concept and how self-concept will impact students' and faculty members' views of other

outgroup members (Leaper, 2011). The SIT emphasized students' and faculty's personal and

social identities, conformity, and socialization with other peer groups (Leaper, 2011). Based on

the theoretical foundation of SIT, the literature assessment further investigated if the diversity

gap exists and how well racial and ethnic groups are represented on college and university campuses in the different geographic regions of the United States.

Diversity and inclusion are ongoing challenges on college and university campuses throughout the United States (Luster-Edward & Martin, 2019). A literature search indicated racial disparity and discrimination still exist in higher education (Wong, Elmorally, Copsey-Blake, Highwood, & Singarayer, 2021). Higher education institutions are one of the specific areas that misrepresent minority populations throughout the student body, faculty, administration, and leadership (Brown-Glaude, 2009; Luster-Edward & Martin, 2019). Luster-Edward and Martin (2019) suggested that the disparity of minority populations fosters a fragmented culture for higher education institutions. A literature search indicates that minority students and faculty recruitment and retention contribute significantly to the diversity gaps in higher education (Griffin, 2019).

Many researchers highlighted that historically access to higher education for minority groups, particularly African Americans, had not been promising (Brown-Glaude, 2009; Crowson, Mitchell, & Shipps, 2011; Luster-Edward & Martin, 2019). Although the administrators acknowledge higher education diversity issues and put their effort into equitable access and improving minority students' self and professional development and academic success; however, research indicates that most institutions lack diversity (Luster-Edward & Martin, 2019). Despite all efforts taken by higher education administrators to resist racism, bigotry, and increased diversity, unconscious bias may be prevalent, causing an immense amount of isolation and self-segregation on higher education campuses across the United States (King et al., 2016; Staats, 2016). Literature research indicated that minority students, particularly Black and Hispanic college retention, persistence, and graduation rates, are severely affected by

structural barriers and unwelcome campus racial climates that include psychological and behavioral dimensions (Bowman & Bastedo, 2018). Bowman and Bastedo (2018) highlighted the perception of campus racial climates among minority students as often associated with lower retention, persistence, and graduation rates.

There are many reasons that colleges and universities may choose to welcome diversity. According to the U.S. Supreme Court, diversity provides compelling benefits and is instrumentally valuable (Starck, Sinclair, & Shelton, 2021). Starck et al. (2021) argued that instrumental reasonings are a predominant rationale for diversity efforts in higher education. They are preferred by White Americans, not Black Americans or Hispanics and correspond to tremendous academic success and achievement disparities (Starck et al., 2021). Their finding suggested that diversity should be considered in institutional decision-making because the rationales behind institutions embracing diversity have nonlegal consequences (Starck et al., 2021). Hence, the law cannot establish diversity, and individuals working in higher education institutions are responsible for embracing and developing diversity on their campuses (Starck et al., 2021). Higher education administrators and stakeholders should consider further improving educational opportunities for racial and ethnic groups and increasing diversity in higher education (Baker et al., 2018).

CHAPTER THREE: METHODS

Overview

The purpose of this quantitative study was to determine the predictive relationships between student diversity, faculty diversity, institutional locale, enrollment size and admissions selectivity and construct a relationship with graduation rates. This study examined the relationships between graduation rates and student and faculty diversity based on their racial and ethnic identities. The study determined that graduation rates are related to other institutional factors, including geographical location, enrollment size and admissions selectivity. Chapter Three defines research design, research questions and hypothesis. Included here is a description of the participants, settings, and instrumentation to measure the independent and dependent variables followed by the study procedure. Finally, this section concludes with a detailed explanation of the data analysis procedure to interpret the results.

Design

For this quantitative, non-experimental study, a predictive correlation using regression analysis was employed (Warner, 2013). Correlation is a statistical procedure to determine the strength of the relationship between two or more variables, and multiple regression will be used to make predictions (Cohen, Cohen, West, & Aiken, 2003; Warner, 2013). A predictive correlational design predicts the variance of one more variable based on another variable or variables (Cohen et al., 2003). Gall, Borg, and Gall (2007) argued that predictive correlational research studies seek to discover the relationships between dependent and independent variables by utilizing multiple linear regression analysis. The predictive correlational design was used for this study to predict the relationship between the criterion variable and multiple predictor variables (Curtis, Comiskey, & Dempsey, 2016; Gall et al., 2007). This design can frequently

utilize large-scale data, such as data for this study, where aggregated public data will be collected

from IPEDS (Frey, 2018). For this study, a predictive correlational design was most appropriate

because the researcher determined the predictive relationship between the criterion variable

(graduation rates) and multiple predictor variables (student diversity, faculty diversity,

institutional locale, enrollment size, and admissions selectivity). The criterion variable was six-

year graduation rates for four-year undergraduate bachelor's degree-granting colleges and

universities in the United States that are being predicted. Based on the analysis of data, the

research question and hypothesis were answered (Gall et al., 2007).

The graduation rate is defined as the percentage of first-time, full-time undergraduate

students who complete their program at the same institutions within 150% of the standard time,

which is six years (National Center for Education Statistics, 2016). The race/ethnic categories are

White and non-White students and faculty. The non-Whites are Hispanics or Latinos, Black or

African Americans, Asians or Asian Americans, American Indians or Alaskan Natives, Native

Hawaiian, and Pacific Islanders (National Center for Education Statistics, 2021c). The locale was

the institution's physical place, such as the institutions located in urban, suburban, or rural areas

in the United States (Integrated Postsecondary Education Data System, n.d.). The NCES

classifies all territory in the United States into four types: rural, town, suburban, and city

(National Center for Education Statistics, 2020e). The institution's enrollment size represents the

number of students enrolled in the all-Title IV degree-granting four-year postsecondary

institutions in the United States (National Center for Education Statistics, 2017). The institution's

admissions selectivity rate is defined as the number of students divided by the total number of

students who applied, multiplied by 100.

Research Question

The research question for this study was:

RQ: How accurately can graduation rates be predicted from a linear combination of student diversity, faculty diversity, institutional locale, enrollment size, and admissions selectivity?

Hypothesis

The Null hypothesis for this study was:

H₀: There will be no significant predictive relationship between the criterion variable (graduation rates) and the linear combination of predictor variables (student diversity, faculty diversity, institutional locale, institutional enrollment size, and admissions selectivity) for Title IV degree-granting public, private, for-profit, and non-profit four-year postsecondary institutions.

Participants and Setting

The participants for this study were Title IV degree-granting four-year postsecondary institutions. According to the Integrated Postsecondary Education Data System (IPEDS), in the 2019-20 school year, there were 3,982 degree-granting postsecondary institutions, including 2,679 four-year and 1,303 two-year public and private institutions. As per Carnegie Basic Classification 2018, 1,994 Title IV, four-year degree-granting postsecondary institutions offer bachelor's or higher degree programs (Carnegie Classification, n.d.; National Center for Education Statistics, 2019-20b). The institutions included in this study were randomly selected from the population of 1,994 Title IV four-year degree-granting postsecondary education institutions. Title IV institutions participate in at least one federal student financial aid program in accordance with the Higher Education Act of 1965 (National Center for Education Statistics,

2019-20). Specifically, institutions for this study were four-year bachelor's degree-granting colleges and universities across eight geographic locations in the United States. The eight geographic locations were New England, Mid East, Great Lakes, the Plains, the Southeast, the Southwest, the Rocky Mountains, and the Far West. The researcher selected the number of institutions from each of the eight geographic regions based on the number of institutions located in a particular area. Institutions were selected from each of the eight regions to ensure a geographically balanced sample.

Population

The population of interest in this study was Title IV degree-granting four-year postsecondary colleges and universities. This study used a random sampling technique to choose 300 institutions from 1,994 Title IV four-year degree-granting postsecondary education institutions from all eight demographics across the United States, representing 15% of the total samples (National Center for Education Statistics, 2021e). The number of institutions was randomly selected by 15% from each state based on the total number of institutions for a particular state. The Title IV colleges and universities were classified based on their demographic areas and selected based on the number of institutions located in that particular region. For this study, institutions were considered from various Title IV doctoral, master's and baccalaureate private, public, for-profit, not-for-profit, residential, non-residential, PWIs, and HBCUs that participate in a federal financial aid program.

Participants

The participants for this study were Title IV, four-year degree-granting postsecondary institutions selected randomly across the United States. The participants were selected from baccalaureate colleges and universities as per the 2018 Carnegie Basic Classification of higher

education institutions (Carnegie Classification, n.d.). According to the Carnegie Classification

2018: Basic, in the United States, there are 1,994 Title IV, four-year baccalaureates, or higher

degree-granting postsecondary institutions (Carnegie Classification, n.d.; National Center for

Education Statistics, 2021e). For this study, the randomly selected 300 baccalaureate Title IV

public and private colleges and universities representing 15% of all four-year higher education

institutions included in the population. The sample population consisted of aggregated publicly

available archived data of 300 private, public, for-profit, and non-profit postsecondary

institutions from all eight geographic regions across the United States, those reported to IPEDS.

The private and public postsecondary institutions in the sample provide graduation rates,

student and faculty race/ethnicity, institutional location, enrollment size, and admissions

selectivity. The randomized institutions were selected, enabling generalization to the population.

Kelley and Maxwell (2003) explained that in a study related to multiple regression analysis,

sample size "can be approached from at least four different perspectives: (a) power for the

overall fit of the model, (b) power for a specific predictor, (c) precision of the estimate for the

overall fit of the model, and (d) precision of the estimate for a specific predictor" (p. 306). For

this study, 300 institutions were chosen to have a larger sample size to interpret significant

results, allowing a more accurate and precise estimation and better representation of the

generalization of the study population (Biau, Kernéis, & Porcher, 2008). Warner (2013) noted

that the minimum sample size for a correlational study should have a nondirectional test for

alpha (α) = .05, a statistical power of .80, and p^2 of .05, which requires a minimum of 153

participants for this study. However, this study exceeded the minimum requirement because the

sample included 300 institutions out of 1,994 available schools. The sample size was considered

sufficient for quantitative research and multiple regression analysis because the entire population was tested.

Settings

Aggregated data from the IPEDS data system were used for this study. IPEDS database is the most comprehensive publicly accessible archived data on students and faculty in higher education institutions (National Center for Education Statistics, 2020f). All 1,994 colleges and universities were sub-categorized and independently assigned into eight groups by their geographical locations. The researcher used a random number generator in Excel to select institutions from New England, Mid East, Great Lakes, the Plains, the Southeast, the Southwest, the Rocky Mountains, and Far West. Since the college-going population in the United States is not equally distributed across each geographic region, the researcher assigned the number of institutions required for a particular area to balance samples for geographic distributions.

The sample institutions were chosen randomly from 50 states in the United States. To have a better statistical representation and sample distribution, the researcher randomly selected all types of degree-granting postsecondary institutions, including but not limited to private, public, for-profit, not-for-profit, residential, non-residential, PWIs, and HBCUs. The sample institutions included large-multicultural, multi-college university systems to small single-campus schools. The campus locations varied from urban locations to suburban, rural, and small-town colleges and universities.

Instrumentation

Integrated Postsecondary Education System (IPEDS) archival data was used for this quantitative study to determine a significant difference between the graduation rates and faculty and student diversity based on postsecondary institutions' location, size, and selectivity. In 1986

the National Center for Education Statistics (NCES) initiated IPEDS, which requires annual

institution-level data collection. The instruments were IPEDS surveys of graduation rates,

student and faculty racial/ethnicity data, and data for the institutions' geographical location, size,

and selectivity. The researcher collected IPEDS survey data and analyzed them for this study.

The criterion variable for this study was graduation rates for bachelor's degree completers,

representing the percentage of undergraduate students graduating within six years, which is

150% of the standard completion time. The criterion variable was measured by the number of

students who graduate within six years divided by the revised adjusted cohort. According to

NCES 2021, the modified adjusted cohort defines as the cohort after revisions, such as if an

institution discovers that incorrect data was reported in the previous year and the result of

removing any IPEDS allowable exclusions such as students from military service, religious

mission or death (National Center for Education Statistics, 2021f).

To comply with the federal student aid program, Title IV colleges and universities submit

every year of six-year graduation rates (GR150) survey data to IPEDS that were used for this

study (National Center for Education Statistics, 2021g). IPEDS graduate rates survey is

conducted annually for the colleges and universities that remain in compliance with the Title IV

requirements ((National Center for Education Statistics, 2021g). The graduation rates survey

contains 48 questions that collect data for six-year graduation rates information, full-time, first-

time fall entering cohorts by student gender, race and ethnicity, time to degree completion, and

academic program. The primary purpose of the graduation rates survey is for higher education

institutions to provide NCES with information about their productivity, a mandatory compliance

requirement.

During IPEDS surveys, the data were collected for the predictor variables of student and

faculty racial/ethnicity, institutional locale, enrollment size, and admissions selectivity. There were nine categories for race/ethnicity when reporting student and employee data, including faculty. IPEDS collects the data in two parts to the question, the first part is ethnicity, and the second part is race. These are Hispanics of any race, for non-Hispanic: American Indian or Alaska Native, Asian, Black, or African American, Native Hawaiian or other Pacific Islander, White, two or more races, non-resident aliens, race/ethnicity unknown (National Center for Education Statistics, 2021c). The race/ethnicity category was developed in 1997 by the Office of Management and Budget (OMB), describing groups to which individuals belong (National Center for Education Statistics, 2021c). In 2010, the U.S. Department of Education made it mandatory to collect and report race/ethnicity data for all campus populations, such as undergraduate and graduate students, staff, and faculty (Aud et al., 2011). Students self-report their race/ethnicity during admissions, and faculty/staff self-report their race/ethnicity upon employment. (National Center for Education Statistics, 2021c). The institutions must retain both parts of the data for at least three years. Suppose any litigation, claim, audit, or action begins at the end of the three-year storage period (National Center for Education Statistics, 2021c). In that case, the applicable record must be kept until the completion of the investigation (National Center for Education Statistics, 2021c).

The survey instruments were created to describe and analyze the trend of higher education in the United States (National Center for Education Statistics, 2020a). The survey data were retrieved from IPEDS survey components of graduation rates, race/ethnicity data of students and faculty, institutional location, enrollment numbers, and admissions selectivity data. IPEDS data are used by federal agencies, state and local governments, Congress, non-government, private and professional organizations, students, and their families (National Center

for Education Statistics, 2020a). The outcome of this study may potentially contribute valuable information to state and federal government officials, political, and institutional leaders to improve diversity in higher education.

Instrument reliability and validity play a vital role in statistical measurement. All IPEDS survey instruments must meet NCES standards for their validity and reliability. Nguyen (2019) mentioned that reliability is a statistical measure that is considered reliable if the test and retest reliability of at least statistical power is 0.7. Nguyen (2019) noted that validity and reliability are not always aligned with each other. Reliability is needed but not enough to establish validity (Wellington & Marcin, 2007). It is possible is get high reliability but low validity or via-versa (Wellington & Marcin, 2007). However, validity is best established by showing that test results can accurately predict real-life behaviors (Nguyen, 2019).

Integrated Postsecondary Education Data System (IPEDS) data are collected in nine components annually in three distinct data collections: fall, winter, and spring, using web-based survey procedures. IPEDS survey components were redesigned in 2000 due to concerns and issues about the consistency of data definitions, reliability, accuracy, validity, and other quality measurements (Integrated Postsecondary Education Data System, n.d.; Jackson, Jang, Sukasih, & Peeckson, 2005; Knapp et al., 2004). IPEDS acknowledged that institutions might provide data items that are internally consistent but inaccurate regarding the institution's characteristics they are intended to represent (Jackson et al., 2005). To improve the validity, IPEDS implemented a Web-based system to collect data with build-in edit options and other quality system checks that would process the data entering the system (Jackson et al., 2005). Jackson et al. (2005) added that the system allowed institutions to correct errors in previously submitted or missing data or provide data they failed to submit to improve the data quality. In addition to IPEDS, the National

Postsecondary Education Cooperative (NPEC) identified more than 100 organizations that collect data from postsecondary institutions (NPEC, 2021). NPEC concludes that these data collections may result in inconsistent data and raise concerns about how valid IPEDS data are when compared to educational data collected by other organizations (Jackson et al., 2005).

IPEDS data were compared with similar information in the Thomson Peterson database to assess the quality. Thomson Peterson database was used to compare because it is one of the largest and most comprehensive postsecondary databases (Jackson et al., 2005). Jackson et al. (2005) conducted a study among 3,529 institutions using the same survey components to compare IPEDS and Thomson Peterson data. The results indicated that more information is likely to be found in IPEDS than in Thomson Peterson (Jackson et al., 2005). Since Thomson Peterson is one of the largest databases, results tend to confirm the perception that IPEDS is the most comprehensive data system available for information on postsecondary education (Jackson et al., 2005).

Procedures

This predictive correlational study used and analyzed previously collected IPEDS data (Creswell & Poth, 2018). Since publicly available data were used for this study, no permission was required from NCES. The researcher submitted the application to the Liberty University Institutional Review Board (IRB) for approval before collecting information from the Integrated Postsecondary Education System (IPEDS) database. Creswell and Poth (2018) emphasize that the correlational study allows for collecting and analyzing previously collected data, such as publicly available aggregated data from IPEDS. After receiving the IRB approval (see Appendix), the researcher extracted institutional data from the IPEDS database.

The researcher collected six years of archived data from the 2016-2021 academic years from IPEDS for six-year (150%) graduation rates and averaged their graduation rates. The researcher also collected 2015-2020 cohort years of racial/ethnicity data for students and faculty for Whites and non-Whites, including African Americans, Hispanics, Asian Americans, American Indians/Alaskan Natives, and more than two races (National Center for Education Statistics, 2019-20) and averaged the numbers of students and faculty by their race/ethnicity. IPEDS six years (2015-2020) institutional data was also collected for enrollment size and admissions selectivity, then averaged and analyzed. The institutions' locations were constant for all academic years (2015 -2021). The correlational study was more appropriate for this type of quantitative data because it examined the relationship between multiple predictor variables and a criterion variable (Creswell & Poth, 2018). The investigator extracted a Microsoft Excel CSV data file for 300 randomly selected institutions for this research. The researcher used the institution name and unitID provided in the data file. Microsoft Excel is a flexible and powerful tool that allows researchers to plan and make decisions (Stout et al., 2018). The researcher used NCES unitIDs and the institutional name for this study. It was eliminated if the randomly selected institution did not report graduation rates. For this study, nine institutions' data were eliminated from the sample due to no reported graduation rates data. The researcher can access IPEDS aggregated data by following step-by-step procedures.

First, for the criterion variable, the researcher extracted data from IPEDS website, selected "use the data," and selected "compare institutions." Next, the researcher copied and pasted all unitIDs obtained into IPEDS compare institutions text box. The second step was to select and compare institutions by the "name or unitIDs" and use coma to select multiple institutions to compare and select continue. Next, the researcher selected the variables for the

graduation rate survey. Next, the researcher selected graduation rate data within 150% of the

standard time four-year and two-year institutions subcategory and selected "Gender- 1997 to the

current year" (National Center for Education Statistics, 2020f). Next, the researcher chose six

years of graduation rates data from August 2016 to August 2021 for those students who enrolled

in Fall 2015 (National Center for Education Statistics, 2020f). Then selected cohort four-year

institutions and completers within 150% of standard time (National Center for Education

Statistics, 2020f). Next, the researcher selected Grand Total and selected to continue. In the same

way, the researcher selected graduation rates by their ethnicity cohort data (National Center for

Education Statistics, 2020f).

Second, the researcher selected student and faculty racial and ethnic variables for the

diversity survey for predictor variables. The Fall Enrollment (EF) data was used for student

diversity, and the fall enrollment is a measure of student access to higher education at a

traditional institution (National Center for Education Statistics, 2021a). Fall 2015 entering cohort

is the only cohort that was measured by the 2021 graduation rate (6-year period). Students who

entered in the fall of 2016, 2017, 2018, 2019, and 2020 were not counted in the 2021 graduation

period (National Center for Education Statistics, 2020f). The human resources survey measured

the number and type of staff supporting postsecondary education for the faculty (National Center

for Education Statistics, 2020f). Due to the staffing patterns, IPEDS uses Standard Occupation

Classification (SOC) system to collect that data (National Center for Education Statistics, 2020f).

The collected survey data were analyzed for the percentage distribution of full-time faculty of

their race/ethnicity (National Center for Education Statistics, 2020f). The NCES Locale

Classification and Criteria were followed for the institution locale. The NCES locale framework

comprises four primary types: city, suburban, town and rural, and each contains three subtypes

(National Center for Education Statistics, 2020g). The NCES relies on the standard urban and rural definitions developed by the U.S. Census Bureau, and each type of locale is either urban or rural (National Center for Education Statistics, 2020g). The number of reported students as being enrolled was used for the enrollment size. The student selectivity rate was calculated as the total number of students admitted divided by the total number of students applied, multiplied by 100.

The researcher explored the degree of ethnic variation among higher education students and faculty by calculating an institutional diversity score. The diversity score was used to represent the distribution of students and faculty by ethnicity within each institution (Stout et al., 2018). Stout et al. (2018) suggested that institutions with an equal distribution of students and faculty across racial and ethnic groups measured a higher diversity score in IPEDS. The higher the diversity score, the more diverse the institution is. The lower score indicates less diversity at the institution. If the institution had an equal distribution across all ethnic and racial groups would have a diversity score of 100.

In contrast, a school comprised solely of students and faculty of a single ethnic group would have the lowest score of 55. Stout et al. (2018) calculated the diversity score in multiple steps. First, the percentage of students or faculty in each ethnic group was calculated by dividing the number of students or faculty in each group by each institution's total students or faculty. The percentages of each ethnic group help to account for diverse differences in school size between colleges and universities. After calculating the percentage, the standard deviation (σ) was calculated for each ethnic group for an individual institution. Each ethnic group of student and faculty's standard deviation (σ) indicates how much student and faculty percentages differ across racial and ethnic groups within each institution. "For the Diversity Score to be more readily interpretable, take the calculated standard deviation away from 1 and multiply the result by the

result by 100, rounding to the nearest number, resulting in a possible range of Diversity Scores

from 55 to 100" (Stout et al., 2018, p. 406). Below calculations:

$$\% \text{ Of student or faculty} = \frac{\text{Number of students or faculty in each ethnic group}}{\text{Total number of students or faculty}} \times 100$$

$$\sigma = \sqrt{\frac{\varepsilon(x = \bar{x})^2}{N}} \qquad \text{Diversity Score} = (1 - \sigma)\,100$$

The researcher calculated the diversity score from the generated data. The diversity score

was imported into the IBM Statistical Package of the Social Sciences (SPSS) for analysis. Using

SPSS, the researcher performed multiple linear regression analysis on the variables to determine

whether these variables could be used to predict graduation rates. Xiao, Xu, and Xu (2015)

suggested that SPSS could be utilized a large amount of data which can help in the modelling

process by selecting appropriate mathematics and statistics to analyze and understand data better

and improve the decision-making process.

Data security was considered as it is a vital component of ethical research. Ethical

principles during various stages of research are crucial (Mootz, Taylor, Wainberg, & Khoshnood,

2019). According to American Psychological Association, guidelines include an additional

mandate for integrity, trustfulness and honesty in scientific research and accurate representation

of facts (Mootz et al., 2019). The researcher's first and foremost obligation is to protect

participants' confidentiality. The protection of participants' confidentiality was based on the

Declaration of Helsinki. Although this study will analyze aggregated publicly available IPEDS

data, participants' protection of personal secrecy was not an issue; however, the collected data

were kept in a password-protected computer.

Data Analysis

This study examined the predictor variables' predictive ability on the criterion variable.

Hence, multiple linear regression analysis was the most appropriate method for data analysis

because it will determine the predictive relationships between student diversity, faculty diversity and institutional factors with graduation rates (Keith, 2019; Warner, 2013). The multiple linear regression analysis was conducted to predict the effects of one variable on other variables (Keith, 2019; Warner, 2013; Yan & Su, 2009). Multiple regression allows the selection of the overall fit of each predictor's model and the relative contribution to predicting the value of variables based on two or more variables (Warner, 2013).

The multiple linear regression analysis consists of three stages: determining the correlation and directionality of the data, estimating the model or fitting the lines, and evaluating the validity and usefulness of the data (Sullivan & Feinn, 2012). The multiple linear regression analysis will involve determining the strength of relationships, whether the relationship is positive, negative, or curvilinear between variables, by calculating the coefficient of correlation r (Hamilton, Ghert, & Simpson, 2015; Keith, 2019). The effect size estimates the amount of variance within a population and, often denoted Pearson r, is widely used as effect size (Gignac & Szodorai, 2016; Hamilton et al., 2015). In bivariate correlation or Pearson correlation, the effect size (r) measurement is essential to test the hypothesis and to determine relationships (Gignac & Szodorai, 2016; Sullivan & Feinn, 2012). Cohen provides guidelines for effect size (r) 0.10 for small, 0.30 for medium and 0.50 for large, respectively (Gall et al., 2007; Gignac & Szodorai, 2016). The correlation coefficient (r) is expressed as a positive or negative number between -1 and 1, and the value indicates the strength or direction of the relationship (Bewick, Cheek, & Ball, 2003).

The coefficient determination (R^2) measures how well one variable's variation explains others' interpretations (Bewick et al., 2003). In multiple linear regression, R^2 also indicates how much variation of a dependent variable is explained by the independent variable (Bewick et al.,

2003). Hamilton et al. (2015) indicated that r^2 is the proportion of variance shared by two variables, and the greater the r^2, the more closely the variables vary together. The percentage of variation explained the best-fit regression line calculated from the data and testing the hypothesis (Hamilton et al., 2015). The analysis will run at a 95% confidence interval (CI) to obtain the population correlation coefficient (Bewick et al., 2003). The correlational coefficient should be at least 0.70 for a predictive study (Gall et al., 2007). The p-values and alpha (α) level also need to be calculated. In linear regression, coefficients explain the mathematical relationships or effects between each independent variable and the dependent variables, and the p-values for the coefficients indicate whether these relationships are statistically significant or not (Bewick et al., 2003).

Multiple linear regression requires that the assumption of linearity be met; there must be a linear relationship between the outcome and independent variables (Casson & Farmer, 2014; Hoekstra, Kiers, & Johnson, 2012). Olsen (2003) stated that if the assumptions are not met, there is a violation of assumptions when analyzing data. The violation of assumptions can significantly influence Type I and Type II errors that result in overestimating or underestimating the effect size and inferential measurement (Hoekstra et al., 2012; Osborne & Waters, 2002). Scatterplots can show whether there is a linear or curvilinear relationship. For this analysis, linearity was examined using a scatter plot to confirm the assumption of whether linearity was met or not (Casson & Farmer, 2014). The assumption of linearity was tested by examining a linear relationship between each pair of variables. If the variables are not linearly related, the power of the test will be reduced (Casson & Farmer, 2014). Hamilton et al. (2015) added that correlation and regression depend on underlying assumptions, and a scatter diagram of data may provide a preliminary check for the assumption of regression. An alpha (α) level of 0.05 will be used to

determine the statistical significance (Gall et al., 2007). For this study with five independent variables, the minimum sample size should have a nondirectional test for alpha (α) = .05, the statistical power of .80, and p^2 of .05, which required a minimum of 153 participants. However, 300 institutions were selected for this study which exceeded the minimum requirement and had a medium effect size. The sample size needs to be increased to avoid a Type II error and a smaller effect size (Gall et al., 2007).

The data were analyzed visually for missing data points and inaccuracies. The data were sorted for inconsistencies or data errors on each variable of student diversity, faculty diversity, institution locale, enrollment size, and admissions selectivity. The researcher uses the nominal measurement of independent variables such as student, faculty, location, enrollment size, and selectivity that can be applied for linear regression analysis by eliminating categories that do not contribute significantly to explaining the variability. A matrix scatter plot was used to detect bivariate outliers between the predictor variable, other predictor variables, and the criterion variable (Kafle, 2019).

The normality of assumption was required for an unbiased estimate of standard errors, followed by the confidence of interval and p-values (Schmidt & Finan, 2018). The researcher tested the assumption by plotting a scatterplot matrix for each pair of predictor variables and between predictor variables and the criterion variable to ensure a linear relationship between the predictor and criterion variables (Casson & Farmer, 2014). For multiple linear regression, the assumption of the normal distribution is found by analyzing scatterplots to identify the classical "cigar shape" (Casson & Farmer, 2014). Scatterplot for each predictor variable was visually inspected to determine linear functionality and detect outliers. The scatter plots of residuals ensured that the linearity, independence, and homoscedasticity assumptions were met.

The multiple linear regression assumes that there is no multicollinearity in the data (Kalnins, 2018). Multicollinearity is a statistical phenomenon in which two or more predictors' variables in a multiple regression model are highly correlated (Daoud, 2017; Jensen & Ramirez, 2013). Daoud (2017) stated that multicollinearity is one of the severe problems; if there is no linear relationship between predictor variables, they are said to be orthogonal. The variance inflation factor (VIF) is a commonly used test to detect whether multicollinearity exists in a regression analysis (Thompson, Kim, Aloe, & Becker, 2017). The reciprocal of VIF is known as tolerance (Thompson et al., 2017). Thompson et al. (2017) added that either VIF or tolerance needs to be used to detect multicollinearity. The VIF test was performed because if a predictor variable (x1) is highly correlated with another (x2) variable, they essentially provide the same information about the criterion variable (Kalnins, 2018). This test measured how much the standard error or variance of the regression coefficient estimation is inflated due to collinearity (Thompson et al., 2017). The absence of multicollinearity is required to meet the variables for this study. Typically, a VIF above 4 or tolerance below 0.25 indicates that multicollinearity might exist, and further investigation is required. Multicollinearity is present if the VIF is too high (greater than 10) and the acceptable values are between 1 and 5 (Thompson et al., 2017). However, significant multicollinearity must be corrected when VIF is higher than 10 or tolerance is lower than 0.1 (Thompson et al., 2017).

After conducting a multiple linear regression using IBM SPSS 29 package, the various outputs were used to interpret and report results. An alpha (α) level of 0.5 was used to determine the statistical significance (Gall et al., 2007). Gall et al. (2007) argued that practical significance provides more context than statistical significance in prediction studies. The relationship was used to determine practical significance. For prediction studies, the magnitude of the obtained

correlation coefficients should be at least 0.70 (Gall et al., 2007). An effect size of Pearson (r) determined how meaningful the relationship between variables and the difference between variables is (Gall et al., 2007). The multiple correlation coefficient (r^2) determined the magnitude of multiple linear regression (Gall et al., 2007). The null hypothesis was rejected at the 95% confidence level, where f and p were calculated.

CHAPTER FOUR: FINDINGS

Overview

The purpose of this quantitative study was to determine the predictive relationships between student diversity, faculty diversity, institutional locale, enrollment size and admissions selectivity and construct a relationship with graduation rates. The predictor variables were student diversity, faculty diversity, institutional locale, enrollment size and admissions selectivity. The criterion variable was six-year (150%) undergraduate graduation rates. Multiple linear regression was used to test the hypothesis. The Results section includes the research question, null hypothesis, data screening, descriptive statistics, assumption testing, and results.

Research Question

RQ: How accurately can graduation rates be predicted from a linear combination of student diversity, faculty diversity, institutional locale, enrollment size, and admissions selectivity?

Null hypothesis

H₀: There will be no significant predictive relationship between the criterion variable (graduation rates) and the linear combination of predictor variables (student diversity, faculty diversity, institutional locale, institutional enrollment size, and admissions selectivity) for Title IV degree-granting public, private, for-profit, and non-profit four-year postsecondary institutions.

Data Screening

The researcher sorted the data and scanned for inconsistencies in each variable. No data errors or inconsistencies were identified. A matrix scatter plot was used to detect bivariate outliers between predictor and criterion variables. No bivariate outliers were identified. See Figure 2 for the matrix scatter plot.

Figure 2

Matrix Scatter Plot
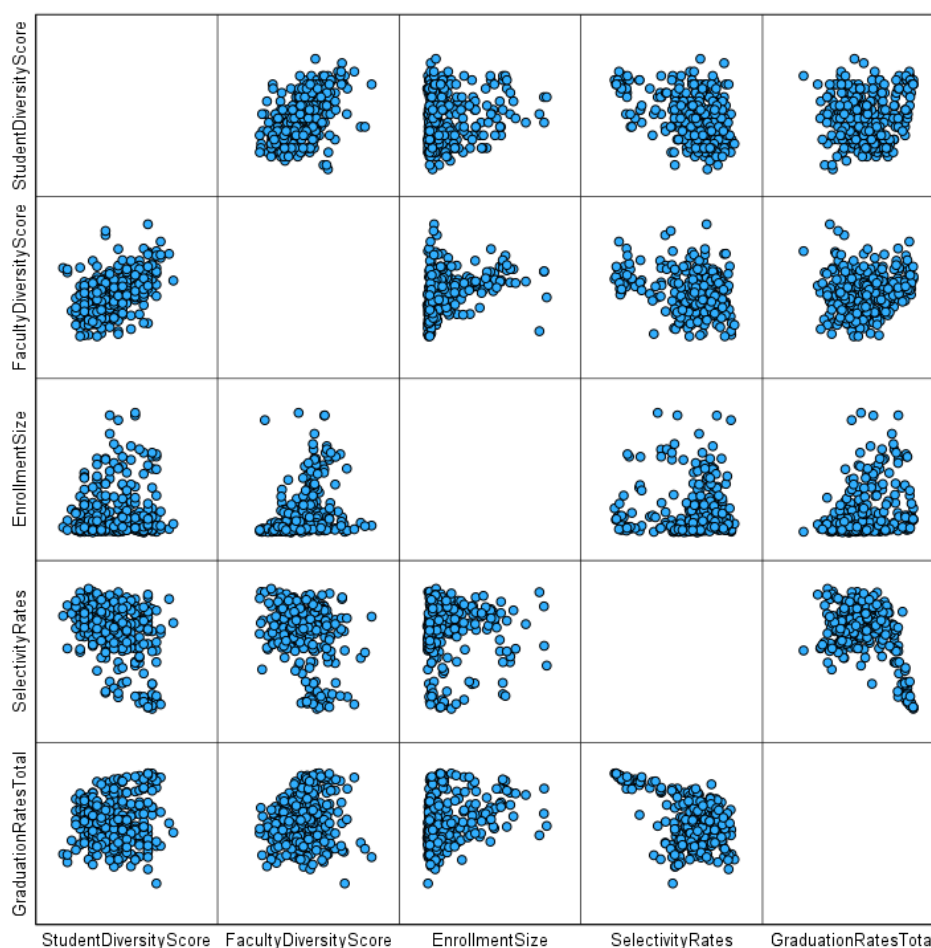
Descriptive Statistics

Descriptive statistics were obtained on each of the variables. The final sample consisted of 291 institutions. From IPEDS database, the researcher randomly selected and collected 300 Title IV, four-year degree-granting postsecondary institutions' data from all states and eight geographical regions of the United States. Nine institutions were removed from the SPSS data analysis due to missing graduation data for specific groups of Pacific Islanders and American Indian/Alaskan Natives due to no student enrolled for a particular cohort year. From 2015-2020, IPEDS students' cohort data were extracted, calculated a single combined average of six years

using Excel for each institution and used to calculate student diversity score, faculty diversity

score, enrollment size, and selectivity rates. The six-years (150%) graduation rates data were

collected from August 2016 through August 2021, averaged, and analyzed. The data represents

eight geographic locations and all states of the United States. The enrollment size varies from the

lowest, 305, to the highest, 47,269, the admissions profile varies from highly selective to less

selective, and locations vary from urban to rural. The data includes three types of degree-

granting postsecondary institutions: public, private for-profit, and private non-profit. Table 1

describes the descriptive statistics of each variable.

Table 1

Descriptive Statistics

	N	Min	Max	M	SD
City	291	0	1	.38	.487
Suburb	291	0	1	.25	.434
Student Diversity	291	65.0	91.0	77.03	5.547
Faculty Diversity	291	62.9	84.9	71.36	4.020
Enrollment Size	291	305	47,269	8,182	9,606
Selectivity Rates	291	5.1	99.3	65.51	21.689
Graduation Rates Total	291	10.8	97.3	60.27	18.378
Valid N (listwise)	291				

Figure 3 illustrates the institution's percentage distribution of their locale, types, and

geographical areas, and Figure 4 depicts the graduation rates based on their ethnicity.

Figure 3

Distribution of Institution Profile Frequencies based on Locale, Types and Geographical Region
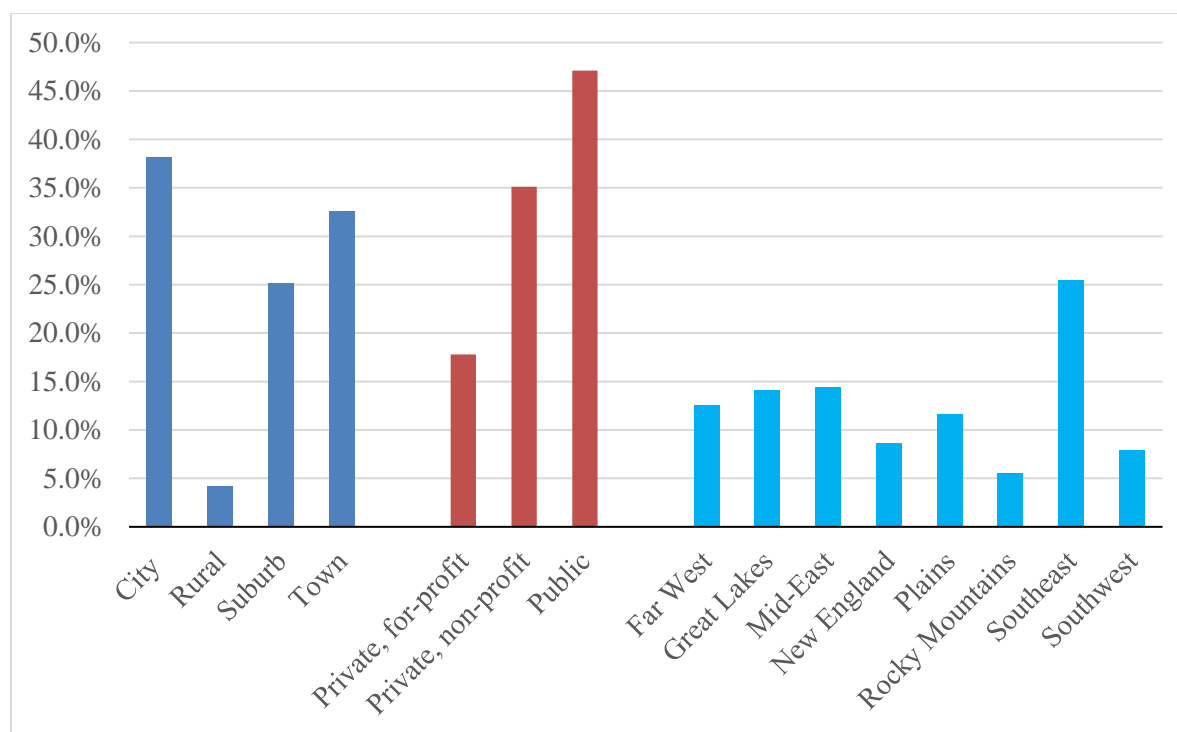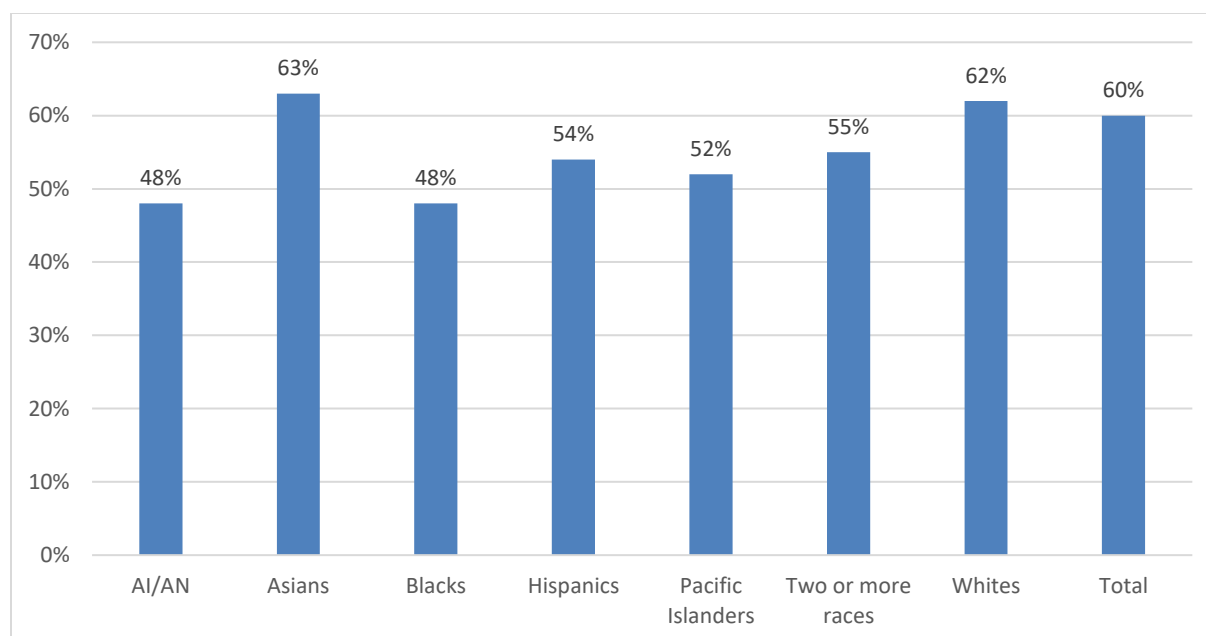
Figure 4

Graduation Rates Percentage by Ethnicity

The diversity score for the student and faculty was calculated for a particular institution using the following formula:

$$\text{\% Of student or faculty } = \frac{\text{Number of students or faculty in each ethnic group}}{\text{Total number of students or faculty}} \text{ x100}$$

$$\sigma = \sqrt{\frac{\varepsilon(x = \bar{x})^2}{N}} \qquad \text{Diversity Score} = (1 - \sigma)\ 100$$

For example, for Institution ID 222178, the student diversity score was 77, and the faculty

diversity score was 68. The researcher first calculated a single combined average of six years

together; the total average number of students for that institution was 3624. The six-year average

for that institution, Whites were 2294 (63.3%), Blacks 317 (8.7%), Hispanics 636 (17.5%),

Asians 43 (1.2%), American Indians/Alaskan Natives (AI/AN) 12 (0.3%), Pacific Islanders 3

(0.1%), and two or more races 170 (4.7%). The standard deviation (σ) was calculated from the

percentage, which was 22.7, and the σ was subtracted from 100, which is 77. Similarly, the

faculty diversity score was calculated. The selectivity rates percentage for that institution was

calculated by the number of students enrolled divided by the number of applicants and multiplied

by 100. For the same institution, the six-year average total number of applicants was 10,798 and

enrolled 6,138; the selectivity rate was 57%. Finally, the researcher calculated a single combined

average of the six-year together for student diversity score, faculty diversity score, total

enrollment numbers, and selectivity rates percentages were calculated for all 291 institutions

separately in an excel spreadsheet and used for SPSS analysis.

Assumption Testing

Assumption of Linearity

Multiple linear regression requires that the assumption of linearity be met. Linearity was

examined using a scatter plot. The assumption of linearity was met. See Figure 2 for the matrix

scatter plot. Normal probability plot (P-P plots) was also used to assess the assumption of

linearity. Figure 5, a normal P-P plot of standardized residual, suggests a straight line for

graduation rates demonstrating linearity.

Figure 5

Normal Probability Plots (P-P plot)

Normal P-P Plot of Regression Standardized Residual

Dependent Variable: GraduationRatesTotal
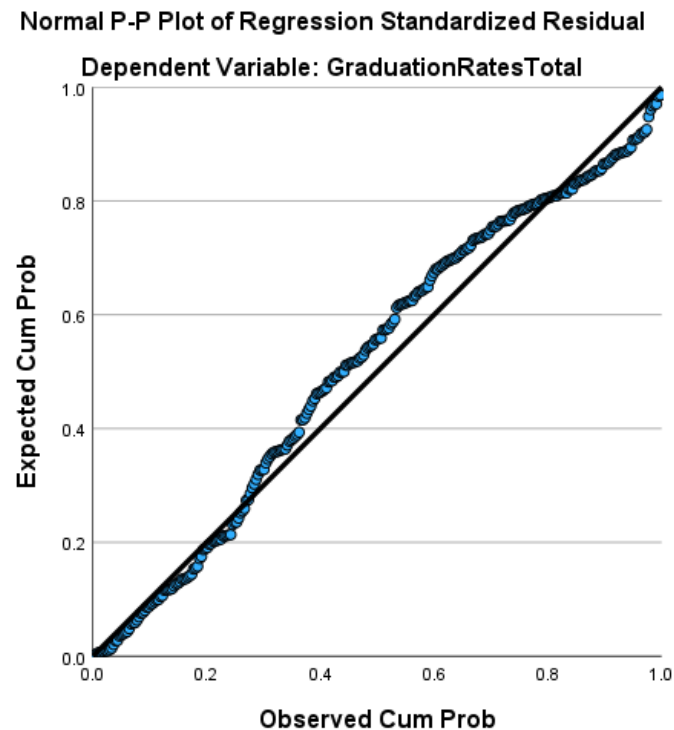
Assumption of Bivariate Normal Distribution

The multiple regression requires that the assumption of bivariate normal distribution be met. The assumption of bivariate normal distribution was examined using a scatter plot. The assumption of bivariate normal distribution was met. The assumption of bivariate normal distribution was met because the scatterplots portrayed a cigar shape. Figure 2 provides the matrix scatter plot. Normality was also tenable using visual histograms. Visual analysis of histograms and distribution overlays indicate the tenability of the assumption of normal distribution. Figure 6 shows the histogram of normal distribution.

Figure 6

Histogram of Normal Distribution

Histogram
Dependent Variable: GraduationRatesTotal
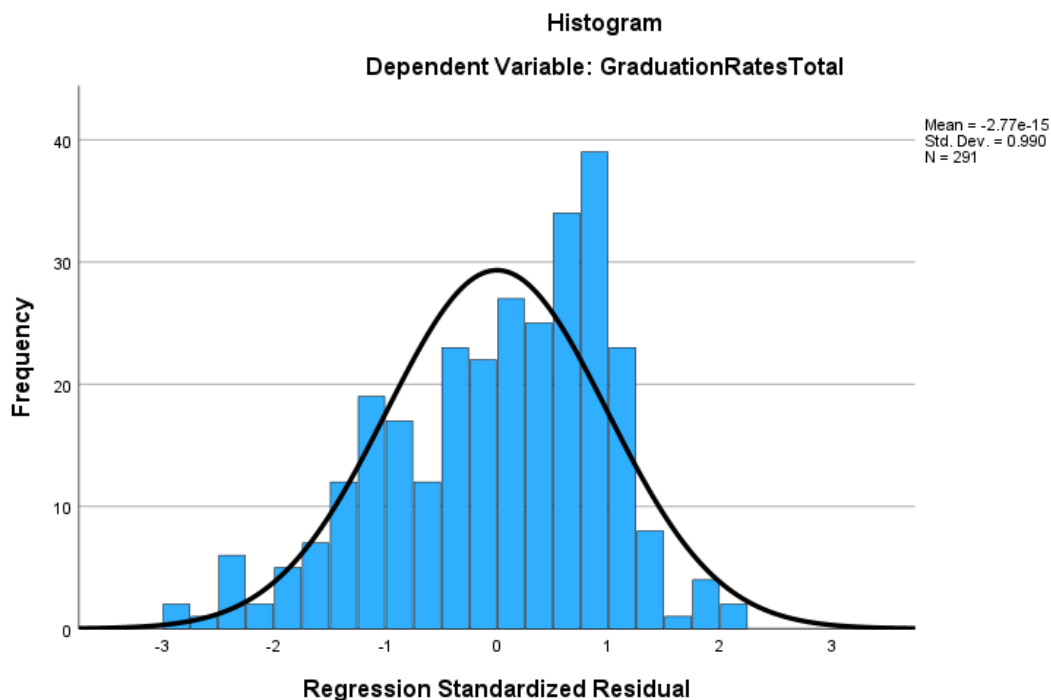
Assumption of Multicollinearity

Multicollinearity addresses the issue of the influence of the predictor variables on one another (Garson, 2014). A variance inflation factor (VIF) test was conducted to ensure the absence of multicollinearity. This test was computed to determine if a predictor variable (x) is highly correlated with another predictor variable (x); they essentially provide the same information about the criterion variable. When using SPSS collinearity statistics, tolerance values less than 0.1 and VIF values greater than 10 indicate a problem (Field, 2013). Acceptable values are between 1 and 5. Table 2 provides the collinearity statistics. The data indicates that no multicollinearity exists in all five predictor variables, as no variables result in tolerance values of less than 0.1 and VIF values greater than 10. The assumption of the absence of multicollinearity was confirmed.

Table 2

Multicollinearity Statistics [a]

| | Collinearity Statistics | |
Model	T	VIF
1 (Constant)		
City	0.632	1.583
Suburb	0.749	1.335
Student Diversity Score	0.658	1.521
Faculty Diversity Score	0.643	1.554
Enrollment Size	0.754	1.327
Selectivity Rates	0.804	1.243

a. Dependent Variable: Graduation Rates Total

Results

A multiple linear regression analysis was conducted to see if there were relationships between student and faculty diversity, institutional factors, and graduation rates. The predictor variables were student diversity score, faculty diversity score, locale, enrollment numbers and selectivity rates. The criterion variable was six-year (150%) graduation rates. The researcher rejected the null hypothesis at a 95% confidence level where $F (6, 284) = 29.985$, $p < 0.001$. There was a significant relationship between predictor variables and criterion variable. Table 3 provides the regression model results.

Table 3

ANOVA [a] Regression Model Results

Model		SS	df	MS	F	P
1	Regression	37983.997	6	6330.666	29.985	<.001[b]
	Residual	59960.359	284	211.128		
	Total	97944.356	290			

a. Dependent Variable: Graduation Rates Total
b. Predictors: (Constant), Selectivity Rates, Suburb, Enrollment Size, Student Diversity Score, Faculty Diversity Score, City

The model's effect size was large, where *R=0.623,* which is more than 0.5.

Furthermore, $R^2 = 0.388$ indicated that the linear combination of predictor variables could

explain approximately 39% of the variance of the criterion variable, and 61% remained

unexplained. Table 4 provides a summary of the model.

Table 4

Model Summary [b]

Model	R	R^2	Adjusted R^2	SE
1	.623[a]	.388	.375	14.5302

a. Predictors: (Constant), Selectivity Rates, Suburb, Enrollment Size, Student Diversity Score, Faculty Diversity Score, City
b. Dependent Variable: Graduation Rates Total

Because the researcher rejected the null, analysis of the coefficients was required. Based

on the coefficients, it was found that the enrollment size, selectivity, and locale (city, suburb)

were the best predictors of graduation rates where *p*-values were city = .007, suburb < .001,

student diversity score < .003, enrollment size < .001, and selectivity rates <.001. They were all

significant and predictors of graduation rates. However, the faculty diversity found to be not

significant and not a predictor of graduation rates where *p*-value observed .568. Table 5 provides

the coefficients.

Table 5

Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	*SE*	*β*	*T*	*P*
1	(Constant)	137.903	19.428		7.098	<.001
	City	5.995	2.206	.159	2.717	.007
	Suburb	9.851	2.270	.233	4.340	<.001
	Student Diversity Score	-.562	.190	-.170	-2.964	.003
	Faculty Diversity Score	-.151	.265	-.033	-.572	.568
	Enrollment Size	.000	.000	.254	4.747	<.001
	Selectivity Rates	-.492	.044	-.581	-11.226	<.001

a. Dependent Variable: Graduation Rates Total

CHAPTER FIVE: CONCLUSIONS

Overview

The purpose of Chapter Five is to discuss the conclusions based on the data for this predictive correlational study and its relationship to previous research findings. This chapter discusses how the results from this research support or contradict theories or other studies. It also discusses the implications of the findings on how the study contributes to existing knowledge of student and faculty diversity and institutional factors that influence postsecondary graduation rates. Limitations to the findings are presented for consideration. Finally, the study concludes by providing recommendations for future studies.

Discussion

The purpose of this quantitative study was to explore the predictability between student diversity, faculty diversity, institutional locale, enrollment size, and admissions selectivity and construct a relationship with graduation rates. The research question was: How accurately can graduation rates be predicted from a linear combination of student diversity, faculty diversity, institutional locale, enrollment size, and admissions selectivity? The null hypothesis stated that there would be no significant predictive relationship between the criterion variable (graduation rates) and the linear combination of predictor variables (student diversity, faculty diversity, institutional locale, institutional enrollment size, and admissions selectivity) for Title IV degree-granting public, private, for-profit, and non-profit four-year postsecondary institutions.

Multiple linear regression analysis was used to test the hypothesis. After analyzing data with multiple regression, a significant relationship was found ($F = 29.985$, $r = .623$, $p < .001$) between student diversity, institutional locale, enrollment size, admissions selectivity, and graduation rates. Therefore, the null hypothesis was rejected at a .05 alpha (α) significance level.

There is a significant relationship ($t = 2.717$, $p = .007$) between the predictor variable, city and the criterion variable, graduation rates. There is a significant relationship ($t = 4.34$, $p < .001$) between the predictor variable, suburb and the criterion variable, graduation rates. There is a significant relationship ($t = -2.964$, $p = .003$) between the predictor variable, student diversity and the criterion variable, graduation rates. There is a significant relationship ($t = 4.747$, $p < .001$) between the predictor variable, enrollment size and the criterion variable, graduation rates. There is a significant relationship ($t = -11.226$, $p < .001$) between the predictor variable, selectivity rates and the criterion variable, graduation rates. However, there is no significant predictive relationship ($t = -.572$, $p = .568$) between the predictor variable, faculty diversity and the criterion variable, graduation rates, where the p-value is greater than .05 alpha (α) level of significance ($p = .568$).

Findings from this study indicated that student diversity predicts graduation completion rates. This study's findings are relevant to the previous research on graduation rates by Boliver (2016). In Boliver's study, there was a large difference in admissions when comparing ethnic minorities; minorities were admitted to college at a lower proportion than Whites. This current study's findings indicate a predictive correlation between racial/ethnic minority student groups and their graduation rates; if the percentage of minority students increases in an institution, the graduation rates will also increase. Thus, the more minority students are enrolled, the higher their graduation rates will be. Therefore, if universities want to increase the graduation rate of underrepresented minority groups, they should focus on recruiting and retaining these students (Murrell, 2019).

This study's findings revealed that faculty diversity had no statistically significant predictive relationship with graduation rates. Perhaps faculty diversity, as measured by this

study, does not factor into whether college students persist toward graduation. The findings of this study contradict the previous findings of Stout et al. (2018). These researchers found that overall, minority students of all ethnicities are positively affected by the increased diversity of their faculty. Stout et al. (2018) indicated that the faculty diversity in the United States was lower than its national population. In another related study, Rucks-Ahidiana and Bork (2020) revealed that there was a significant gap between the faculty's racial and ethnic composition and the United States population distribution. Although this current research found that faculty diversity does not predict graduation rates, other studies explored the numerous benefits of increasing minority faculty representation in higher education (SREB, 2021; Trejo, 2020). Minority faculty serve as role models that may positively impact campus students and climate (SREB, 2021). Increasing the number of minority faculty on higher education institutions' campuses can reduce the challenges of stereotypes about who produces and delivers knowledge in society (Trejo, 2020). Therefore, colleges and universities should continue their recruiting efforts for more diverse faculty to improve the diverse campus environment (Trejo, 2020).

The data from this study indicated that enrollment size positively predicts graduation rates. In a related study of college enrollment, King et al. (2016) observed that college enrollment numbers correlated with students' socioeconomic status and parent education, which may play a substantial role in student retention, degree completion rates, and future endeavors. In another related study, Carlevatti (2020) argued that if minority and underrepresented students lag in admissions into college, they will also lag in the enrollment process and graduation rates compared to Whites. For this current study, the enrollment size had a positive correlation and was found to be the strongest predictor of graduation rates; the more the enrollment numbers, the higher the graduation rates. Therefore, universities should constantly be engaged in recruitment

and retention efforts, especially for underrepresented minority students such as African Americans, Hispanics, and Native Americans.

This study indicated that the selectivity rates of a college have a significant negative relationship with graduate rates. This study unveiled that highly selective institutions showed higher graduation rates. The data from this research indicated that Harvard University's six years average (2015-2020) selectivity rate was 5.06 %, and its graduation rate was 97%. Similar results were found with Princeton (6.1% selectivity rate and 97% graduation rate) and Yale (6.47% selectivity rate and 97% graduation rate). Harvard, Princeton, and Yale are highly selective institutions. Bowman and Bastedo (2018) found that many selective colleges and universities rely on alumni recommendations for admissions, and more than half of admissions decisions are made by their alumni recommendations. Less selective institutions have more minority students, such as Blacks and Latinos, because of their families' lower socioeconomic status, first-generation college student enrollment and first-generation students from immigrant parents (Holland & Ford, 2021). Research suggested that fewer high school students from Blacks and Hispanics enroll at highly selective and elite institutions than Whites and Asians due to their lower GPAs, college admission test scores, and lower scores in extracurricular activities (King et al., 2016). Since some minority students face challenges being admitted to highly selective institutions, it would be beneficial to provide coaching in testing, essay writing, and other application requirements for these students' success (Thornhill, 2019).

In this study, institutional locale (city, suburb) has a statistically significant predictive relationship with graduation rates. The study findings suggest that institutions in larger metropolitan cities have higher enrollment numbers and graduation rates. Similar to the findings of this present study, Koricich et al. (2018) found that students from rural communities face

numerous challenges and experience lower graduation attainment than students from metropolitan areas. Park et al. (2021) highlighted that those students who live in remote areas face more crucial challenges than urban students, which impacts their graduation rates. However, minimal research has been conducted on institutional locale and its relationship with graduation rates; therefore, continued research on this topic should be conducted.

The social identity theory (SIT) served as a conceptual framework for this study because the theory explained and unveiled the conformity and socialization of students and faculty in peer groups (Leaper, 2011). Furthermore, the SIT was applied to this study as the theoretical framework because it emphasizes students' and faculties' personal and social identity (Di Bernardo et al., 2021; Hayward et al., 2018; Leaper, 2011; Reimer et al., 2017). This study's results indicated a statistically significant predictive relationship between graduation rates and student diversity, enrollment numbers, selectivity rates and institutional locale. However, no significant predictive relationship was not found between faculty diversity and graduation rates. From the findings, it can be determined that the social identity theory may align less with the predictor variables of this study rather than other possible predictive variables, such as student attitudes, faculty attitudes, and institutions' attitudes towards their students, faculty, and enrollment process; however, these attitude variables were not addressed in this present study. Additional research on these predictive variables for graduation using SIT as the theoretical framework should investigate attitudes.

Implications

The findings of this study indicated a statistically significant relationship between student diversity ($p = .003$), institutional locale (city, $p = .007$, suburb $p < .001$), enrollment size ($p < .001$) and selectivity rates ($p < .001$), with graduation rates. However, the study did not indicate a

significant relationship between faculty diversity and graduation rates. The findings from this study have powerful implications for faculty diversity in graduation rates. The previous research indicated that overall graduation rates for minority student bodies from all races/ethnicities are positively affected by increased faculty diversity (Stout et al., 2018). Findings from this research indicate no correlation between faculty diversity and graduation rates. Student graduation rates can increase or decrease regardless of whether the faculty is diverse or not. Although this was not investigated in this current study, minority faculty may serve as role models for the institutions, which may have positive implications for improving campus climate and may eliminate or reduce the challenge of stereotypes.

Many studies concentrate on the relationship between student and faculty diversity, minority students' enrollment, retention, and graduation rates (Banks & Dohy, 2019; Dawson & Cuevas, 2020; de Brey et al., 2019; Dewberry & Jackson, 2018; Stout et al., 2018). Multiple studies have scrutinized the relationship between student and faculty diversity, minority students' enrollment, retention, and graduation rates (Banks & Dohy, 2019; Dawson & Cuevas, 2020; de Brey et al., 2019; Dewberry & Jackson, 2018). However, there are few studies that focus on the institutions' student and faculty diversity, institutional locale, enrollment size, and admissions selectivity directly connected to students' success and completion of their degrees, especially for minority students, as this study has done. Therefore, this study adds to the existing empirical research by providing information on factors that can predict college graduation rates.

Limitations

There are a few limitations that need to be considered regarding this study. The first limitation of this study is that during the random selection of institutions, the lowest number or percentage of institutions were selected from the rural areas of the United States. Instead of

random sampling, the researcher can choose more institutions from the fringe, distant, and remote locations, which may impact the outcome in determining the predictive relationships between locale and graduation rates more accurately.

The second limitation of this study is that nine institutions, most of them from the town and rural areas, were removed from the SPSS analysis because those institutions had no students from a particular racial/ethnic group, such as American Indian/Alaskan Natives, Pacific Islanders or Asians. For example, among nine institutions, five of them are religious institutions, and some minorities or other religious groups may never attend those schools. Two institutions were from the state of Maine, and one was from Wyoming, where no students enrolled from a particular minority group because the percentage of the minority population representing those two states is very low. This research could include those nine institutions which may have a different outcome on graduation rates.

The third limitation is that the random sampling technique was used to select approximately 15% of institutions from all 50 states of the United States based on the number of institutions for a particular state regardless of its locale. If the researcher can choose institutions from a specific location, such as from the fringe, distant, and remote, that might impact the outcome of relationships between criterion and predictor variables.

The fourth limitation is that students or faculty whose race/ethnicity was unknown were not included in the data analysis because it is not mandatory for institutions to report these anonymous data. Although unknown data may not represent a sizable number; however, if the race/ethnicity data for the unknown students and faculty could be collected, this information might change the outcome of the research.

Recommendations for Future Research

According to the findings of this study, graduation rates were statistically significant in relation to student diversity, institutional locale, enrollment size and admissions selectivity but not significant for faculty diversity. Although a previous study indicated that the overall graduation rates for minority students were positively affected by increased faculty representation; however, data from this study did not show a correlational relationship between faculty diversity and graduation rates for ethnic/racial minority groups (Stout et al., 2018).

The following recommendations were derived from the study's limitations and the expansion of research on Black, Hispanic, American Indian/Alaskan Native, and Pacific Islander students, especially their graduation rates compared to Asians and White students.

1. This study could be replicated by selecting more institutions from the rural areas and small towns of the United States.

2. This study could be replicated with different samples, such as comparing different types of institutions.

3. This study could be further explored, adding additional research questions and hypotheses to determine and compare graduation rates between White and non-White students.

4. This study could be replicated by changing the dependent variables to student retention rates rather than graduation rates.

5. This study could be replicated by replacing independent variables such as core revenues and/or core expenses, endowment, and tuition/fees that may impact graduation rates.

6. Future research could be designed by adding student and faculty attitudes as predictors for graduation, where social identity theory can be applied as a theoretical framework.

7. Future research may focus on admitting and retaining minority students, which can ultimately improve their graduation completion rates.

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APPENDIX

From: do-not-reply@cayuse.com <do-not-reply@cayuse.com>
Sent: Thursday, December 29, 2022 4:21 PM
To: Lovik, Eric G (Education Specialist) ███████████████ ; Mondal, Hridya C
███████████████

Subject: [External] IRB-FY22-23-665 - Initial: Non-Human Subjects Research

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LIBERTY UNIVERSITY.
INSTITUTIONAL REVIEW BOARD

December 29, 2022

Hridya Mondal
Eric Lovik

Re: IRB Application - IRB-FY22-23-665 THE IMPACT OF STUDENT, FACULTY, AND INSTITUTIONAL DIVERSITY ON GRADUATION RATES IN HIGHER EDUCATION USING IPEDS ARCHIVAL/SECONDARY DATA

Dear Hridya Mondal and Eric Lovik,

The Liberty University Institutional Review Board (IRB) has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds that your study does not meet the definition of human subjects research. This means you may begin your project with the data safeguarding methods mentioned in your IRB application.

Decision: No Human Subjects Research

Explanation: Your study is not considered human subjects research because it will not involve the collection of identifiable, private information from or about living individuals (45 CFR 46.102).

Please note that this decision only applies to your current application. Any modifications to your protocol must be reported to the Liberty University IRB for verification of continued

non-human subjects research status. You may report these changes by completing a modification submission through your Cayuse IRB account.

If you have any questions about this determination or need assistance in determining whether possible modifications to your protocol would change your application's status, please email us at irb@liberty.edu.

Sincerely,

G. Michele Baker, MA, CIP
Administrative Chair of Institutional Research
Research Ethics Office