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Pushing Through: Graduate Degree Aspirations for Community College Transfer Students of Color

A dissertation submitted in partial satisfaction of the

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in Education

by

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ABSTRACT OF THE DISSERTATION

Still I Aspire: Graduate Degree Aspirations for Community College Transfer Students of Color

by

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Doctor of Philosophy in Education

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Professor Mark Kevin Eagan, Chair

Enrollment of vertical transfer students across four-year colleges and universities has been increasing over the past decade (Shapiro et al., 2018). From 2012 to 2017, data from the Beginning Postsecondary Students (BPS) survey showed that White students represented the largest group of transfers to four-year colleges and universities. Racial and ethnic minoritized populations continue to face challenges in successfully transferring to a four-year from a two-year institution due to systemic barriers (Crisp, Potter, Robertson, & Carales, 2020); and students of color who do successfully transfer from a two-year into a four-year face additional barriers that stem from institutional racism and lack of a transfer receptive culture (Jain, Herrera, Bernal, & Solórzano, 2011; Umbach, Tuchmayer, Clayton, & Smith, 2018; Wawrzyski & Sedlacek, 2003). This study aimed to identify factors that shape and sustain the graduate degree aspirations

of community college transfer students of color. Specifically, this study examined graduate degree aspirations across institutional characteristics and measures used to determine a campus climate experience to examine how graduate degree aspirations varied for transfers of color enrolled across colleges and universities within the U.S. Key findings include students' experience with a hostile campus climate contribute odds toward graduate education and whether students finance their education through personal income, loans, or grants—overall these measures appeared to contribute odds toward graduate aspirations than having no aspiration to obtain a graduate degree. Frameworks of Critical Race Theory and a Transfer Receptive Culture (Jain et al., 2011) offer critical discussions for implications, research, policy, and practice.

The dissertation of Julio Fregoso is approved.

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TABLE OF CONTENTS

LIST OF TABLES AND FIGURES

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3/2016 Locks, A., **Fregoso, J**., Person, D, Walker, J. Holistic perspectives on pre-college students' development, parents and peers. General Convention Program topic presented at the meeting of the American College Personnel Association (ACPA) Annual Meeting. Montreal, Canada

Chapter One: Introduction

Enrollment of vertical transfer students across four-year colleges and universities has been increasing over the past decade (Shapiro et al., 2018). Shapiro and colleagues (2018) found that close to 40% of the 3 million beginning students who started in 2011 transferred from one institution to another within six years. Having the opportunity to transfer from a community college to a four-year institution contributes toward equitable outcomes for historically marginalized groups (Chase, Dowd, Pazich, & Bensimon, 2012). To delve into this issue, an analysis from the 2012 to 2017 data of the Beginning Postsecondary Students (BPS) survey showed that White students represented the largest group of transfers to four-year colleges and universities (Table 1). Latinx transfer student enrollment represented about one-fifth (20.3%) of all transfers, and 13.1% of transfers between 2012 to 2017 were Black or African American (Table 1). Other minoritized racial and ethnic groups represented an even small share of students who transferred during the five-year period (Table 1).

Table 1.1
Frequency Distribution of Transfers, Non-Transfers, and Total Enrollment Patterns of Four-Year Higher Education Institutions by Race and Ethnicity

	White	Black or African American	Latina/o/x	Asian	Native American	Native Hawaiian/other Pacific Islander	Multiracial
2-year to 4-year	56.2	13.1	20.3	5.5	1.0!	0.3 !!	3.7
Never transferred	58.3	12.7	18.8	5.3	1.0	0.4	3.5
Total	56.8	14.1	18.9	5.2	1.0	0.4	3.5

! Interpret data with caution. The estimate is unstable because the standard error represents more than 30 percent of the estimate.
!! Interpret data with caution. The estimate is unstable because the standard error represents more than 50 percent of the estimate.

Source: U.S. Department of Education, National Center for Education Statistics, 2012/17 Beginning Postsecondary Students Longitudinal Study (BPS:12/17).

Table 1 shows similar enrollment shares by race among students who transferred to a four-year institution compared to those who started at a four-year institution and never transferred, which echoes prior studies on transfer student enrollment patterns (Crisp & Nuñez, 2014; Crisp, Potter, & Taggart, 2020; Shapiro et al., 2018). Perhaps what is most troubling is that it is a well-known fact that community colleges are much more racially diverse than four-year institutions. Given that the racial distribution of transfer students looks similar to that of students who initially started at a four-year institution, Table 1 suggests that underrepresented racial minorities experience an unfulfilled promise. Many more begin their journeys at a community college, but far fewer than we would expect transfer out to a four-year (Glynn, 2019).

Statement of the Problem

Due to systemic barriers, racial and ethnic minoritized populations face challenges in successfully transferring to a four-year from a two-year institution (Crisp, Potter, Robertson, & Carales, 2020). Students of color who do successfully transfer from a two-year to a four-year face additional obstacles that stem from institutional racism and a lack of a transfer receptive culture (Jain, Herrera, Bernal, & Solórzano, 2011; Umbach, Tuchmayer, Clayton, & Smith, 2018; Wawrzyski & Sedlacek, 2003).

Although transfer students encounter many of the same challenges that non-transfers face in navigating their college environments (Glynn, 2019), their demographic differences and outsider status at their transfer institution result in distinct experiences with perceptions of campus climate (Wawrzynski & Sedlacek, 2003; Wilson, 2014). The negative experiences of transfers of color with the campus racial climate intertwine with the concept of *transfer stigmatization.* Transfer students of color experience double jeopardy as they navigate the new campus, mainly when the campus is more racially hostile and lacks a transfer receptive culture

(Jain et al., 2011). Like any student of color, transfer students of color need to navigate the campus racial climate yet must also learn to adjust and overcome issues related to transfer stigma which is felt by all transfer students regardless of race. Transfers of color are not the only ones to experience stigmatization; their racialized experience often intertwines with being a transfer (Umbach et al., 2018; Wawrzynski & Sedlacek, 2003; Wilson, 2014). These student perceptions of campus climate reveal that negative experiences hinder social and academic adjustment, which leads to attrition and other outcomes that impact progress and success for transfers of color (Fischer, 2007; Solórzano, Ceja, & Yosso, 2000; Wilson, 2014).

In today's sociopolitical climate, many transfer student outcomes (i.e., degree completion, major retention, financial support, adjustment) are worth further investigation to remedy structural and institutional transfer barriers. In addition to these critical measures, another contentious issue relates to how institutions shape and prepare transfers for graduate or professional training. The transfer journey may be a daunting experience for many. Their experiences of transfer shock coupled with experiences with racism, or a hostile campus climate may also impact their considerations for pursuing graduate education in similar ways that the transfer process has impacted other outcomes like degree completion, GPA, and persistence in following years as a transfer. Graduate education aspirations are an essential outcome measure to study among transfer students. Their hopes and aspirations for considering their future needs to assess and determine strategies for support for future transfers before they reach degree completion.

Intellectual leadership is typically at the forefront of most higher education institutions across the United States. Transfers should be a student population for institutions to prioritize developing them as intellectuals and scholars. Lastly, this investigation and others that focus on

transfer students' aspirations deserve attention, given today's labor market pressures situating greater preference for people with advanced degrees and training (Carnevale & Strohl, 2013; Torpey, 2018).

A Gap in the Literature

A significant amount of literature has developed over recent years that observe community college students within their community college environment (Acevedo-Gil & Zerquera, 2016; Boatman & Long, 2018; Burns, 2017; Chang, 2005; Cuellar & Johnson-Ahorlu, 2016; Dache-Gerbino & White, 2016; Fong et al., 2017; Lancaster & Lundberg, 2019). Research has also critically examined transferring to a four-year college or university. The gap in the literature is found when exploring the next phase within a transfer student's journey—more importantly, working around postbaccalaureate goals among transfer students of color.

Overall, having a postsecondary degree may yield greater earnings over one's lifetime (Carnevole, 2013; 2015; Backes, Holzer, & Dunlop-Velez, 2015; Valletta, 2015). Graduate degree holders earn at least double that of high-school diploma earners and close to 40% more than bachelor's degree holders over 40 years (Carnevale, 2015). Labor market differentials are present when disaggregating earnings by gender, race, ethnicity, and field of discipline—examining earnings by gender, women, on average, earn about 25% less than men on all levels of educational attainment. Women who hold bachelor's degrees earn less than men who've obtained some level of college work without having a baccalaureate degree confirmed (Carnevale, 2015). It was found that women would have to earn a Ph.D. to make as much as men who hold bachelor's degrees in specific fields (Carnevale, 2015). When it comes to labor market earnings by race and ethnicity, every person of color, regardless of degree type or lack thereof, earned less than their White counterparts within each category of education (or lack thereof)

(Carnevale, 2015). The most significant gaps in earnings were evident among Black and Latinos compared to White earners over a lifetime (Carnevale, 2015). Wages vary by subgroup categories; regardless, people who have earned bachelor's degrees are entering a job market with minimal opportunity for meaningful employment, as job markets today and projections up to 2026 note that entry-level positions requiring a master's degree will be far more common than that of a bachelor's (Torpey, 2018).

Since the labor market today increasingly prefers jobseekers who have earned advanced degrees (Carnevale & Strohl, 2013; Torpey, 2018), it is vital to study what institutions are doing to meet such demand in ways that nurture students' aspirations for graduate and professional schools. Specifically, ways in which institutions are supporting transfers of color at the four-year, given their limited enrollment and representation across the U.S. (BPS:12/17; Carnevale & Strohl, 2013; Glynn, 2019). Thus, comparing transfer students' aspirations to earn graduate/professional degrees across highly selective and more open-access four-year colleges and universities is essential to understand the campus experiences that increase students' likelihood of aspiring to earn graduate degrees.

Purpose

This study aimed to identify factors that shape and sustain the graduate degree aspirations of community college transfer students of color. Specifically, this study examined graduate degree aspirations across institutional characteristics and measures used to determine a campus climate experience to explore how graduate degree aspirations varied for transfers of color enrolled across colleges and universities within the U.S. The following research questions guided this study:

1. To what extent do campus climate perceptions predict intentions to pursue a graduate degree for vertical transfer students of color?
    a. To what extent does the association between perceptions of campus climate and intentions to pursue a graduate degree vary by institutional characteristics?
2. Controlling for individual (e.g., demographics, experiences, perceptions of campus climate) and institutional measures, to what extent do institutional characteristics across higher education institutions predict graduate degree aspirations of transfer students of color?

Scope of the Study

This study examined how institutional characteristics account for differences in whether vertical transfer students express intentions to pursue a graduate degree. To adequately capture such student experiences, this study analyzed data collected by the Higher Education Research Institute (HERI). The data came from the College Senior Survey (CSS) administered by the Cooperative Institutional Research Program (CIRP) at HERI. Five waves of data from the CSS spanning 2015 through 2019 provide sufficient numbers of vertical transfer students of color to address this study's research questions.

Jain and colleagues' (2011) framework for a transfer receptive culture and components from Quantcrit (Gillborn, Warmington, & Denmack, 2018) were used as a conceptual lens. A transfer receptive culture advocates for institutional support by a four-year college or university for community college transfer students (Jain et al., 2011). CRT is a framework that names the experiences of actively minoritized peoples within the legal system and the U.S overall (Ladson-Billings & Tate, 1995); Quantcrit establishes a way to bring CRT toward the use of quantitative data. Quantcrit challenges past and current ways that quantitative research has served whiteness

(Gillborn et al.,2018). Its design interrogates the latency of numbers to offer critical and radical interpretations that factor in race and other intersecting identities. These interrogations of quantitative data are premised on recognizing that data is not neutral and is socially constructed in the same way as different research approaches (ethnographies, interviews, etc.) (Gillborn et al., 2018).

Contribution to Research and Significance

This study contributes to higher education research, practice, and policies that impact the trajectory of transfer students of color. First, the study adds to the literature on degree aspirations within the context of students of color who successfully transferred from a two-year institution to a four-year institution. Such focus on the vertical transfer of students of color sheds light on different factors (campus climate, institutional selectivity, academic and career service resources, etc.) that support or fall short of helping students of color who have transferred from the community college. This demonstrates the amount of navigational support needed, which provides institutions with recommendations for high-impact practices that cater to transfer student persistence and support around graduate college choice. This also opens the door to scholarly conversations that push critical quantitative research for diverse student populations in ways that support anti-deficit narratives and recommendations on supporting vertical-transfer students of color.

This study utilized recent waves of survey data (2015-2019) as compared to the study by English and Umbach (2016), which used a cohort of student response data from 2000-2001 and focused on degree aspirations of college students generally rather than those who had transferred from a two-year institution. Though their sample was not entirely community college transfers (English & Umbach, 2016), they controlled for community college transfer status as a covariate,

contributing to their discussion and implications for graduate aspirations. Other studies have utilized data as recent as 2013 or earlier (Mattern & Randuzel, 2015; Hansen et al., 2016; Rocconi et al., 2015) for graduate school choice processes but do little to offer generalizability or the opportunity to intertwine the complex transfer student identity along with being a student of color. Thus, utilizing recent data from college seniors through trended datasets from 2015 to 2019 facilitates a discussion of implications for policy and practice that are timely to the current sociopolitical climate impacting today's college students. More recent data also provide a timelier portrait of current students of color and how their enrollment patterns per institutional selectivity impact their graduate school degree aspirations.

Background

Recent scholars who have contributed to the literature on graduate aspirations note that pre-college characteristics, psychosocial variables (e.g., sense of belonging, campus climate, faculty relationships, etc.), and multiple institutional measures (e.g., size, level, racial/ethnic enrollment) predict whether students aspire to obtain a graduate degree (Mattern & Randuzel, 2015). Concerning institutional characteristics, baccalaureate institutions' control, type, selectivity, and location influenced graduate school enrollment among bachelor's degree earners (English & Umbach, 2016; Heller, 2001; Zhang, 2005). One study found that transfer students who have earned baccalaureate degrees were as likely as non-transfers to enroll in graduate and professional programs when controlling for institutional characteristics (Wang, Lee, & Wickersham, 2019). A second study focused on counterstories from those who began at the community college and have now earned a Doctor of Philosophy (Ph.D.) degree. A common theme found in their counterstories was how the community college experience was a *saving grace* and opportunity to focus on students' academic and social development through the

support and validation from staff and faculty (Zamani-Gallaher, Turner, Brown-Tess, & Thrill, 2017). Additionally, scholars have noted that drawing from *deep approaches to learning* (DAL) (Rocconi et al., 2015) can serve as effective educational practice, and students who interact more frequently with faculty have a greater likelihood of planning to pursue a graduate/professional degree (Hanson, Paulson, & Pascarella, 2016).

Importance of the Community College to Graduate or Professional School Pipeline

Very few studies reveal what shapes college seniors' degree aspirations (Carter, 1998; 2001; English & Umbach, 2016; Mattern & Randuzel, 2015; Rocconi, Ribera, & Laird, 2015; Wang et al., 2019). Although studies like the one by Wang et al. (2019) suggest no difference in graduate school enrollment based on whether a bachelor's degree holder ever attended a community college, previous research has largely ignored the potential effects of the campus climate related to race and may play a role in transfers' development of degree aspirations. Likewise, prior studies have analyzed transfer students rather than exploring how transfer students of color may develop aspirations for advanced study differently. Rocconi et al.'s (2015) study on degree aspirations examines a sample of transfer students. Still, it later focuses on the overall discussion and salient knowledge building around the aspirations of students who have been at the campus since their freshman year.

Thus, comparing transfer students' aspirations to earn graduate/professional degrees across highly selective and more open-access four-year colleges and universities is essential to understand the campus experiences that increase students' likelihood of aspiring to earn graduate degrees.

Positionality

As a former community college transfer student, current community college counselor, and researcher interested in expanding conversations about community college and transfer student research, this study has an essential and personal connection as a researcher. I transferred from a local community college to the University of California, San Diego, at the height of newly espoused racial tensions brought forth by racist fraternity and sorority parties. I worked in dining halls on campus, where white senior administrators repeatedly minimized my identity to stereotypical tropes of the dishwasher, busser, and cook. My experiences at UCSD were at times exhausting because of multiple jobs, financial and family stress, and trying to navigate an entire college setting that was much bigger than my previous institution. I made connections and friends through my jobs in the dining halls, career services, and a TRiO funded program that assisted transfer students' transition into the four-year at UCSD.

These experiences kept me grounded and connected me to other minoritized transfers and non-transfers of color. I collaborated with student leaders on campus; these efforts with select sociology courses I completed first introduced my understanding of critical frameworks that can be applied through organizing, offering a lens of student support and research.

I transferred to UCSD in the fall of 2010 and was the second cohort of transfers to live in the transfer housing newly established for all transfers on campus. Transferring in was my first time experiencing major debt as an adult, as I accepted all loans available through financial aid before transferring in. I did not know any better and came from a family who was routinely homeless due to our financial circumstances; my family was financially illiterate during these times. I saw a lot of money available as a transfer, and I took it.

Both on and off-campus experiences have informed how I envision a world for myself and those around me. These background experiences positioned me to dive into understanding critical race theory when first presented to me at UCSD. Critical Race Theory in Education was my introduction to the framework; my graduate program at Long Beach State briefly touched on the roots of critical race theory and its legal underpinnings. My Ph.D. program here at UCLA is the first time I have had an opportunity to take a class on critical race theory and its applicability in a higher education setting.

Since my experiences stemming from being a low-income community college transfer student, my professional experiences within a community college setting, and my training received at UCLA and CSULB position me to place great interest in community college and transfer student research. More specifically, their postbaccalaureate journeys.

Subsequent Chapters

The following four chapters will outline the remaining portions of the study. Chapter 2 begins with a broad overview of the key bodies of literature informing this study and a description and application of the relevant theoretical frames guiding my work. In Chapter 3, I provide details related to the research design, including a description of the sample, variable selection, and analytic approach. I present findings from my descriptive and multilevel analyses in chapter 4. Key findings include students' experience with a hostile campus climate contributing odds toward graduate education and whether students finance their education through personal income, loans, or grants—overall, these measures appeared to contribute odds toward graduate aspirations than having no aspiration to obtain a graduate degree. Finally, I discuss my findings in greater detail in Chapter 5, linking my results to prior research and offer implications for research, policy, and practice through the lens of understanding a transfer

receptive culture (Jain et al., 2011) and engaging in a CRT analysis of findings (Gillborn et al., 2018).

Chapter Two: Review of the Literature

Introduction

Transfer students of color have difficulties adjusting to the post-transfer process (Jain, Bernal Melendez, & Herrera, 2020). Often, these struggles stem from the lack of institutional support offered to vertical transfer students when beginning their new journeys at their respective four-year colleges and universities (Jain et al., 2011; Jain et al., 2020; Gwynn, 2019). The journey of a transfer student, and transfer students of color are complex. To understand such transfer student experiences for students of color, one must revisit the pre-collegiate experiences and historical trauma rooted in race and racism. There is an understanding of how race for minoritized populations alone impacts their educational trajectories (Gwynn, 2019; Jain et al., 2011; Jain et al., 2020). This is no less true of the intricacies that involve the experiences of transfer students of color. This chapter will focus on how minoritized populations navigate the U.S. in relation to their educational experiences. Specifically, a review of community college history, educational opportunities contingent on geographical locations, degree aspirations, and ways such experiences manifest in the transfer experience for students of color will be reviewed.

The community college system in the United States provides greater access, upward mobility, and affordability for low-income students of color and/or first-generation college students (American Association of Community Colleges, 2012; Cohen & Brawer, 2003; Wang, Wickersham, & Sun, 2017). Almost 7 million students across the nation enroll in community colleges (NCES, 2017). Out of such a vast population of community college enrollees, just 25% of community college students are recent high-school graduates who enrolled right after earning their high school diploma (NCES, 2017). The balance of students enrolled at community colleges represents backgrounds concordant with the multiple purposes these institutions serve:

to provide vocational training for students wishing to immediately enter the workforce, provide opportunities for students to earn associate degrees, and routes for transfer options into a four-year college or university. For students of color, community colleges provide a critical pathway for those wishing to earn a baccalaureate degree and beyond (Cohen & Brawer, 2003).

Roughly 80% of students who enroll at a community college indicate plans to earn an associate's degree, but nearly one-third of those aspiring to an associate's degree ultimately earn one (Jenkins & Fink, 2016). Given this statistic, it is not surprising that students who begin at the community college are significantly less likely to earn a bachelor's degree, and myriad factors contribute to the challenges encountered by students on this pathway (Bowen, Chingos, & McPherson, 2009; Long & Kurlaender, 2009). These community college policies and procedures meant to support students often prolong their stay at their first institution, contributing to the high attrition rates of students of color and vertical transfer student presence at the four-year (Monaghan & Attewell, 2015). While community colleges have been around since the early 1900s, the transfer function in which policies and procedures are created to support students who aspire for a bachelor's degree and beyond is relatively new (Dougherty & Townsend, 2006).

The Community College System

To fully grasp the unique experiences of transfer students from the community college system, one must nuance the community college system in its inception along with the initial goals and functions of them.

Development of Community Colleges

Community colleges were established at the beginning of the 20th century and were initially meant to provide a *sub-baccalaureate* educational experience for their students (Bahr & Gross, 2016). Originally, the community college's inception was a response to an influx of

immigration, women's educational aspirations, and the rampant growth of secondary education (Bahr & Gross, 2016). Such conditions created a shortage of K-12 teachers and a growing range of secondary school graduates with aspirations to continue to postsecondary education, which stressed the overall capacity of current colleges and universities across the United States (Bahr & Gross, 2016). This provided the space for university leaders to come together and develop a plan in support of a *junior college* system.

Throughout the 1900s, the community college system steadily increased enrollment (Bahr & Gross, 2016). The 1960s was one of two pivotal shifts in that the development of the California Master Plan for Higher Education created a statewide stratification and coordinating system of educational pathways and opportunities (Bahr & Gross, 2016). The second pivotal shift came between the 1980s and 2000s, as an expansion in enrollment and a strengthening of a transfer mission were articulated on behalf of both sending and receiving institutions (Bahr & Gross, 2016). Numbers for community college enrollment increased by 43%, yet its facilities to house such students remained the same (Bahr & Gross, 2016). An emphasis on transfer began to rise, while its constituents aspiring to transfer were mainly comprised of students who needed to complete precollegiate (often referred to as *remedial*) coursework (Bahr & Gross, 2016). The rise in community college enrollment (along with an initial decline in state and federal appropriations) also amplified concerns over issues on access and equity for racial and ethnic minorities who needed the support the most (Bahr & Gross, 2016).

Racism Within

Long's (2016) work on racism in the community college provides context on the prevalence of racism and its negative impact on student success outcomes. Long (2016) posits that educational racism manifests overtly or covertly within a system of educators (and education

as a whole) that may benefit or inhibit/punish a student contingent upon their race, culture, ethnicity, socioeconomic status, and/or socioeconomic status or ideologies. This inherent systemic bias presents itself as constructing expectations, rules, and cultural norms based on an educational model that benefits America's middle- and upper- (white) class state of mind (Long, 2016). The expectations, cultural norms, and rules also coincide with the ideology behind the traditional college student, where such students hold the economic, cultural, and social capital needed to be successful within a higher education setting (Deil-Amen, 2015). Such students are considered prepared for college-level rigor and have the privilege to be enrolled full-time (Deil-Amen, 2015). With these systemic biases, faculty, staff, and other personnel—serve their students (Deil-Amen, 2015; Long, 2016).

These biases have severe implications in the classroom, which serves as a space that perpetuates educational racism (Long, 2016). Educational racism by faculty comes into play as middle-to-upper class White students exhibit the behaviors that appease the prejudices and biases faculty members have on how students should behave (Long, 2016). White students from middle-to-upper class backgrounds are more inclined to ask questions and participate during class discussions, meeting the behavioral expectations of instructors. By contrast, students of color may not engage with the content in ways the faculty deem appropriate (Long, 2016). Students of color may convey their interest and engagement in ways that faculty members may have difficulty acknowledging, therefore treating them as students not willing to participate or disinterested in the subject matter (Long, 2016). Thus, faculty may misconstrue students' disconnection from the curriculum due to the lack of cultural relevance as apathy or disinterest (Long, 2016). This is a systemic barrier in which faculty subconsciously assume that students

should portray certain behavioral traits (that of a traditional college student) that perhaps students of color and from a low socioeconomic background do not display (Long, 2016).

This form of racism experienced by students of color is an example of Delgado and Stefancic's (2001) notion of differential racialization. At times, administrators, staff, and faculty uphold racial biases rooted in the racial differences that are unconsciously deemed *fundamental* and *self-evident* (Delgado & Stefancic, 2001; Lawrence, 1987; Lopez, 2006). This demonstrates how racial biases of people hired by institutions are rooted and laced with social constructions of whiteness and the academy, which mirrors and upholds white supremacy within the United States.

This body of literature provides essential context for this study's proposed analyses, given that the student sample under examination consists entirely of students from minoritized backgrounds. These previous studies provide evidence to suggest that students' lack of engagement via more traditional processes (e.g., asking questions in class) may be less an indication of their disengagement from their academics as much as it represents a manifestation of how students of color may perceive the curriculum as not connecting to their realities or lived experiences. Racism exists within the academy and will shape how students perceive themselves in their graduate degree pursuits.

Theoretical Framework

Understanding community college research is vital to consider the theoretical and conceptual frameworks used for this study. The research highlighted below will outline frameworks surrounding community college transfer students and additional findings on transfer student experiences that go beyond frameworks used for this study for further insight on experiences of degree aspirations and support.

Jain and their colleagues' (2011) conceptual framework of transfer receptive culture, along with components from Critical Race Theory (CRT) and QuantCrit (Gillborn, Warmington, & Denmack, 2018), are used as a conceptual lens for this study.

Critical Race Theory

Critical Race Theory (CRT) is a race-based epistemology conceptualized from an interdisciplinary and scholarly perspective (Ladson-Billings & Tate, 1995). CRT is a framework that names the experiences of actively minoritized peoples within the legal system and general experiences within the US nation-state. CRT's genealogy is rooted in social justice and borrows from existing heuristics and frameworks (i.e., whiteness as property, racial realism; intersectionality; interest convergence, etc.) to problematize the issues of various social systems within the U.S. (Bell, 1991; Crenshaw, 1991; Harris, 992; Taylor, 1999). CRT's existing frameworks and heuristics are reconceptualized as tenets that provide scholars, practitioners, and policy analysts to consider how race and racism shape inequity in a white, colonial nation-state.

This study uses CRT tenets of legal studies and Critical Race Theory in Education to problematize issues of marginalization for students of color within community college-transfer-related contexts. The CRT tenet of racial realism or permanence of racism (Bell, 1995) is specifically highlighted and used when examining how CRT can be applied with quantitative data.

Racial Realism or the Permanence of Racism. Bell's (1991) paradigm on the permanence of racism states that racism is structural and immutable; he contests that racism will never cease in the minds of people due to its direct link to the foundation of American values. Bell (1991) states that for Black people to achieve racial justice, one must operate through a lens that Black citizens will remain a permanent, subordinate class. Thus, the only form of true

equality stems from developing a mechanism that may provide an opportunity to make life bearable for Black folks (Bell, 1991). A *mechanism* or way for transfers of color to cope through their transfer process may be the end goals they envision beyond their enrollment across colleges and universities. End goals can be degree completion, course completion, or involvement on campus. For this study, the mechanism to understand racial realism as it applies to transfers of color will be their intent to pursue graduate education.

Transfer Receptive Culture

A transfer receptive culture (TRC) is defined as a commitment by four-year institutions to support community college students in the transfer process, specifically—to assist in the navigation of the community college, assist in preparatory and/or major coursework selections, application, and enrollment, and support throughout the stay at the transfer institution (Jain et al., 2020; 2011). It is crucial to view TRC as a partnership between community colleges and baccalaureate-granting institutions. A TRC incorporates Critical Race Theory in Education (CRTE) (Jain et al., 2020; 2011). CRTE allows TRC to center the experiences of students who have been historically marginalized through education, consideration of state and federal policies, and practice (Jain et al., 2020; 2011).

TRC has five elements created initially for practitioners to help guide students throughout the transfer process; the five elements consist of two pretransfer and three posttransfer considerations when considering implications for better practices that support transfer students (Jain et al., 2020). The two pretransfer elements consist of: (1) establishing disenfranchised and minoritized student populations as a high institutional priority that ensures accessibility, retention, and graduation, and (2) providing outreach and resources necessary to support students during their community college journeys as they complete any major, prerequisite, general

education, and/or additional articulated courses that will get them closer to the transfer goal (Jain et al., 2020; 2011). The three posttransfer elements are: (3) provide academic and financial support for *non-traditional* (Deil-Amen, 2015)/Reentry transfer students; (4) recognize the intersecting lived, marginalized experiences in addition to the intersectionality of family and community; and (5) to establish a framework that assesses, evaluates, and enhances transfer receptive initiatives and programs that may support future scholarship on transfer students. Such efforts will be contextualized within variable selection for this study. As noted, a transfer receptive culture considers tenets of critical race theory in education. In addition to problematizing the legal tenets of critical race theory and Quantcrit, one must acknowledge the applications critical race theory has made within the education spheres to better understand Jain and colleagues (2011) work on a critical framework for transfer student support and research.

Critical Race Theory in Education. The development of critical race theory in education (CRT-E) comes from the work of Ladson-Billings and Tate (1995) and is further strengthened by the work of Solórzano (1997; 1998). CRT-E is seen as the result of scholars, practitioners, and activists developing an explanatory and analytical framework that accounts for the role of race and racism within education (Solórzano, 1997; 1998). This work is focused on identifying and challenging racism in historical and contemporary forms while also revisiting other forms of subordination (Solórzano, 1997; 1998). In using CRT-E for educators, practitioners, and researchers, both the work of Solórzano (1997) and Ladson-Billings and Tate (1995) contest that one must guide their advocacy for critical race research and practice around tenets or propositions that can direct their inquiries. The five tenets for CRT in education are the centrality and intersectionality of race and racism; the challenge to dominant ideology; the

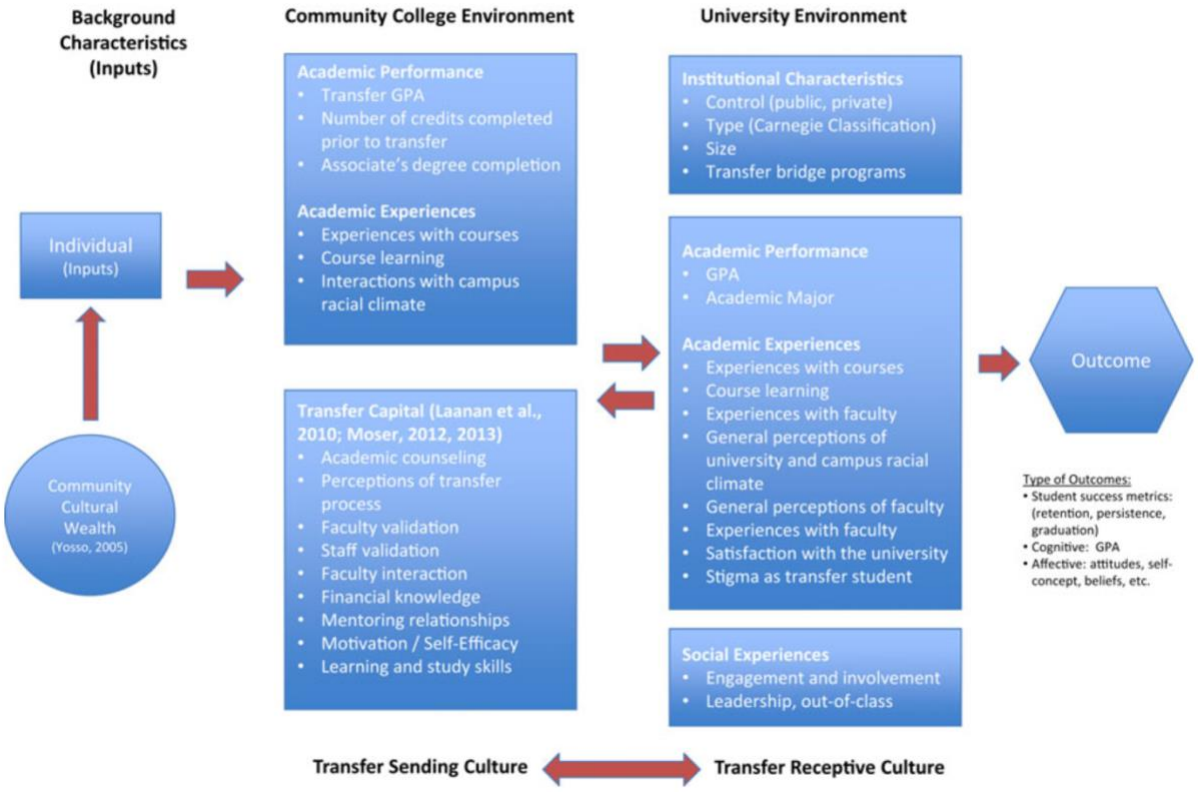
commitment to social justice; the centrality of experiential knowledge; and the interdisciplinary perspective (Solórzano, 1997).

Studies utilizing TRC. In recent years, several scholars have either framed their studies within a transfer receptive culture (Castro & Cortez, 2017; Jain, Bernal, Lucero, Herrera, & Solórzano, 2016; 2017; Real Viramontes, 2018; 2020), expanded such work through research briefs, literature syntheses, and texts for scholar and practitioner support (Laanan & Jain, 2016; Jain et al., 2020; Taylor & Jain, 2017; Real Viramontes, 2021), or used TRC to support and expand on scholars' approach toward highlighting implications for practice, policy, and research within their respective studies (Hodara et al., 2017; Irvins, Copenhaver, & Koclanes, 2017; Nuñez & Yoshimi, 2017; Senie, 2016; Tobolowsky & Bers, 2019; Whang et al., 2017). All studies that framed their investigations around TRC found that institutions did very little or had no real presence of a TRC across college campuses being investigated. Transfers of color had minimal guidance and support from institutions, which negatively impacted their transfer journeys (Castro & Cortez, 2017; Jain et al., 2016; 2017; Real Viramontes, 2018; 2020). Scholars that used TRC as a tool to support their discussions held similar findings on behalf of transfer student experiences (Hodora et al., 2017; Irvins et al., 2017; Nuñez & Yoshimi, 2017; Senie, 2016; Tobolowsky & Bers, 2019; Whang et al., 2017). Great strides have been made in understanding a TRC and what it means for transfers of color, yet further work must continue to explore the changing dynamic and diversity that transfers of color bring to four-year colleges and universities.

The following review of the literature will be organized around Jain and Colleagues' (2011) framework for a Transfer Receptive Culture (TRC) Laanan and Jain (2016) outline ways to quantitatively assess not only experiences that extend an understanding of TRC but also ways

one can evaluate community college experiences through transfer sending culture frameworks as well (Laanan and Jain, 2016) (See Figure 2).

Figure 2. Conceptual Model of Studying Diverse Transfer Students and Organizational Contexts



Though this figure was created to support a more extensive inquiry into transfer student experiences (Laanan and Jain, 2016), the portion of the figure that provides specific characteristics that impact transfer students at the four-year college or university (i.e., "university enrollment") is explored (Figure 2.1) within this literature review and frame this study.

Figure 2.1 Transfer Receptive Culture

Four-Year College and University Enrollment

The plethora of community college work and knowledge around transfer student capital demonstrates the urgency of support needed for students within the community college system and their support to transfer over to the four-year college or university. In addition to understanding and finding ways to support the complexity of the transfer process for community college students, one must also nuance the experiences of students who have transferred over to a four-year college or university. Within the last couple of decades, more research has focused on the experiences of students who have transferred from a community college (Bensimon & Dowd, 2009; Berger & Malaney, 2011; Jackson & Laanan, 2015, Nuñez & Yoshimi, 2017, Rhine,

Milligan, & Nelson, 2000). Until recently, few scholars have examined the transfer student experience from a critical perspective that problematizes the issues of race, ethnicity, gender, and intersections of these identities (and other marginalized identities) on an individual and institutional level (Laanan & Jain, 2016; Jain et al., 2020). This study advances such critical work with a focus on a transfer student population utilizing CIRP data, which is survey data that has expanded knowledge on the campus climate issues for all students, faculty, and staff enrolled. My focus is useful given that the population under inquiry is wholly focused on transfer students of color. The following sections from the literature share great importance with the participants from this study, as the researcher will continue such nuance through a critical race lens.

Institutional Characteristics of Four-Year Colleges and Universities

In social sciences, big data (Rios-Aguilar, 2015) that scholars use is often hierarchical or has a nested structure (Raudenbush & Bryk, 2002). For example, data may consist of students within a sample of different colleges and universities, or individuals nested within other geographic locations. It is important to acknowledge such intricacy within the data (Burstein, 1980; Cronbach et al., 1976; Raudenbush & Bryk, 2002). Choosing not to delve into or acknowledge the hierarchical data structure may leave room to not examine differences across groups, like examining differences of individuals between and across institutions (Raudenbush & Bryk, 2002). Multilevel models are often employed to capture such nuance found within the data. Though no study has captured utilizing multilevel models to examine institutional characteristics that impact graduate degree aspirations of transfer students, studies have used multilevel techniques to investigate differences across groups in observing other transfer student outcomes (Umbach, 2016).

Recent studies look at institutional characteristics as a pivotal role in college student success and access. These studies have noted differences in institutional size and control of the campus weigh heavily on students' completion rates (Melguizo, 2006; Gaddis, 2015; Umbach, Tuchmayer, Clayton, & Smith, 2018). Consistent findings discussed how the university's size had a negative impact on student outcomes. Umbach and his colleagues (2018) note how more prominent universities contribute disparate results toward transfer students. Students who transferred to large universities earned lower grades and persisted less than transfers who enrolled in smaller universities relative to their community college size (Umbach et al., 2018).

Furthermore, attending a large two-year college while having a four-year institution within the same county was associated with persistence into the second year as a transfer student. Other studies cited above discuss the positive effect of highly selective institutions on attainment for minoritized populations. The higher the selectivity of the institution, the greater the graduation rates for minoritized student populations and narrowing the persistence gap (Melguizo, 2006; Gaddis, 2015).

There have been mixed findings related to academic success for students of color and vertical transfer students of color in relation to institutional characteristics of the campus. Overall, students of color who enroll in selective institutions tend to perform just as well, if not better than students at less-selective, more broad access institutions by completing their degrees and maintaining GPA averages similar to white students, who were comparison groups for such studies (Melguizo, 2006; Glynn, 2019). The findings shift when discussing transfer students, as Umbach et al. (2018) found that transfers enrolled in more selective institutions tended to complete their bachelor's degrees at lower rates. Additionally, transfer students of color managed to earn lower GPAs at more selective institutions than their peers at HBCUs (Umbach et al.,

2018). The authors attribute these findings to such institutions not being as responsive or *friendly* to transfer students. Given a CRT or QuantCrit lens, a revisit of Umbach et al.'s (2018) findings of African American and Asian American students being less successful in their transition at the four-year than other racial/ethnic groups from this study. It could be that Black and Asian American students are experiencing some form of racial discrimination at a heightened level, more so than other racially minoritized transfers from this study (Umbach et al., 2018). This, in turn, could offer more opportunities to discuss specific strategies to support such minoritized populations. Examples could be to revisit (if any) or create *diversity* or anti-racist training across these participating institutions, along with town hall sessions with students, staff, and faculty.

Academic Experiences

Vertical transfer students experience many challenges once enrolled at a four-year college or university. For instance, transfer students have struggled with adjusting to the academic life demanded of the four-year (Dowd et al.; Melguizo et al.,2011) facing obstacles when seeking information on the best ways to navigate their transfer journeys (Bensimon & Dowd, 2009; Townsend & Wilson, 2009); and making connections with staff, faculty, and students at the receiving institution (Townsend & Wilson, 2009). These experiences have been coined under the umbrella term of *transfer shock* (Glass & Harrington, 2002; Ishitani & McKitrick, 2010), whereby students experience a level of decline in academic performance and, at times, experience a hostile campus environment (which interacts interchangeably with academics) (Townsend & Wilson, 2006). For transfer students of color, in addition to experiencing a sense of anonymity due to negative experiences in the campus environment, transfer students of color also experience a sense of marginalization due to the lack of institutional validation (Rendon, 1994) from faculty and staff members. These experiences, of

course, are often intersectional (Crenshaw, 1990). It is hard to separate validation from faculty, staff, and administrative personnel without first considering the intersectional identities of transfer students that are often marginalized. Transfer adjustment is pivotal to the success of any student who transfers from a community college.

Transfer adjustment and social integration for students of color are vital to creating a supportive environment (Townsend & Wilson, 2008, 2009). Transfer students of color approach socializing and socialization at their receiving institution differently from their counterparts who enrolled as first-time freshmen (Nuñez & Yoshimi, 2017; Townsend & Wilsons, 2008; Wawrynski & Sedlacek, 2003). Vertical transfer students of color establish connections to campus and seek out academic activities that coincide with their educational goals, like working with faculty on research projects and academic/pre-professional student organizations related to their fields of study or desired careers (Nuñez & Yoshimi, 2017; Townsend & Wilsons, 2008; Wawrynski & Sedlacek, 2003). These studies highlighted did focus on structures of opportunities on campus at the receiving institution for transfers, focusing on how well they adjusted to the campus without looking at outcomes like degree aspirations or degree completion. A few studies outlined toward the end of this chapter will focus on degree aspirations overall, given the minimal work on transfer students' aspirations.

One study, in particular, examined the experiences of race and gender differences of students of color transferring from a four-year university into a community college (Wawrynski & Sedlacek, 2003). An overall highlight of this study was to consider noncognitive variables to gauge transfer students' potential to succeed (Wawrynski & Sedlacek, 2003). African American and Asian American students demonstrated the greatest interest in working with faculty than other student groups and meeting people from different cultures (Wawrynski & Sedlacek, 2003).

Studies on the interest in engagement in a diverse society show that students tend to have a greater sense of belonging on campus, which impacts their academic self-concept in a positive manner (Wawrzynski & Sedlacek, 2003).

Validating transfer student experiences contribute to higher self-efficacy and a sense of belonging on college campuses (Solis & Duran, 2020; Vasquez, Gonzalez, Cataño, & Garcia, 2021; Zhang & Ozuna, 2015). Faculty members play an essential role in recognizing the talents and abilities of students; their role in transfers' transition at the four-year supports their academic development and integration on college campuses (Zhang & Ozuna, 2015). Students' self-concept related to faculty validation increases their confidence in being a leader and successful scholars (Sax, Bryant, & Harper, 2005). These validating experiences prove essential to transfer student success and to be receptive to their transfer experiences (Jain et al., 2011).

Stigma as a transfer student. The transfer student stigma bears one of the heaviest predictors of student academic-adjustment outside of transfer students' racial/ethnic identity (Shaw, Spink, Chin-Newman, 2019). The transfer student stigma is an extension of the sense of belonging literature, as it pertains explicitly to transfer student adjustment on college campuses (Walton & Cohen, 2007). The *belonging uncertainty* stems from negative stereotypes that transfer students are perceived to have less academic preparation to excel at the transfer institution and/or are less deserving to be there as the perceived hurdles for transfers to enter the four-year are perceived to be less rigorous than that of the application process of high school seniors. At times, these sentiments are microaggressed to transfer students in ways expressed through faculty, student, and staff perceptions (Shaw et al., 2018). Because of this, transfer students often internalize such stigma, which contributes to the uncertainty of their academic abilities (Shaw et al., 2018), which could dampen longer-term degree aspirations. Shaw et al.

(2018) suggest interventions to establish rapport and support networks across community colleges and four-year colleges and universities. These relationships would smooth the adjustment process for transfer students and facilitate more accessible and more meaningful connections with faculty and staff at the four-year institution. Jain et al. (2020) discusses the concepts of a transfer sending culture and a transfer receptive culture that can provide students with better academic adjustment opportunities where students' social identities (primarily race and ethnicity) are centered in ways that allow for meaningful recommendations. Students' experiences with transfer stigma and/or academic adjustment also impact their social experiences on college campuses.

Social experiences. Vertical transfer students at times move further away from their home base; at times, they are journeying in such a great distance for the first time (Bryant, 2001). Such transfer journeys have created psychological, social, and emotional challenges (Fermatt, Grimm, Nylund-Gibson, Gerber, Brenner, & Solórzano, 2019). This level of psychological distress has also impacted how students navigate their actual campus environment (Bryant, 2001) in ways that have unintended consequences when trying to meet new people. Transfer students of color have been found to experience imposter syndrome, culture shock, and racial microaggressions at the receiving institution (Ranking & Reason, 2005; Solórzano, Ceja, & Yosso, 2000; Yosso, Smith, Ceja, & Solórzano, 2009).

Such intersecting identities bears a heavy toll at times, as transfer students have also been discriminated against simply for being transfer students from the community college system (Hagedorn, 2010). Such discrimination has been premised on stereotypical beliefs that community college education is deemed inferior (Hagedorn, 2010). Prior studies have noted that (at times) campus administrators may perceive transfer students as less desirable for admissions,

lack the academic preparation to succeed at the four-year institution, and do not share the commitment as non-transfer students (Hagedorn, 2010; Cutright, 2011). This, of course, has been debunked by other studies and reports that highlight the opposite—transfer students not only graduate but have recently been found to have higher degree completion rates within a six-year time frame (transfers beginning their journey at the community college) than non-transfers (Gwynn, 2019). Although the academic strengths held by many community college students (Cuellar & Johnson-Ahorlu, 2016; Dougherty & Kienzl, 2006), very little has been done to demonstrate the aptitude that transfer students have at the four-year level (Jain, Bernal, & Lucero, 2016; Jain et al., 2020). This is crucial, as staff, faculty, and administrators who hold negative implicit biases towards transfer students may prevent future programming and initiatives that support transfer adjustment, a sense of belonging, and positive experiences with the overall campus climate. If faculty indeed hold these stereotypical views, they may consciously or unconsciously be less outwardly accepting or validating to students. Many of these negative experiences are also mainly due to how polarization within higher education institutions mimics the spaces where racial and ethnic minoritized students live compared to non-minoritized folks (Carnevale & Strohl, 2013). Though such students discussed above develop a navigational prowess needed to be successful within their environments, it is important to consider how institutional agents provide the appropriate support to assist students in tackling the various challenges they face in navigating higher education.

Graduate Degree Aspirations

Student aspirations as a critical measure for success are seldom explored and are one of the most minor understood concepts within higher education (Carter, 1999; Litzer & Lorah, 2018). Early work has clarified how educational aspirations and the characteristics and

experiences that account for their variation differ by race, ethnicity, and other marginalized social identities (Pascarella et al., 2004). Decades of scholarship have attempted to connect aspirations and attainment (Carter, 2002; Pascarella, 1984; Sewell et al., 1969; Weidman, 1989), including relatively recent work since 2014 (English & Umbach, 2016; Mattern & Randuzel, 2015; Rocconi, Ribera, Nelson-Laird, 2014). Much attention has been paid to this issue, as studies demonstrate that students' graduate degree aspirations share prevalence on graduate/professional degree enrollment, persistence, and completion of respective programs. There have been multiple approaches to graduate degree aspirations. More recent studies have controlled pre-college characteristics (English & Umbach, 2016; Mattern & Randuzel, 2015; Rocconi, Ribera, Nelson-Laird, 2014) to see the impacts that it may have on graduate degree choice. Findings from these studies echo prior work (Carter, 1999, 2001) that highlights the significance that race, class, and college preparation weigh heavily on developing intentions for graduate degrees. Specifically, students from a lower socioeconomic status have reported lower aspirations than their middle to upper-class peers. Parental education has been directly and indirectly associated with aspirational graduate development, as students who have parents who have earned college degrees tend to aspire for more advanced education compared to their first-generation peers.

What has not been centered on such studies is how transfer students develop and sustain such aspirations at the four-year college or university. One study in particular (English & Umbach, 2016) controls for *transfer status* and notes that students who transferred from their current institution reported lower expectations toward earning a post-baccalaureate/professional degree than non-transfer students. This finding was not further problematized as to how and/or why that may happen, further demonstrating the need to investigate findings on transfer-student

aspirations for graduate/professional enrollment. Transfer students need to be included in the conversation and practices that use work on noncognitive variables that predict the development of graduate degree aspirations, registration, and completion. This study seeks to advance the work of other scholars by building a predictive model of degree aspirations for a sample of vertical transfer students of color. The following paragraphs review relevant research on degree aspirations of college students generally to establish a foundational set of predictor variables to test in a statistical model for vertical transfer students of color.

Earlier research that examined differences in degree aspirations by race and ethnicity reported contradictory findings. For instance, a few studies found that underrepresented racial minority students had lower degree aspirations than the white and Asian peer groups used for comparisons (Pascarella et al., 2004). By contrast, Gong (2012) found no differences in educational aspirations among Latinx, Black, Asian, or White students. Both Gong (2012) and Pascarella et al. (2004) had a relatively similar sample size of under 4,000 student participants. Differences in the sample population are that Pascarella et al., 2004 used data derived from study participants within a national science foundation grant that monitored student experiences over time. Gong (2012) used secondary data from the National Longitudinal Survey at Princeton University. This literature demonstrates the complexities of using race or ethnicity as a measurable unit of analysis in understanding degree aspirations. Additionally, it further exacerbates the issue of the inability of scholars to find a clear framework to measure successful outcomes when it involves race and ethnicity.

The impact of gender and educational aspirations is similar to the previous discussion on race and ethnicity, as findings have been mixed with respect to differences in gender identity. Pascarella and their colleagues (2004) study found that males held greater aspirations toward

earning a graduate degree than women college students. Carter (1999), on the other hand, found no differences in the impact that the binary operationalization of gender had on postbaccalaureate aspirations. There have been interaction effects noted on the experiences of minoritized populations along with their gender, where African American women were less likely to aspire toward a graduate degree than African American men (Pascarella et al., 2004). Lastly, student loans appeared to have a significant positive effect on graduate aspirations for White and international females. In contrast, non-international female students of color did not benefit nor were deterred from graduate aspirations when controlling for student loans (Lorah & Litzer, 2018).

More frequent contact with faculty also accounts for the increased likelihood of aspiring to graduate degrees. For instance, greater interactions with faculty, whether inside or outside of the classroom, contribute to students' graduate degree aspirations (Kilgo & Pascarella, 2015; Trolian & Parker, 2017). Additionally, such involvement with faculty and its impact differentiates by student's doctoral degree aspirations in relation to master's degree aspirants (Litzer & Lorah, 2018). For one study findings specific to race and ethnicity on graduate aspirations note that Asian-American, Pacific Islanders, and Latinx students were less likely to benefit from these interactions that contributed odds toward their graduate degrees (Trolian & Parker, 2017). Another specific study found similar results for Black students compared to white students (Litzer & Lorah, 2018), where Black students were less likely to have any positive benefit from faculty interactions when examining graduate degree aspirations.

Theorizing Educational Aspirations

Findings in the literature discussed above situated their results amongst theoretical and conceptual models regarding aspirations or college choice (Perna, 2004). These interdisciplinary

models have been grounded in the economic frameworks of human capital theory (Litzer & Lorah, 2018). The concept behind human capital is its contention that individuals' ability to accumulate economic value is related to their abilities, skills, and knowledge (Becker, 1962). This theory grows from prior economists' conclusions that investments in human capital impact economic productivity in ways that parallel *traditional* concepts of physical and material capital (Cohn & Geske, 1990). Within the context of education, human capital theory suggests that educational investment results in more sophisticated skillsets to meet unique job demands, leading to a higher wage (Thomas & Perna, 2004).

Other popular approaches to understanding educational aspirations are through social and cultural capital (Perna, 2006; Reay, 2004; Dumais, 2002). Cultural capital considers individuals' cultural knowledge from caregivers, parents, or guardians (Perna, 2006). The *culture* that has the *capital* (Yosso, 2006) that positively impacts students' educational development and career goals are the cultures that are valued by dominant paradigms, which stem from white, colonial, Christian culture (Dumais, 2002). Understanding social capital is similar, where having a network of resources and connections to peers in places and spaces that are a part of or perpetuate the hegemonic colonial structures has positive implications for students engulfed with such networks (Perna, 2006; Yosso, 2006). Though these frameworks make great strides in understanding degree aspirations for students, they miss opportunities to problematize the complexities of race and transfer status of minoritized populations. Thus, this study incorporates Jain and colleagues' (2011) framework of establishing a transfer receptive culture to examine differences in graduate degree aspirations for transfers of color.

The frameworks discussed above are highly popularized epistemological viewpoints used to create knowledge around educational aspirations. Within recent decades, several frameworks

have evolved from here to provide a more critical analysis of student success outcomes related to educational goals or attainment (Hurtado et al., 2012; Harper, 2010, Jain et al., 2011, Jain et al., 2020; Laanan & Jain, 2016). Though these frameworks were not created to understand educational aspirations, these concepts are well suited to contextualize graduate degree aspirations of students of color, especially among those who transferred to four-year institutions after attending a community college (Jain et al., 2011; Jain et al., 2020, Laanan & Jain, 2016).

This study pushes beyond the limits of more traditional ways of thinking about developing degree aspirations (i.e., capitalistic frameworks) to take a more critical approach. Likewise, given the sample and population of interest, this study incorporates the concept and measures related to a transfer receptive culture. This study relies on findings from previous research pertaining to degree aspirations to determine whether these same predictors hold for transfer students and was used to interpret the conclusions from a more critical vantage point to problematize the results related to transfer students of color.

Chapter Three: Methodology

This study aimed to examine the extent to which institutional characteristics of college campuses and perceptions and experiences with campus racial climate impact the graduate degree aspirations of vertical transfer students of color. Through an investigation of the campus contexts, demographic characteristics, and individual experiences and perceptions that contribute to aspirations for post-baccalaureate degrees among transfer students of color, this study aimed to identify effective strategies and policies that faculty, staff, institutional leaders, along with state and federal leaders can implement in supporting the success of transfer students of color. Given this study's focus on a traditionally marginalized population of college students, I draw from the lenses of transfer receptive cultures (Jain et al., 2011), including the concepts of cultural and social capital; Critical Race Theory (Bell, 1992; Gillborn et al., 2018); and QuantCrit frameworks (Gillborn et al., 2018) to problematize the role of race in the development of graduate degree aspirations among transfer students of color.

This chapter describes the methodological approach to address the research questions guiding this study. After revisiting the research questions, I describe the characteristics of the data source and sample, including the considerations for including respondents in the analytic sample. I then review key measures tested in my statistical models before describing the proposed analytical approach. Finally, the chapter concludes with a section outlining the limitations of the sample and research design.

Research Questions and Associated Hypotheses

1. To what extent do campus climate perceptions predict intentions to pursue a graduate degree for vertical transfer students of color?

a. To what extent does the association between perceptions of campus climate and intentions to pursue a graduate degree vary by institutional characteristics?

Hypotheses for 1-1a: Based on prior research, I expect several institutional characteristics will significantly predict the likelihood that vertical transfer students aspire to earn a post-baccalaureate degree, specifically, whether attending a more selective institution moderates the relationship between campus climate perceptions and degree aspirations. Students who hold more negative perceptions of the campus racial climate are expected to aspire to graduate degrees at lower rates. The moderation effect of campus climate measures is expected to weaken graduate degree aspirations. I believe that attending a more selective institution would exacerbate the negative impact that perceptions of a more hostile campus climate would have on graduate degree aspirations.

Rationale for 1-1a: Highly selective and/or research-intensive universities tend to have transfer students who report negative experiences toward acclimating to college life on campus. Often, transfer students at highly selective institutions struggle from the stigma of being a transfer student from the community college (Gwynn, 2019), feelings of not belonging (Shaw et al., 2019), and/or report negative campus racial climate experiences. Highly selective institutions have been less transfer-friendly in that spaces that hold resources specifically for transfer students are abysmal (Gwynn, 2019). Thus, seeing whether the effects of these negative perceptions on aspirations are magnified at more selective institutions will be explored.

2. Controlling for individual (e.g., demographics, experiences, perceptions of campus climate) and institutional (e.g., control, type) measures, to what extent do graduate degree aspirations vary by institutional characteristics?

Hypotheses for 2: Similar to what has been noted for hypotheses 1-1a, I predicted that campus-level characteristics would impact graduate degree aspirations for vertical transfer students of color. Institutional characteristics such as selectivity are expected to directly impact aspirations. Particularly for selectivity, enrollment in higher selective institutions will dampen any form of graduate degree aspiration. Other characteristics outside of level two controls (campus characteristics) would positively impact aspiring toward any type of graduate degree. Students who engage with campus resources, involvement opportunities, extracurricular opportunities, and have greater (positive) interactions with faculty were expected to have greater aspirations toward obtaining a graduate degree than those who report minimal engagement with campus-level characteristics in those mentioned above.

Rationale for 2: It has been documented that transfer students thrive in an environment that provides resources and support as they transition in and along their journey through graduation (Femmatt et al., 2019). Students who feel supported through transfer orientations, courses, and advising approaches tend to have better social and academic adjustments (Femmatt et al., 2019). Additionally, transfer students often struggle with interactions with faculty, as community colleges they come from often have smaller classroom settings (Rhine et al., 2000; Roberts & McNeese, 2010; Townsend & Wilson, 2006). This could be a potential institutional barrier for vertical transfer students of color, as research on positive faculty-student relationships contributes to higher levels of engagement and learning (Astin, 1993; Cutright, 2011; Ewell & Jones, 1996; Kuh et al., 2006; Pascarella & Terenzini, 1991; Umbach & Wawrzynski, 2005; Wood & Williams, 2013). Because of such past empirical findings, I expected that students who report more positively on campus climate experiences relevant to campus-level characteristics would have greater aspirations toward obtaining a postbaccalaureate degree.

Research Design

This study focused on secondary data analysis of data from the College Senior Survey (CSS) administered by the Cooperative Institutional Research Program (CIRP) at the Higher Education Research Institute (HERI). CIRP is the nation's oldest and largest survey center for higher education, holding data on about: 1,900 institutions, just over 15 million students, data on more than 300,000 faculty, and have recently established a staff climate survey that is increasing staff participation. In addition to the CSS, the CIRP longitudinal program also administrates The Freshman Survey (TFS), Your First College Year (YFCY) Survey, Diverse Learning Environments Survey (DLE), Staff Climate Survey (SCS), and the Faculty (FAC) Survey.

Data source

The CSS provides data on college students' collegiate characteristics, attitudes, behaviors, and expectations for college. CSS data specifically addresses this through surveying students on academic achievement and engagement; student-faculty interaction; cognitive and affective development; student goals and values; satisfaction with the college experience; degree aspirations and career plans; and post-college plans (HERI, 2020). The CSS is intended to be an exit survey for graduating seniors across participating colleges and universities. Administration of the surveys occurs throughout the regular academic year, usually throughout the periods of November through June of the respective college year. This study specifically analyzed CSS data collected between 2015 and 2019; during these years, HERI offered the CSS as both a paper- and web-based instrument. The sample was limited to only respondents who reported having transferred from a community college (or vertical transfer students) and identified as underrepresented students of color.

Student sample

The student sample size utilized for this study is 5,589 transfer students of color. This was reflective of filtering the CSS dataset to ensure that I looked at students of color who also indicated that they transferred from a two-year college. These students were enrolled at more than 140 four-year colleges and universities.

Analysis

Preliminary analyses included descriptive statistics, frequency distributions, and factor analyses. Additionally, CIRP Construct Scores were also utilized through the preliminary analyses and determined the final variables that should be considered for the final analysis.

The preliminary descriptive analyses provided statistics that described the characteristics of both students and institutions in the study's analytical sample. This investigation's primary outcome measure (dependent variable) was vertical transfer students' self-reported degree aspirations on the College Senior Survey.

Since the analysis observed students nested within various institutions on the CSS ace variable, Hierarchical Generalized Linear Modeling (HGLM) was the primary analytical technique utilized for this investigation (Raudenbush & Bryk, 2002). HGLM techniques controlled for key student- and institution-level variables hypothesized to impact the graduate school aspirations for vertical transfer students across institutions nested within conditions that varied by institutional characteristics. The generalized linear model approach is a multilevel modeling technique that is ideal when the dependent variable is categorical with unranked categories. The binomial HGLMs ran allowed to observe differences amongst master's degree aspirants, doctoral degree aspirants, and those who hold no aspirations for any post-baccalaureate degree program. Three different HGLMs were run with coefficients of interest that had a direct

impact on comparing doctoral aspirations versus those with no aspirations, comparing master's degree aspirants versus students with no aspirations, and those who aspire to pursue a doctoral degree against those who would like to earn a master's degree only.

Across all three models, ANOVAs showed significant variation in degree aspirations across colleges and universities, which justified proceeding with the multilevel approach. In addition to conceptually arranging items on a block-by-block basis, statistical models for the three dichotomous derivations of the outcome were run where each independent variable was entered individually. This deliberate approach helped determine the cause of changes to the parameter estimates as the models became more specified, allowing for the interpretation of indirect effects of the predictors on the outcome variables.

Dependent Variable

Students' graduate degree aspirations represent the dependent variable for this study. The CSS asks students to mark down the highest degree they plan to complete. Specifically, the CSS 2015-2019 survey instruments asked students to report their "highest degree planned at any institution." Response options included "None"; "Vocational certificate"; "Associate (A.A. or equivalent)"; "Bachelor's degree (B.A., B.S., etc.)"; "Master's degree (M.A., M.S., etc.)"; "Ph.D. or Ed.D."; "M.D., D.O., D.D.S., D.V.M."; "J.D. (Law)"; "B.D. or M.DIV. (Divinity)"; and "Other." Since I was interested in students' post-baccalaureate pursuits, I recoded this dependent variable in two distinct ways: three different binary variables for binary analytic techniques and one three-level variable to examine degree aspirations descriptively through frequency distributions. I was interested in seeing more than one option within transfer students' graduate degree aspirations: Master's degree pursuers compared to those who wish to pursue some form of a doctoral degree. The dependent variable for frequency distributions included

three distinct values: “Bachelor’s degree (B.A., B.S., etc.)”; while including “B.D. or M.DIV (Divinity), “J.D. (Law),” and “Master’s degree (M.A., M.S., etc.) for the master’s degree categories; and a final separate grouping that considers “Ph.D. or Ed.D.” and “M.D., D.O., D.D.S., D.V.M.” All other values were recoded as missing and removed from the analysis. The dependent variables used for the final analyses were split, comparing master’s aspirants to no graduate education, doctoral aspirants compared to no graduate education, and master’s aspirants compared to doctoral aspirants. Table 3.1 below demonstrates the variability of marked responses for graduate degree aspirations among transfer students of color.

Table 3.1

Frequency distribution of Aspirations by Race and Ethnicity

Race/Ethnicity	bachelor's degree aspirants	master's degree aspirants	doctoral aspirants	Total
Native American	12 40 %	12 40 %	6 20 %	30 100 %
Asian/Pacific Islander	441 40.8 %	448 41.4 %	192 17.8 %	1081 100 %
Black/African American	345 30.2 %	533 46.7 %	264 23.1 %	1142 100 %
Latinx	535 30.7 %	891 51.2 %	314 18 %	1740 100 %
Other Race/Ethnicity	75 32.1 %	89 38 %	70 29.9 %	234 100 %
Two or more Races/Ethnicities	382 28 %	644 47.3 %	336 24.7 %	1362 100 %
Total	1790 32 %	2617 46.8 %	1182 21.1 %	5589 100 %

A preliminary raw count demonstrates that a plurality of respondents (46.8%) indicated that they wished to obtain a master's degree. The following will review the independent variables for this study.

Independent Variables

Two independent variables were investigated for this study: student-level variables (L1) and institution-level variables (L2), to help determine the impacts of graduate degree aspirations of transfer students of color across public colleges and universities. The L2 variables for consideration for this study were "institutional type," "institutional control," and "selectivity" variables. The variable for institutional type separated colleges and universities, institutional control categorized institutions as either public or private, and institutional selectivity was a variable with nine values. The lower to higher values meant lower to higher selectivity of the campus.

The level 1 student variables consisted of the bulk of items that will be controlled in these analyses. The level 1 items proposed individually made up far more than 35 independent variables, usually a threshold for a multilevel model.

Exploratory Factor Analyses. Part of these independent measures includes exploratory factor analyses (EFA) to show a multifaceted look at latent concepts like academic validation and a campus racial climate. Results that determine interrelationships amongst variables are the variable loadings that are outputted once the EFA is run. Loadings over 0.5 and under one determined which item were considered for the EFA used to capture one general measure for the models (i.e., campus racial tension, validation experiences). Once variable loadings met research thresholds, a reliability analysis was conducted to determine the overall internal consistency among each set of measures. Reliability analyses that had a Cronbach's alpha of above 0.60 and

did not exceed 0.90 were used to determine if the factor was appropriate for use in the HGLMs. In addition to exploring factor analyses, I also utilized the CIRP Construct scores to answer research questions 1 and 2. The CIRP constructs utilize a modern psychometric method known as Item Response Theory (IRT) (Embretson & Reise, 2000). Construct scores were derived by computing them in IRT based on the students' responses that make up the CIRP constructs utilized for this study (Academic Self-Concept and Habits of Mind). Construct scores are estimated parameters that show the important questions have with respect to students' environment when completing the survey. Constructs are created to measure a single trait or aspect of students' involvement on college campuses. See Table 3.2 for individual factor loadings and reliabilities of EFA latent measures.

***Specific measures*.** Factors included in this study captured the following student experiences: satisfaction with on-campus student support services, validation in the classroom, general interpersonal validation, and experiences with hostile campus climate. As far as CIRP constructs, students' perception of their academic self-concept was used, along with a measure to capture students' civic awareness across college campuses or universities. The run EFAs were also recoded and recreated into new variables that follow similar coding strategies to that of the CIRP group construct scores noted above.

Survey items that comprise factors used to measure validation for this study are not a new way to explore validating experiences for students of color (Hurtado, Cuellar, & Guillermo-Wann; Rendon, 1994). Hurtado and colleagues' (2011) study on the sense of validation and its impact between student experiences and educational outcomes has influenced a large portion of the selection of items above.

General perceptions of the university and campus racial climate were examined by four-factor scores, one of which will be a CIRP Construct (Gillborn et al., 2018; Hurtado et al., 2018). CIRP constructs of Academic Self-Concept will conceptualize experiences tied to transfer student stigma and the greater campus climate experience (Jain et al., 2011; Hurtado et al., 2018). The remaining EFA scores for campus climate were campus racial tension (Gillborn et al., 2018), academic validation in the classroom, and general interpersonal validation (Hurtado et al., 2011) (Table 3.2).

Table 3.2
Factor Loadings and Reliability Estimates for Latent Variables

Individual Survey Items that comprise Factors	n=5,589 Factor loading (alpha)
Campus Racial Tension	**(0.74)**
I have felt discriminated against at this institution because of my race/ethnicity, gender, sexual orientation, disability status, or religion	0.74
Felt insulted or threatened because of your race/ethnicity	0.62
There is a lot of racial tension on this campus	0.66
In class, I have heard faculty express stereotypes based on social identity (such as race/ethnicity, gender, sexual orientation, disability status, or religion)	0.60
Satisfaction with On-Campus Services and Support	**(0.76)**
Academic advising	0.43
Financial aid package	0.45
Student psychological services	0.69
Student health services	0.69
Tutoring or other academic assistance	0.58
Career-related resources and support	0.67
Academic Validation in the Classroom	**(0.80)**
Feedback on your academic work (outside of grades)	0.63
Felt that my contributions were valued in class	0.70
Encouragement to discuss coursework outside of class	0.63
Felt that the faculty encouraged me to ask questions and participate in discussions	0.70
The faculty showed concern about my progress	0.52
Faculty empower me to learn here	0.66

General Interpersonal Validation	**(0.81)**
Help in achieving your professional goals	0.56
At least one staff member has taken an interest in my development	0.74
Faculty believe in my potential to succeed academically	0.77
At least one faculty member has taken an interest in my development	0.81

Racial tension. Students' experience with the campus racial climate is a key component of this study. One measure to examine transfer students' experiences with the racial climate is via the racial tension factor score. As mentioned above, exploratory factor analyses were run to test not only the interrelationship amongst variables but to utilize aspects of transfer receptive culture and critical race theory into a factor score that captures students' perceptions of their campus climate in relation to racial marginalization and marginalization of other social identities (see Table 3 for the individual items that make up the factor).

Academic validation within the classroom. Academic validation in the classroom has similar findings to other EFAs reported in this study. The three value breakdowns are close to being evenly distributed as thirds.

General interpersonal validation. General interpersonal validation captures students' validating experiences outside of the classroom. More students had greater experiences with general interpersonal validation than validation in the classroom, as more students reported higher rates of feeling validated across high (35.3%) and average (39.9%) scores compared to classroom validation scores.

Academic self-concept. Academic self-concept is a CIRP construct score developed to measure students' intellectual self-confidence and ability to successfully navigate college. The higher the ratings for this score, the more students felt greater overall confidence in handling academics. Academic self-concept is treated as an affective outcome (Laanan & Jain, 2016)

when quantitative analyses are a consideration to examine transfer student experiences. Students experiences in relation to this measure supports the third element of a transfer receptive culture (Jain et al., 2011).

Habits of mind. Habits of mind is a CIRP construct created to measure students' behaviors, and traits deemed successful habits used to excel in college. These items are a combination of inquiries on study habits, material comprehension, and classroom effort given on behalf of students. Similar to reports regarding academic self-concept, the highest proportion of group scores centered around the mean as "average" scores at 40.1%, followed by high (37.5%) and low (22.4%) scores.

Operationalizing a Transfer Receptive Culture

The independent variables used for this study will be examined around transfer students' enrollment within the four-year college or university. Thus, Jains' and Colleagues' elements three and four on transfer student experiences regarding their enrollment at the four-year will hold particular importance for this study. University enrollment (Jain et al., 2011; Lannan & Jain, 2016) will examine variables within the context of a transfer receptive culture (Jain et al., 2020) and further problematized with Quantcrit (Gillborn et al., 2018) and CRT. Specifically, items under university enrollment will be broken down into smaller categories of understanding: Demographic Characteristics, Institutional Characteristics; Academic Performance; Academic Experiences; and Social Experiences. Table 3.2, provided below breakdowns down the codebook that references all the variables used for the study and the response options/values that they carried; EFA variables are reported in a different table. The individual items that makeup factors are provided on (Table 3.2). The individual factors that make up the EFA score variables are provided in separate tables.

Table 3.3.
Codebook

Demographic Characteristics	Response Values
Gender (Male, Female)	1=Male, 2=Female
LGBTQ+ (Hetero, LGBTQ+ Identifying)	1=Heterosexual Identifying 2=LGBTQ+ Identifying
Institutional Characteristics	
Institutional Control (Public, Private)	1=Public, 2=Private
Institutional Type (4-year college, 4-year university)	1=4-year college, 2=4-year university
Campus Selectivity (values, 1-9)	Values range from low to high in campus selectivity
Academic Performance	
Major GPA	1 =D to 8=A/A+
Educational Expenses: Personal Income, Grants, and Loans	
Ed Expenses: My own income, $1 to $2,999 (ref. $0)	0=No, 1=Yes
Ed Expenses: My own income, $3,000 to $5,999 (ref. $0)	0=No, 1=Yes
Ed Expenses: My own income, $6,000 to $9,999 (ref. $0)	0=No, 1=Yes
Ed Expenses: My own income, $10K to $14,999 (ref. $0)	0=No, 1=Yes
Ed Expenses: My own income, $15K or more (ref. $0)	0=No, 1=Yes
Ed Expenses: Grants, $1 to $2,999 (ref. $0)	0=No, 1=Yes
Ed Expenses: Grants, $3,000 to $5,999 (ref. $0)	0=No, 1=Yes
Ed Expenses: Grants, $6,000 to $9,999 (ref. $0)	0=No, 1=Yes
Ed Expenses: Grants, $10K to $14,999 (ref. $0)	0=No, 1=Yes
Ed Expenses: Grants, $15K or more (ref. $0)	0=No, 1=Yes
Ed Expenses: Loans, $1 to $2,999 (ref. $0)	0=No, 1=Yes
Ed Expenses: Loans, $3,000 to $5,999 (ref. $0)	0=No, 1=Yes
Ed Expenses: Loans, $6,000 to $9,999 (ref. $0)	0=No, 1=Yes
Ed Expenses: Loans, $10K to $14,999 (ref. $0)	0=No, 1=Yes
Ed Expenses: Loans, $15K or more (ref. $0)	0=No, 1=Yes
Satisfaction with On-Campus Services and Support	See Table 3.2
Academic Experiences: Institutional Stigmatization of Transfer Students	
Campus Racial Tension	See Table 3.2
Academic Self-Concept Score	See Table 3.2
Academic Experiences: General Perceptions and Experiences with Faculty	
Academic Validation in the classroom	See Table 3.2
General Interpersonal Validation on Campus	See Table 3.2
Academic Experiences: Courses	
Capstone (No, Yes)	0=No, 1=Yes
Academic Experiences: Course Learning	
CSS Habits of Mind Score	See Table 3.2
Social Experiences: Engagement and Involvement	

Participation: Racial/Ethnic Org (No, Yes)	0=No, 1=Yes
Participation: Preprofessional or Dept. Club (No, Yes)	0=No, 1=Yes
Research Collaboration with Faculty	1=0 Months 2=1-3 months 3=4-6 months 4=7-12 months 5=13-24 months 6=25+ months
Research Ability developed by Institutions	1=Strongly Disagree 2=Disagree 3=Agree 4=Strongly Agree
Hours per week: Working off-campus	1=None 2=Less than 1 hour 3=1-2 hours 4=3-5 hours 5=6-10 hours 6=11-15 hours 7=16-20 hours 8=Over 20 hours
Contributing money toward Family Needs	1=Not at all 2=Occasionally 3=Frequently
Civic Awareness Score	See Table 3.2
Observations	5,589

Table 3.3 demonstrates how I used the variables to fit Jain and Colleagues' (2011) understanding of transfer receptive culture with the outlining of variables supported by Laanan and Jain's (2016) critical framework for transfer student research. First, as shown in table 3.3, demographic characteristics are used at the model's beginning steps, including gender, LGBTQ+ status, and educational expenses financed by their own income. These demographic characteristics are considered inputs, describing student traits present before entering the four-year college or university. The institutional characteristics category—selectivity, control (public or private institutions), and type (four-year college versus a university) were important measures for this study that captured the varying results of degree aspirations contingent upon such institutional characteristics.

Academic performance was operationalized via students' primary major GPA (Glass & Harrington, 2010). With regard to *Academic Experiences*, Exploratory Factor Analyses were conducted to examine students' experiences with general perceptions of the university and campus racial climate, experiences with faculty, overall satisfaction with the university.

Social experiences for transfer students on campus were important to study since transfer students engage with such behavior differently than that of the *traditional* college student (Deil-Amen, 2015). Social experiences note the importance of engagement, involvement, and leadership experiences outside the classroom. These experiences are important for transfer students and heavily influence transfer student outcomes.

Quantitative Critical Race Theory (QuantCrit)

Quantcrit is an explanatory framework and methodological approach that incorporates quantitative methods to account for the potential material impact of race and racism at the

intersections with other forms of subordination (Gillborn et al., 2018). Quantcrit establishes a way to bring in Critical Race Theory (CRT) understandings when quantitative data is used. Key principles for QuantCrit that will be utilized for this study are: (1) the centrality of racism; (2) numbers are not neutral; (3) categories are neither *natural* nor given; and (4) ensuring the use of numbers for social justice (Gillborn et al., 2018). These tenets foreground the understanding that race is more than just a variable; race is a *construction* in place with social relationships (Gillborn et al., 2018). Such efforts discussed above bring intentionality around the research design that ensures that quantitative data produced, analyzed, and leveraged is done so with the intent of (5) social justice and promoting equity-minded practices (Gillborn et al., 2018). Quantcrit (Gillborn et al., 2018) will help support and interrogate findings through the theoretical model posited by Laanan and Jain (2016). Together, these frameworks will help situate quantitative findings in efforts to reimagine ways that support a social justice praxis when leveraging information around transfer students of color experiences.

The concept behind the centrality of racism is to recognize that racism is complex within the U.S. and is a changing characteristic in society that limits generalizability applied when attempting to measure racism through a variable or quantitative scaled-item. Additionally, having the centrality of race and racism in mind situates the understanding that it is important to understand that race is more than just a variable; race is a *construction* in place with social relationships (Gillborn et al., 2018). Acknowledging that *Numbers are not neutral* is to acknowledge how quantitative data (by in large) has been gathered and analyzed in ways that reflects the assumptions, interests, and perceptions of white Americans of privileged backgrounds; specifically, challenging ways in which quantitative data has created and

perpetuated deficit narratives without the attempt for any critical inquiry or interpretation (Gillborn et al., 2018).

Knowing that categories/groups are neither given nor *natural* encourages the researcher to be critical of interpreting race and how race is used as a variable. It is important to be mindful that if the concept of race is utilized in a quantitative study and its associated outcome is a negative impact. One must acknowledge and ensure that the interpretation of such effect is not a result that the minoritized population is deficient somehow, but that any such potential negative effect instead stems from a greater systemic issue associated with race and racism (Gillborn et al., 2018). Such efforts discussed above bring intentionality around the research design that ensures that quantitative data produced, analyzed, and leveraged is done so with the intent of (5) social justice and promoting equity-minded practices (Gillborn et al., 2018). As the readers will see in chapter four and the selection of variables above, Quantcrit allowed for the use of meaningful interpretations that brought in racial realism (Bell, 1989) and utilized QuantCrit tenets to engage in discussions within chapter five.

Utilizing Quantcrit

QuantCrit in practice means to be mindful of statistics on how they are used in relation to equity, race, social justice, and education. Practicing such mindfulness means challenging past (and current) ways quantitative research serves whiteness. An example is using theories that may support marginalized groups yet are operationalized in a deficit approach. Suppose one were to *control* racial and/or ethnic groups within quantitative studies. In that case, the potential unequal or *negative predictor* must lend its interpretation to greater functions of race-related to racism (Gillborn et al., 2018). The unequal outcome should not be viewed as a cause in its own right; this unintentionally leads to a minoritized group being inherently deficient.

Additionally, Quantcrit acknowledges that data cannot speak for itself, and when guiding a study that has race and/or social justice as integral to its framework--one must consider mixed-methodological design to nuance and build off quantitative models to capture additional levels of intricacy that could be missed by using quantitative analyses only (Gillborn et al., 2018). This perspective will hold in studies with non-white samples, given how their experiences are tied and related to campus measures experienced by marginalized groups. This allows them to validate and assess their experiences directly without comparing students to white dominant groups, which inherently leads to understanding or supporting students of color in ways that white students benefit from the campus.

Missing data. An inspection was done to examine how missing data became an issue at the student level within the CIRP surveys. This was done through the Multiple Imputation (MI) method (Allison, 2000). This method helped with imputing missing values using models that incorporated random variation. This introduced random error to the imputation process, which gives approximately unbiased estimates of all parameters analyzed for this study. Repeated imputations of such a process allowed for good estimates and standard errors (good standard errors are typically smaller). These standard errors allowed for better interpretation and greater opportunity for generalizability of the data, as the standard error gave greater accuracy of the sample mean when compared to the general population mean (Allison, 2000).

Contribution to Research and Significance

This study contributed to higher education research, practice, and policies that could impact the trajectory of transfer students of color coming from the community college system. First, the study contributes to the literature on college choice and degree aspirations within the

context of community college transfer students, which had yet to be independently investigated under the current scope and framing of the study. Such focus on transfer students of color will shed light on different factors (campus climate, institutional characteristics, academic and career service resources, etc.) that support or fall short in supporting students of color who have transferred from the community college. This will demonstrate the amount of navigational support that may be needed, which will provide institutions with recommendations for high-impact practices that cater towards transfer student persistence and support around graduate college choice. This will also open the door to scholarly conversations that push critical quantitative research for diverse student populations in ways that support anti-deficit narratives and recommendations on supporting vertical-transfer students of color.

This study utilized recent waves of survey data (2015-2019). There have been other studies that utilized data as recent as 2013 or earlier (Mattern & Randuzel, 2015; Hansen et al., 2016; Umbach et al., 2016; Rocconi et al., 2015) for graduate school choice processes but do little to offer generalizability and/or the opportunity to intertwine the complex transfer student identity along with being a student of color. Thus, utilizing recent data from college seniors through trended datasets from 2015 to 2019 positioned the researcher to implications for policy and practice that are timely to the current sociopolitical climate impacting today's college students (see chapter five). Recent data provides a more precise portrait of current students of color and how their enrollment patterns per institutional characteristics were impacted by their graduate school degree aspirations.

Limitations of the Study

First, the cross-sectional design of this study was limited in the opportunity to have data at two different time points, which made it difficult to truly infer what has shaped students'

graduate degree aspirations over time. Specifically, it is more difficult to discern the order in which events occurred; for example, although the prediction models introduce an assumption that students who conduct research more frequently with faculty develop aspirations for post-baccalaureate study, it could also be the case that students first develop these aspirations and later seek out opportunities, like research with faculty, to develop skills and networks that will be beneficial in their pursuits of graduate study.

Secondly, Jain and Colleagues' (2011) transfer receptive culture presents a full model that engages in ways institutions can assess and support transfer students across community college and four-year institutions. The omission of student experiences within the community college environment leaves a significant void in the study that study may not be able to fulfill yet may encourage future scholars to engage in the nuances of students enrolled in the community colleges. This quantitative study misses the opportunity to delve into and unpack issues related to the transfer process. Examining a transfer receptive culture requires more than running analytical models through survey instruments; it is important to take student accounts via qualitative interviews, especially if one wishes to problematize issues through a CRT lens.

The nature of secondary data makes it difficult for the researcher to truly analyze data that completely and specifically address the research questions. Often, the researcher is limited to the questions being asked on the survey that, in turn, are used to measure experiences on college campuses via theoretical or conceptual frameworks. Additional limitations are when the outcome used for this study deals with false positives and negatives. Though this research is intended to support graduate degree aspirations for transfers of color, there could be a possibility of false positives, where those with greater aspirations do not enroll in graduate school. Additionally, false negatives may also occur, meaning that although students may experience activities that

deter graduate degree aspirations, it is not to say that those will never enroll in graduate education as well. The next chapter will cover results from this study.

Chapter Four: Results of the Study

Introduction

This chapter will review the results of this study. I developed predictive models of degree aspirations with considerations suggested by Jain and colleagues (2011) concept of institutions upholding, partaking, or embodying a transfer receptive culture. The primary objective of this study was to examine the college experiences and facets of a campus climate that relate to the odds that transfer students of color aspire to pursue master's or doctoral degrees relative to aspirations for bachelor's degrees. The outcome of degree aspirations was operationalized in three dichotomous variables: bachelor's degree aspirants compared to master's degree aspirants, bachelor's aspirations compared to doctoral aspirations, and intentions for master's degrees versus doctoral degrees. The same variables were controlled across all analyses within these three different outcomes to ensure consistency in Jain and colleagues' (2011) transfer receptive culture. The final models (Tables 4.12, 4.14, 4.17) are organized around major themes from a transfer receptive culture (Jain et al., 2011)

The models presented here featured several significant predictors that either contributed to or detracted from the dependent outcomes under investigation. This chapter will first examine key descriptives and frequency distribution of variables. After reviewing the key characteristics of the sample, I provide the details of the multilevel, multivariate models that form the core of my analytic approach.

Descriptive Characteristics of the Sample

This section reviews the two-way crosstabulations showing how the outcome variables and other key independent variables vary across demographic characteristics of the sample.

Demographic Characteristics

The final sample of this study consisted of 5,589 transfer students of color. Women represented the greatest proportion of the sample, as two-thirds (65.3%) identified as female, the remaining 34.8% were male. This distribution parallels the gender composition of the broader CSS samples, as women more frequently respond to requests to participate in surveys (Fregoso & Lopez, 2019). As far as the racial and ethnic breakdown, Latinx students represented nearly one-third of respondents (31.1%), a quarter (24.4%) of respondents identified with more than one race or ethnicity, and about a fifth (20.4%) of respondents described their racial background as Black or African American. With respect to sexual orientation, 13.5% of respondents identified as being a member of the LGBQ+ community. Table 4.1 provides details for the full racial/ethnic composition of vertical transfer students in the sample.

Since the sample is detailing the different CSS instrumentation years together, the following table highlights the variety of racial and ethnic minoritized transfers across each year from 2015-to 2019. The CSS instrumentation year of 2019 included a higher sample of community college transfers. In 2019, raw counts for each racial or ethnic group increased; however, the share of students identifying as Latina/o/x or Asian rose dramatically. Correspondingly, the proportion of the 2019 sample identifying as Black or multiracial fell by at least ten percentage points.

Table 4.1

Frequency distribution of CSS Instrumentation Year by Race and Ethnicity (N=5,589)

	Race/Ethnicity Group						
CSS Year	Native American/ Alaska Native	Asian/ Pacific Islander	Black/ African American	Latina/o/x	Other Race/ Ethnicity	Two or More Races/ Ethnicities	***Total***

2015	7 0.6 %	198 17 %	289 24.9 %	297 25.6 %	60 5.2 %	311 26.8 %	1162 100 %
2016	5 0.5 %	121 12.8 %	244 25.9 %	247 26.2 %	53 5.6 %	273 29 %	943 100 %
2017	5 0.5 %	143 15.4 %	222 24 %	239 25.8 %	39 4.2 %	278 30 %	926 100 %
2018	5 0.7 %	107 15.4 %	164 23.6 %	208 30 %	24 3.5 %	186 26.8 %	694 100 %
2019	8 0.4 %	512 27.5 %	223 12 %	749 40.2 %	58 3.1 %	314 16.8 %	1864 100 %
Total	30 0.5 %	1081 19.3 %	1142 20.4 %	1740 31.1 %	234 4.2 %	1362 24.4 %	5589 100 %

Strategies Used to Finance Higher Education Expenses

Items that covered student financial expenditures were in the forms of students identifying how much money they contributed to their educational costs with their income, student loans, and any form of grant or aid that did not need to be repaid.

Students' personal income on educational expenses. For educational expenses covered via their income, more than one-third of respondents noted that they used anywhere between $1 to $2,999 to pay for educational expenses (37.0%). The second-largest subset of responses (21.2%) were those that indicated "none" in the overall amount of dollars they contributed from their income (income not provided by student loans, aid, or federal work-study) (See Table 4.2 for the full breakdown).

Grants assisting educational expenses. Students split on their use of grant aid to fund their college education, with about a fifth (20.9%) reporting having used at least $15,000 in grant aid, while a nearly equal percentage (20.8%) reported not relying on any grant aid to pay for college.

Loans assisting educational expenses. Students were similarly split with respect to the use of loans, as more than one-third did not rely on any loans to finance their college education compared to 29.1% who reported using more than $15,000 in loans to pay for the last year of college.

Curricular, Co-Curricular, and Extracurricular Experiences and Perceptions

Table 4.2 below provides additional descriptives of the factors and CIRP constructs utilized for this study. Chapter 3 provides additional details about the item loadings for factors created using factor analysis. All factor scores are standardized with a mean of 0 and a standard deviation of 1. CIRP constructs have a population mean of 50 and a standard deviation of 10.

Table 4.2

Descriptive Characteristics of the Analytic Sample (N=5,589)

Descriptives			
Predictors (N=5,589)	Percent Distributions	Mean	Standard Deviation
Gender (Males, Females) Males	34.8	-	-
Females	65.4	-	-
LGBTQ+ (Hetero, LGBTQ+ Identifying) Hetero	86.9	-	-
LGBTQ+ Identifying	13.2	-	-
Ed Expenses: My own income: $0	21.2		
$1 to $2,999	36.9	-	-
$3,000 to $5,999	17.6	-	-
$6,000 to $9,999	10.3	-	-
$10,000 to $14,999	6.0	-	-
$15,000 or more	8.0	-	-
Ed Expenses: Grants: $0	20.8		
$1 to $2,999	12.3	-	-
$3,000 to $5,999	17.4	-	-
$6,000 to $9,999	15.2	-	-
$10,000 to $14,999	13.4	-	-

$15,000 or more	20.9	-	-
Ed Expenses: Loans: $0	33.6		
$1 to $2,999	5.0	-	-
$3,000 to $5,999	10.1	-	-
$6,000 to $9,999	10.3	-	-
$10,000 to $14,999	12.0	-	-
$15,000 or more	29.1	-	-
Institutional Control (Public, Private) Public	49.5	-	-
Private	50.5	-	-
Institutional Type (4-year college, four-year university) Four-year college	40.3		
Four-year university	59.7	-	-
Major GPA D	0.3	-	-
C	2.5	-	-
C+	6.4	-	-
B-	8.7	-	-
B+	21.2	-	-
A-	20.9	-	-
A or A+	22.2	-	-
Satisfaction with On-Campus Services and Support	-	0.00	0.88
Campus Racial Tension	-	0.00	0.87
Academic Self-Concept Score	-	49.01	9.52
Academic Validation in the Classroom	-	350.11	159.99
General Interpersonal Validation on Campus	-	0.00	0.92
Capstone (Yes)	61.9	-	-
CSS Habits of Mind Score	-	52.47	10.30
Participation: Racial/Ethnic Org (Yes)	18.6	-	-
Participation: Preprofessional or Dept. Club (Yes)	25.5	-	-
Research Collaboration with Faculty (Yes)	50.2	-	-
Research Ability developed by Institutions Strongly Disagree	2.5	3.23	0.73
Disagree	10.1	-	-
Agree	48.8	-	-
Strongly Agree	38.5	-	-
Hours per week: Working off-campus None	33.6	4.78	3.02
Less than 1 hour	1.7	-	-

1-2 hours	2.5	-	-
3-5 hours	5.1	-	-
6-10 hours	7.1	-	-
11-15 hours	6.5	-	-
16-20 hours	10.0	-	-
Over 20 hours	33.6	-	-
Contributing money toward Family Needs Not at all	34.5	1.94	0.79
Occasionally	36.9	-	-
Frequently	28.6	-	-
Civic Awareness Score		46.43	7.42

Additional individual survey items were used for this study to better understand students' involvement across campus. As shown in Table 4.2, roughly three out of five vertical transfer students of color (61.9%) reported completing a capstone project as they concluded their undergraduate education. By contrast, less than one-fifth of respondents participated in a racial/ethnic student organization. About a quarter of respondents (25.5%) to this question participated in a preprofessional or departmental club.

Students were asked about the overall frequency of faculty-research projects they were involved in throughout their undergraduate journeys—the response options varied from 0 to 25 or more months of research and faculty engagement. Almost half of the transfers of color (49.8%) did not participate in research projects with faculty. More than one-quarter (26.3%) spent between one and three months engaged with faculty in a research project. Working with faculty on research projects is likely connected to the strong sentiment shared among nearly all students that the institution contributed to developing their research skills during college. Most respondents credited their institution with developing their research abilities, including 48.8% who agreed and 38.5% who strongly agreed with this sentiment. Students were evenly divided between enrolling at public versus private four-year colleges and universities. One variable seemed to distinguish transfer students from other graduating seniors. Roughly one-third of

transfer students of color reported working more than 20 hours per week off-campus, and an equal proportion of vertical transfers who completed the CSS between 2015 and 2019 reported not working any hours in an off-campus job.

Degree Aspirations

Nearly half of transfer students of color in this sample (46.8%) aspired to earn a master's degree. By contrast, roughly one-third (32.0%) expected to conclude their education after completing their bachelor's degree, and more than one-fifth (21.5%) intended to pursue a doctoral degree. The following sections describe outline two-way crosstabulations to demonstrate how rates of aspiring to certain degrees varied by vital independent variables.

Gender. As noted above, this sample population has more women than men in the sample. Considering this, when comparing across gender to see which group had more to graduate aspirations, it is essential to compare within their respective genders to examine the varying responses across survey items. As shown in Table 4.3, men and women aspired to earn doctoral degrees at roughly equal rates (20.0% and 21.8%, respectively). By contrast, significantly more women (48.6%) than men (43.6%) intended to complete a master's degree. Significantly more men (36.4%) than women (29.7%) expected to conclude their education after earning their bachelor's degree. Based on these results, women had a greater likelihood of aspiring to earn graduate and professional degrees than their male peers.

Table 4.3

Frequency distribution of Graduate Degree Aspirations by Gender (N=5,589)

Gender Identity	bachelor's degree aspirants	master's degree aspirants	doctoral aspirants

Men	711 36.4 %	850 43.6 %	390 20.0 %
Women	1079 29.7 %	1767 48.6 %	792 21.8 %
Total	1790 32.0 %	2617 46.8 %	1182 21.1 %

Aspirations by race and ethnicity. Disaggregating the aspirations of transfer students of color by race/ethnicity also revealed significant differences. As presented in Table 4.4, a significantly higher percentage of Latinx students (51.2%) planned to pursue a master's degree than any other racial or ethnic group in the sample. By contrast, students who identified their race/ethnicity as "other" were significantly more likely than other racial/ethnic groups to aspire to earn a doctoral degree (29.9%). Latinx students were the least likely to expect to earn doctoral degrees (18.0%).

Educational expenses: their own income. The distributions seen below are the varying responses of transfers' aspirations contingent upon the amount of personal income they used to finance educational expenses. Overall, the distribution of responses across graduate degree aspirations remained similar for transfers of color. However, one notable exception was found among students who used at least $15,000 or more of their finances to pay for their final year of college. Among these students, 25.5% expected to earn a doctoral degree, which exceeded the rate among students who did not use any of their own resources to pay for college by more than five percentage points (19.5%). This gap may suggest that students who are more financially independent may have a clearer idea of how they might finance their pursuit of advanced degree programs or may already have the resources to do so.

Table 4.4

Frequency distribution of Graduate Degree Aspirations by Race and Ethnicity (N=5,589)

Race/Ethnicity	bachelor's degree aspirants	master's degree aspirants	doctoral aspirants
Native American (n=30)	40.0 %	40.0 %	20.0 %
Asian/Pacific Islander (n=1,101)	40.8 %	41.4 %	17.8 %
Black/African American (n=1,142)	30.2 %	46.7 %	23.1 %
Latinx (n=1,740)	30.7 %	51.2 %	18.0 %
Other Race/Ethnicity (n=234)	32.1 %	38.0 %	29.9 %
Two or more Races/Ethnicities (n=1,362)	28.0 %	47.3 %	24.7 %
Total	32.0 %	46.8 %	21.1 %

Table 4.5
Frequency distribution of Graduate Degree Aspirations by Ed Expenses: Personal Income

Use of Personal Income	bachelor's degree aspirants	master's degree aspirants	doctoral aspirants
none	406 33.4 %	574 47.2 %	237 19.5 %
$1-$2,900	652 31.5 %	982 47.5 %	435 21.0 %
$3,000 to $5,999	315 33.1 %	443 46.5 %	194 20.4 %
$6,000 to $9,999	186 31.8 %	261 44.6 %	138 23.6 %
$10,000 to $14,999	99 31.4 %	153 48.6 %	63 20 %
$15,000 or more	132 29.3 %	204 45.2 %	115 25.5 %
Total	1790 32.0 %	2617 46.8 %	1182 21.1 %

Educational expenses: grants. The distribution provided in Table 4.6 shows the relationship between the amount of grant aid vertical transfer students of color used to pay for their last year of college and their self-reported degree aspirations. Across the various ranges, graduate degree aspirations remained similar for transfers of color. However, one notable exception was found among students who received $15,000 or more in the form of aid to pay for their final year of college. Among these students, 27.2% expected to earn a doctoral degree, exceeding the rate among students who reported receiving less than $15,000 in aid or no aid. Additionally, transfers of color who received $15,000 or more in grant aid to finance their education also reported the lowest amount of master's degree aspirations compared to other groups receiving less financial or no support in aid. This finding may suggest that students who

receive more financial support in aid that does not need to be repaid hold greater prospects toward a doctoral education than master's level preparation. The financial support received through their undergraduate experiences could encourage students to believe that similar support may be available after their undergraduate journeys, thus aspiring toward doctoral degrees, which require more training and years of enrollment as students.

Table 4.6

Amount of Grant Aid Used to Finance Last Year of College by Degree Aspirations (n=5,589)

aid_grants	bachelor's degree aspirants	master's degree aspirants	doctoral aspirants	***Total***
none	399 34.6 %	533 46.2 %	221 19.2 %	1153 100 %
$1-$2,900	214 32.1 %	340 51 %	113 16.9 %	667 100 %
$3,000 to $5,999	327 32.5 %	487 48.4 %	192 19.1 %	1006 100 %
$6,000 to $9,999	286 33.3 %	404 47 %	170 19.8 %	860 100 %
$10,000 to $14,999	235 31.4 %	342 45.7 %	172 23 %	749 100 %
$15,000 or more	329 28.5 %	511 44.3 %	314 27.2 %	1154 100 %
Total	1790 32 %	2617 46.8 %	1182 21.1 %	5589 100 %

Educational expenses: loans. The distribution seen below is the varying responses of transfers' aspirations contingent upon the amount of aid in the form of loans they used to finance educational expenses. Overall, the distribution of responses across graduate degree aspirations remained similar for transfers of color. However, one notable exception was found among students who received $15,000 or more in the form of loans to pay for their final year of college.

Among these students, 21.9% expected to earn a doctoral degree, exceeding the rate among students who reported receiving less than $15,000 in aid or no aid. This finding may suggest that students who receive financial support in loans that do not need to be repaid hold greater prospects toward a doctoral education than that of master's level preparation, similar to other forms of finances used for their education.

Table 4.7

Use of Loans to Pay for the Last Year of College by Degree Aspirations (N=5,589)

Amount of Aid from Loans	bachelor's degree aspirants	master's degree aspirants	doctoral aspirants	***Total***
none	621 33.4 %	840 45.2 %	396 21.3 %	1857 100 %
$1-$2,900	98 35.4 %	121 43.7 %	58 20.9 %	277 100 %
$3,000 to $5,999	194 34 %	254 44.6 %	122 21.4 %	570 100 %
$6,000 to $9,999	190 33.1 %	266 46.3 %	118 20.6 %	574 100 %
$10,000 to $14,999	177 27.6 %	342 53.3 %	123 19.2 %	642 100 %
$15,000 or more	510 30.6 %	794 47.6 %	365 21.9 %	1669 100 %
Total	1790 32 %	2617 46.8 %	1182 21.1 %	5589 100 %

Academic self-concept. Academic self-concept is a measure that captures students' self-perception and confidence to succeed academically. After the continuous measure was recoded into three distinct group scores to categorize scores into high, medium, and low groups, the recoded variable was crosstabulated across other variables to see how much academic self-

perceptions varied by controlled variables in the final model of analysis. For example, the recoded measure of transfers engaged with faculty research projects shows how students who reported higher levels of academic self-concept also participated in faculty-research projects at higher rates.

Table 4.8

Frequency Distribution of Academic Self-Concept Grp by Faculty-Research Project Engagement (N=5,589)

Level of Academic Self-Concept	Months Working on Faculty Research	
	None	1 to 25+ months
Low (1,776)	52.9 %	47.1 %
Average (2,230)	49.8 %	50.2 %
High (1,583)	46.2 %	53.8 %
Total	49.8 %	50.2 %

Crosstabulations also revealed differences in students' level of academic self-concept and their graduate degree aspirations. Table 4.9 shows that vertical transfer students with the highest levels of confidence in their academic abilities are much more likely to aspire to doctoral degrees (28.9%) compared to their peers with moderate (20.9%) or low levels (16.1%) of academic self-concept. Those who fell within the lowest category of self-academic perception tended to be much more likely to report aspirations for bachelor's degrees (38.1%) compared to those with moderate (30.9%) or high (26.1%) levels of academic self-concept.

Table 4.9

Frequency Distribution of Academic Self Concept by Graduate Degree Aspirations (N=5,589)

CSS Academic Self-Concept Group	*newdegasp* Bachelor's Degree Aspirants	Master's Degree Aspirants	Doctoral Degree Aspirants	***Total***
Low	712 38.1 %	855 45.8 %	300 16.1 %	1867 100 %
Average	751 30.9 %	1174 48.3 %	508 20.9 %	2433 100 %
High	337 26.1 %	579 44.9 %	373 28.9 %	1289 100 %
Total	1800 32.2 %	2608 46.7 %	1181 21.1 %	5589 100 %

Hierarchical Generalized Linear Models

This section describes the multivariate Hierarchical Generalized Linear Model results that directly address this study's research questions. Separate HGLMs were run for each operationalization of degree aspirations: transfer students of color's master's degree aspirations (versus bachelor's degree aspirations); doctoral degree aspirations (versus bachelor's degree aspirations); and a final comparison between master's degree and doctoral degree aspirants. The analysis was run using "R," a freeware programming language and environment dedicated to statistical analyses and the development of sophisticated graphics and other data visualization techniques.

Model Development Process

As described in Chapter 3, the model development process for each HGLM was situated around Jain and colleague's (2011) concept of a transfer receptive culture, with the support of the vend diagram introduced within Laanan and Jain's (2016) piece on utilizing a critical framework

for community college transfer student research. Variables, factor scores, and CIRP constructs were added to the model in the order that followed Laanan and Jain's (2016) figure while contextualizing its experiences around Jain and colleagues' (2011) model for transfer receptive culture. The model was developed in blocks, a step-by-step model development to see how each concept or unit of analysis measuring transfer receptive culture (Jain et al., 2011) impacted the graduate degree aspirations for transfer students of color.

Once the researcher determined all variables would be used in the model, items were entered at multiple steps beginning with a null model (or model with no variables). Each of the null models resulted in a significant between-group error term, which justified using a multilevel approach. Items being entered at multiple steps were done to see which model had results with values that could determine a reasonable fit for interpretations. Statistical tests utilized to determine a good fit for interpretation were AIC and log-likelihood values (Finch et al., 2014). AIC and log-likelihood values are used for logistic regression-based models to provide diagnostics used to determine which models best fit the data (Finch et al., 2014). As variables get added to the model, researchers track the absolute values of the AIC and log-likelihood statistics. If the absolute values of these statistics reduce (or move closer to zero), the more specified models (i.e., those with additional measures) are assumed to provide a better fit of the data than the less specified model. Once final models were established, portions of the models were rerun, where individual variables were entered one at a time to better understand the contributors to changes in regression coefficients elsewhere in the model. These additional analyses provided insight into how predictors might indirectly affect the degree aspirations of vertical transfer students of color.

Checking for Multicollinearity

Collinearity diagnostics were performed to determine if multicollinearity issues were present with my final analyses. Multicollinearity occurs when there are high intercorrelations among two or more independent variables within a multiple regression model (Kim, 2019). If multicollinearity is present within any of the models, this may lead to wider confidence intervals that, in turn, produce less reliable probabilities; this, in turn, impacts the effect of independent variables in a model (Kim, 2019). Researchers must be wary of high multicollinearity present within their models. This may lead to misinterpretation of results and ultimately result in inaccurate discussions and implications for practitioners, researchers, and policymakers.

Variation Inflation Factors (VIF) were used to determine the strength of relationships found between the study's independent variables (Kim, 2019). Kim (2019) suggests that independent variables holding VIFs between five and ten should proceed with caution with interpreting results. After running performance tests to check for multicollinearity, all independent variables had a VIF within acceptable ranges (See Appendix A).

Explaining Odds Ratios

Like logistic regression, HGLM results are often reported as odds ratios. Odds ratios greater than 1 represent an increased likelihood of the outcome occurring as values on the independent variable increase. By contrast, odds ratios with a value below one corresponds to decreases in the likelihood of the outcome as values on the independent variable increase.

Predicting Master's Degree Aspirations versus Bachelor's Degree Aspirations

The model that observed master's degree aspirants utilized 4,040 observations total for this first HGLM sample. This is because the total number of respondents for the recoded master's degree variable compared to baccalaureate aspirants had 4,040 respondents.

Additionally, 142 institutions of the 152 total institutions of the sample were examined across this HGLM. The 142 institutions used are based on the responses of bachelor's and master's aspirants. The null model, which is the same as running an ANOVA with the institution identifier serving as the between-group indicator, resulted in a statistically significant between-group error term, which suggests that significant variation between colleges and universities exists in the extent to which vertical transfer students aspired to master's degrees relative to bachelor's degrees. Given this significant between-institution variance component, the analyses proceeded with the HGLM approach. After following the model development process described above, the researcher determined that the final version of the model (The model that included all variables for consideration in this study) provided the best fit for the data relative to the less specified models. The table below shows AIC and LogLik values for the null, first, second, second to last, and final models.

Table 4.10

Model Diagnostics for HGLM Predicting Master's Aspirations versus Bachelor Degree Aspirations (N=4,040)

	AIC	LogLik	p-value
Null Model	5403.2	-2690.6	
Demographics	5390.8	-2676.7	
Institutional Characteristics	5389.5	-2674.4	
All Academic Experiences	5304.0	-2606.2	
Final Model	5302.4	-2606.0	p<0.001

Campus-climate measures. In addressing this study's first research question for master's aspirants, items in the model that were used to measure campus climate's relationship to degree aspirations included: campus racial tension, general interpersonal validation, academic validation in the classroom, and satisfaction with on-campus support services. For this first

model, the factor for academic validation in the classroom was the only significant climate-related contributor in predicting master's degree aspirations for transfers of color. Table 4.11 provides the full set of predictors and corresponding odds ratios and significance values.

***Academic validation in the classroom*.** Academic validation, a latent variable intended to measure students' validating experience with faculty in the classroom, positively predicted whether vertical transfer students of color aspired to earn master's degrees. Students who more frequently had positive experiences in the classroom were also significantly more likely to aspire toward a master's degree than no graduate education.

***Campus Racial Tension*.** The measure that examined transfers' experiences with a hostile campus racial climate was not significant for this model examining master's aspirants against bachelor's aspirants; however, as is discussed later in this chapter, campus racial tension did significantly predict aspirations for doctoral degrees (relative to both master's and bachelor's degree aspirations). Though a positive predictor in the model that contributed toward greater odds for master's aspirations, its non-significance ($p<0.1$) suggests that transfers experiences with racism and discrimination were not an important factor in determining how master's aspirations varied across college campuses. With regard to campus climate impacting master's aspirations, findings from this study suggest that experiences with a hostile campus racial climate did not play a major role in determining their intent to pursue a master's degree. This model provides greater nuance in answering research question two.

Other individual and institutional measures predicting master's degree aspirations versus bachelor's aspirations. This study's second question related to other background and college experience measures that accounted for differences in the likelihood transfer students of

color aspired toward graduate education. The findings below continue to highlight results for master's aspirants against baccalaureate degree seekers.

Gender. The positive coefficient associated with gender indicates that vertical transfer students of color who identified as women had significantly greater odds compared to men intending to pursue a master's degree rather than expecting not to attend any type of graduate program. This gap in odds is seen through the odds ratio value of 1.42, indicating that transfer women of color were 1.42 times as likely as men to aspire toward a master's degree rather than no postbaccalaureate program.

Major GPA. The positive coefficient associated with students' major GPA indicates that vertical transfer students of color who self-reported higher grades among courses in their major had significantly greater odds of intending to pursue a master's degree compared to those who self-reported lower GPAs. The odds ratio of 1.09 means that vertical transfer students who reported earning A's or A+'s in their academic major were 1.09 times as likely as their peers who reported earning A- 's in their academic major to aspire to earn a master's degree relative to a bachelor's degree.

Educational expenses: loans. The positive coefficient associated with students pulling out anywhere between $10,000 and $14,999 to pay for their education were significantly more likely to intend to pursue master's degrees compared to all other students. More specifically, the odds ratio of 1.40 suggests that students who relied on between $10,000 and $14,999 in loans to finance their senior year of college were roughly 1.40 times as likely to want a master's degree compared to students who did not take out any loans.

Capstone projects. The positive coefficient associated with students' involvement with a culminating experience for their degree (e.g., capstone course/project, thesis, comp exam)

indicates that vertical transfer students of color who completed a capstone project of some sort held greater odds of wanting to enroll in a master's graduate program compared to those who did not participate, complete, or pursue a capstone project. Specifically, capstone project completers were 1.16 times as likely to have graduate program aspirations as transfer students who did not have a capstone project as a culminating experience.

Habits of mind CIRP construct. The CIRP construct for habits of mind is a measure of students' behaviors and traits that have been known to be associated with academic success in college. Transfer students of color who more frequently engaged in behaviors associated with academic success within their senior years were significantly more likely to expect to obtain a master's degree than those who demonstrated lower rates of engaging in these academic behaviors that are seen as the foundation for lifelong learning.

Participation in a preprofessional or departmental club. The positive coefficient associated with participation in a preprofessional or departmental club indicates that vertical transfer students of color who participated in such student organization had significantly greater odds of intending to pursue a master's degree program compared to students who did not participate in a preprofessional or departmental clubs. Participants were 1.24 times as likely as those not involved within these organizations to have master's degree aspirations versus intentions to stop after earning a bachelor's degree.

Hours per week working off-campus. The positive coefficient associated with students' self-report of the number of hours they work a week off-campus indicates that vertical transfer students of color who worked more hours per week off-campus hold significantly greater odds of intending to pursue a master's degree compared to those who report working fewer hours off-campus on a weekly basis. This finding is also corroborated descriptively. Those working more

off-campus may already be more established in a job/career and thus would be using the master's degree pathway as a way to more quickly advance their careers. By contrast, students not working as much off campus may be less solidified/established in a particular career path and therefore more open/likely to pursue a doctoral degree relative to a master's.

Table 4.11

Frequency distribution of Hours Per Week Working Off-Campus by Degree Aspirations

	newdegasp			
hpw_offcampus	bachelor's degree aspirants	master's degree aspirants	doctoral aspirants	***Total***
None	633 33.7 %	816 43.4 %	431 22.9 %	1880 100 %
Less than 1 hour	34 37.8 %	33 36.7 %	23 25.6 %	90 100 %
1-2 hours	53 38.7 %	48 35 %	36 26.3 %	137 100 %
3-5 hours	95 32.9 %	140 48.4 %	54 18.7 %	289 100 %
6-10 hours	126 32.5 %	187 48.2 %	75 19.3 %	388 100 %
11-15 hours	127 34 %	168 44.9 %	79 21.1 %	374 100 %
16-20 hours	159 28.7 %	277 50 %	118 21.3 %	554 100 %
Over 20 hours	563 30 %	948 50.5 %	366 19.5 %	1877 100 %
Total	1790 32 %	2617 46.8 %	1182 21.1 %	5589 100 %

Table 4.12

HGLM Results Predicting Master's Aspirations versus Bachelor's Degree Aspirations (N=4,040)

Predictors	Odds Ratios	P-Values	
(Intercept)	0.09	0.001	
Demographic Characteristics			
Gender (Male, Female)	1.40	0.001	***
LGBTQ+ (Hetero, LGBTQ+ Identifying)	1.01	0.889	
Institutional Characteristics			
Institutional Control (Public, Private)	1.12	0.275	
Institutional Type (4 yr college, 4 yr uni)	0.88	0.274	
Campus Selectivity	1.00	0.956	
Academic Performance			
Major GPA	1.08	0.001	***
Educational Expenses: Personal Income, Loans, and Grants			
Ed Expenses: My own income $1 to $2,999	1.00	0.972	
Ed Expenses: My own income, $3,000 to $5,999	0.94	0.557	
Ed Expenses: My own income, $6,000 to $9,999	0.94	0.616	
Ed Expenses: My own income, $10K to $14,999	1.02	0.893	
Ed Expenses: My own income, $15K or more	0.93	0.619	
Ed Expenses: Grants, $1 to $2,999	1.15	0.243	
Ed Expenses: Grants, $3,000 to $5,999	1.16	0.159	
Ed Expenses: Grants, $6,000 to $9,999	1.03	0.793	
Ed Expenses: Grants, $10K to $14,999	0.95	0.659	
Ed Expenses: Grants, $15K or more	1.06	0.595	
Ed Expenses: Loans, $1 to $2,999	0.84	0.265	
Ed Expenses: Loans, $3,000 to $5,999	0.91	0.452	
Ed Expenses: Loans, $6,000 to $9,999	1.02	0.840	
Ed Expenses: Loans, $10K to $14,999	1.40	0.005	**
Ed Expenses: Loans, $15K or more	1.00	0.970	
Academic Experiences: University Support			
Satisfaction with On-Campus Services and Support	1.00	0.908	
Academic Experiences: Institutional Stigmatization of Transfer Students			
Campus Racial Tension	1.02	0.701	
Academic Self-Concept Score	1.00	0.292	
Academic Experiences: General Perceptions and Experiences with Faculty			
Academic Validation in the classroom	1.14	0.006	**
General Interpersonal Validation on Campus	0.99	0.753	
Academic Experiences: Courses			
Capstone (No, Yes)	1.16	0.041	*
Academic Experiences: Course Learning			
CSS Habits of Mind Score	1.01	0.001	***

Social Experiences: Engagement and Involvement			
Participation: Racial/Ethnic Org (No, Yes)	1.17	0.108	
Participation: Preprofessional or Dept. Club (No, Yes)	1.24	0.013	*
Research Collaboration with Faculty	1.09	0.221	
Research Ability developed by Institutions	0.96	0.459	
Hours per week: Working off-campus	1.04	0.002	**
Contributing money toward Family Needs	1.07	0.107	
Civic Awareness Score	1.03	0.530	
N ace		142	

Note: *** p<0.001; **p<0.01; *p<0.05

Predicting Doctoral Aspirations versus Bachelor's Degree Aspirations

The model that observed master's degree aspirants utilized 2,717 observations from the 5,589 students of the total sample. This is because the total number of respondents for the recoded doctoral degree aspirations variable compared to baccalaureate aspirants had 2,717 respondents enrolled at 139 institutions. The null model resulted in a significant random error parameter at the institutional level, which indicated significant variation in doctoral degree aspirations across institutions; therefore, the analyses proceeded with both student- and institution-level predictors. Fit indices were examined at each level the variables were entered; the final model ("Final Model" read below) held the lowest AIC and LogLik values while being significantly different than prior models.

Table 4.13

Model Diagnostics for HGLM Predicting Doctoral Aspirations versus Bachelor Degree Aspirations (N=2,717)

	AIC	LogLik	p-value
Null Model	3524.7	-1751.3	
Demographics	3507.4	-1735.7	
Institutional Characteristics	3512.9	-1735.4	
All Academic Experiences	3207.3	-1558.6	
Final Model	3146.3	-1539.1	p<0.001

The model for doctoral degree aspirations had 11 significant predictors that explained differences in the likelihood of aspiring to earn a doctoral degree (Ph.D., M.D., Ed.D., D.D.O) among vertical transfer students of color. Of these 11 predictors, ten variables had positive associations with the outcome, whereas only one measure seemed to significantly detract from students' aspirations to earn doctoral degrees.

General interpersonal validation. General interpersonal validation, a latent variable intended to measure students' general validating experience across campus, positively predicted whether vertical transfer students of color aspired to earn doctoral degrees. Transfers of color are more likely to aspire toward a doctoral degree when they feel a stronger sense of validation across their respective institutions.

Academic validation in the classroom. Receiving more frequent validation from faculty corresponded with vertical transfer students being more likely to aspire to doctoral degrees rather than bachelor's degrees; however, as shown in Table 4.14, this effect became nonsignificant after accounting for the frequency that students used Habits of Mind for lifelong learning. Students who received more frequent validation from faculty were also more likely to frequently engage in healthy habits of mind for lifelong learning, and these learning activities fully accounted for the predictive power of faculty validation on degree aspirations.

Campus racial tension. Campus racial tension is a factor that was created to measure the extent to which students directly experienced or perceived discrimination due to race and/or other social identity characteristics. The students in this sample identified as non-white, and the highest loading for this factor asked students if they have felt discriminated against because of their race, gender, sexual orientation, disability status, or religion (loadings=0.742) (See Table 3.3). Given how this item is driving the factor, higher scores in this area may likely correspond to more frequent experiences of racism and discrimination related to their minoritized status as a person of color or other marginalized social identities.

The campus racial tension factor score was a significant predictor associated with the outcome to contribute to greater odds of aspiring toward a doctoral degree for transfer students of color. The odds ratio was 1.13 with a $p<.05$ (See Table 4.14). This finding signals the inherent tensions students of color must face across colleges and universities. The reality of their marginalized identities is strong and acknowledged amongst the student of color body; it would appear that their negative perceptions toward their campus climate contribute to their aspirations of pursuing a doctoral degree. This finding will be further explored in Chapter 5.

Gender. Women in the sample reported intentions to pursue doctoral degrees at significantly higher rates than men, even after accounting for all other predictors in the model. The odds ratio of 1.47 for the dichotomous measure for gender suggests that women transfer students of color are 1.47 times as likely as their male counterparts to expect to earn a doctoral degree relative to aspiring to no postbaccalaureate credential, controlling for other measures in the model.

The parameter estimates for gender varied throughout the development of the model; as other variables entered the model, the gap between men and women relative to their aspirations

for a doctoral degree expanded at several steps. Specifically, suppressor effects occurred at three different steps of the conceptual model. To ensure which effects were contributing to the inflation of odds ratio for gender, the model was re-run to introduce each new variable one by one to determine which variables contributed to the observed suppressor effects. One notable suppressor occurred at the eighth step of the statistical model. The suppressor occurs when habits of mind are introduced into the model (odds ratio for gender increased from 1.39 o 1.46, $p<0.001$). Bivariate correlations were run to assist in the interpretation of this suppressor. Both gender and habits of mind were positively correlated to the outcome and positively correlated. This means that the gender gap among vertical transfer students in terms of their doctoral degree aspirations would be even larger if women did not engage in behaviors linked to academic success at the same rate as their male counterparts.

Table 4.14

HGLM Results Predicting Doctoral Aspirations versus Bachelor's Degree Aspirations (N=2,717)

Predictors	Odds Ratios	P-Values
(Intercept)	0.00	**<0.001**
Demographic Characteristics		
Gender (Male, Female)	1.47	**<0.001**
LGBTQ+ (Hetero, LGBTQ+ Identifying)	1.28	0.055
Institutional Characteristics		
Institutional Control (Public, Private)	0.80	0.087
Institutional Type (4 yr college, 4 yr uni)	0.84	0.284
Campus Selectivity	0.99	0.753
Academic Performance		
Major GPA	1.04	0.138
Educational Expenses: Personal Income, Grants, and Loans		
Ed Expenses: My own income $1 to $2,999	1.17	0.215
Ed Expenses: My own income, $3,000 to $5,999	1.05	0.75
Ed Expenses: My own income, $6,000 to $9,999	1.26	0.172
Ed Expenses: My own income, $10K to $14,999	1.06	0.794

Ed Expenses: My own income, $15K or more	1.30	0.164
Ed Expenses: Grants, $1 to $2,999	1.01	0.975
Ed Expenses: Grants, $3,000 to $5,999	1.16	0.318
Ed Expenses: Grants, $6,000 to $9,999	0.98	0.877
Ed Expenses: Grants, $10K to $14,999	1.21	0.219
Ed Expenses: Grants, $15K or more	1.51	**0.003**
Ed Expenses: Loans, $1 to $2,999	1.08	0.713
Ed Expenses: Loans, $3,000 to $5,999	1.04	0.819
Ed Expenses: Loans, $6,000 to $9,999	0.92	0.605
Ed Expenses: Loans, $10K to $14,999	0.97	0.869
Ed Expenses: Loans, $15K or more	0.92	0.485
Academic Experiences: University Support		
Satisfaction with On-Campus Services and Support	1.03	0.597
Academic Experiences: Institutional Stigmatization of Transfer Students		
Campus Racial Tension	1.13	**0.017**
Academic Self-Concept Score	1.02	**<0.001**
Academic Experiences: General Perceptions and Experiences with Faculty		
Academic Validation in the classroom	1.02	0.724
General Interpersonal Validation on Campus	1.14	**0.041**
Academic Experiences: Courses		
Capstone (No, Yes)	1.09	0.356
Academic Experiences: Course Learning		
CSS Habits of Mind Score	1.04	**<0.001**
Social Experiences: Engagement and Involvement		
Participation: Racial/Ethnic Org (No, Yes)	1.32	**0.018**
Participation: Preprofessional or Dept. Club (No, Yes)	1.97	**<0.001**
Research Collaboration with Faculty	1.19	0.053
Research Ability developed by Institutions	1.20	**0.009**
Hours per week: Working off-campus	0.99	0.42
Contributing money toward Family Needs	1.18	**0.005**
Civic Awareness Score	0.87	**0.009**
N ace		139
Observations		2717

Table 4.15

Highlighting Normal and Suppressor Effects of Key Variables in Doctoral Aspiration versus Bachelor's Aspiration Predictive Model (N=2,717)

	Block 7		Block 8	
Predictors	Odds Ratios	p	Odds Ratios	p
(Intercept)	0.06	**<0.001**	0.01	**<0.001**
Gender: Women	1.39	**<0.001**	1.46	**<0.001**
Academic Validation in the Classroom	1.14	**0.030**	1.04	0.510
General Interpersonal Validation on Campus	1.22	**0.001**	1.20	**0.004**
Senior capstone project	1.27	**0.010**	1.18	0.077
CSS Habits of Mind Score			1.04	**<0.001**
N	139 ace		139 ace	
Observations	2717		2717	

Educational expenses: **grants.** The positive coefficient associated with students receiving $15,000 or more in aid to finance their education provides greater odds toward doctoral aspirations than expecting not to attend any type of graduate program. This gap in odds is seen through the odds ratio value of 1.52, indicating that transfers of color who relied on at least $15,000 in grants to pay for their final year of college were 1.52 times as likely to want a doctoral degree compared to their counterparts who did not use any grant aid to pay for their senior year of college.

Academic self-concept. The CIRP construct for Academic self-concept measures students' self-perception of confidence in their abilities to succeed academically in college. Transfer students of color who had greater perceptions of themselves intellectually during their

senior years were slightly more likely to pursue a doctoral degree than those who demonstrated lower rates of intellectual self-confidence (odds ratio = 1.02, $p<0.001$).

Habits of mind. The CIRP construct for habits of mind is a measure of students' behaviors and traits that have been known to be associated with academic success in college. Transfer students of color who demonstrated greater efforts within their past senior years were slightly more likely to want to pursue a doctoral degree than those who demonstrated lower rates of engaging in these academic behaviors that are seen as the foundation for lifelong learning (odds ratio = 1.04, $p<0.001$).

Racial or ethnic student organization involvement. The positive coefficient associated with participation in a racial or ethnic student organization indicates that vertical transfer students of color who participated in such student organization had significantly greater odds of pursuing a doctoral degree than students who did not participate in a preprofessional or departmental clubs. Participants were 1.29 ($p<0.05$) times as likely as those not involved within these organizations to have doctoral degree aspirations.

Preprofessional or departmental club participation. The positive coefficient associated with participation in a preprofessional or departmental club indicates that vertical transfer students of color who participated in such student organization had significantly greater odds of intending to pursue a doctoral degree program compared to students who did not participate in a preprofessional or departmental clubs. Participants were nearly twice as likely (odds ratio = 1.97, $p < 0.001$) than their counterparts not involved within these organizations to have doctoral degree aspirations.

Perceived research ability developed by institutions. Two different items related to undergraduate research predicted doctoral degree aspirations among transfer students of color.

One remained significant that provided greater odds of pursuing a doctoral degree than not wanting to pursue any program. As shown in the descriptive section of this chapter, most respondents credited their institution with contributing to the development of their research skills. The multivariate model predicting doctoral degree aspirations demonstrated that this sentiment positively correlated with transfer students' likelihood of intending to earn a doctoral degree (odds ratio = 1.20, $p < 0.01$).

Contributing money toward family needs. Students' ability to provide some level of financial support for their families was a positive association with transfers of color's aspirations toward a doctoral degree. Specifically, as the frequency of students' contributions of financial support to their families increased, they also became more likely to report doctoral degree aspirations (odds ratio = 1.18, $p < 0.01$). This finding may suggest that students who have the financial stability to support their families may have a clearer vision of the importance and/or the strategy about pursuing advanced education.

Civic awareness. The CIRP construct for civic awareness is a construct that measures students' understanding of issues facing their community, the nation, and the world. Transfer students of color who finished college with greater awareness of the critical issues facing their communities tended to be significantly less likely to have plans to pursue a doctoral degree.

Predicting Doctoral Degree Aspirations versus Master's Degree Aspirations

The model that observed the comparison of master's degree aspirants against doctoral degree aspirants utilized 3,477 observations. This is because the total number of respondents for the recoded doctoral degree aspirations variable compared to master's aspirants had 3,477 respondents. Additionally, 141 institutions were examined across this HGLM. The null model resulted in a significantly varying level-2 error component, suggesting the importance of a

multilevel model that accounted for between-institution effects. The table below provides the model fit statistics for the null and final models, showing significant improvement in model fit with variables included at levels one and two. The final model retained better AIC and LogLik values than all prior iterations of the model as it was being developed.

Table 4.16

Model Fit Diagnostics for HGLM Predicting Doctoral versus Master's Degree Aspirations (N=3,477)

	AIC	LogLik	p-value
Null Model	4283.0	-2130.5	
Demographics	4280.4	-2120.0	
Institutional Characteristics	4276.0	-2119.2	
All Academic Experiences	4087.0	-1998.5	
Final Model	4079.7	-1993.8	p<0.001

Findings for this last model had similar significant results to that of the model that observed doctoral degree aspirations only. All significant items in Table 4.17 had similar significance values, and odds ratios to the model discussed prior. This final model of variables contributed or detracted from students' intentions to pursue doctoral degrees relative to master's degrees. Master's aspirants were coded as lower for this variable, leaving doctoral degree aspirations the higher coded value in the model. The following results section will only highlight additional (significant) items in this last model.

Campus climate considerations For this model, the factors of academic validation in the classroom, general interpersonal validation, and the campus racial tension factor were all significant predictors in determining how the campus climate experiences of transfers of color impacted graduate degree aspirations.

***Academic validation in the classroom*.** Academic validation in the classroom captures students' validating experiences when interacting with faculty and students during course lectures. When comparing doctoral aspirants with master's aspirants, academic validation in the classroom detracted students from wanting a doctoral degree. This finding parallels the first model observed in Table 4.17, where academic validation served as a positive indicator that increased the odds of master's aspirations for transfers of color compared to not wanting to pursue any graduate education. For this model in Table 4.17, students were less likely ($exp(B)=0.86$, $p<0.01$) to want a doctoral degree in comparison to a master's when students more frequently felt validated in the classroom.

General interpersonal validation. General interpersonal validation, a latent variable intended to measure students' general validating experience across campus, positively predicted whether vertical transfer students of color aspired to earn doctoral degrees. Transfers of color were significantly more times likely ($p<0.001$) to aspire toward a doctoral degree than a master's degree when they felt a sense of validation across campus within their respective institutions.

Campus racial tension. Campus racial tension is a factor that was created to measure the amount of racism and discrimination students experience on college campuses. Like the model presented in Table 4.14, experiences with racism and discrimination contributed to the odds of wanting a doctoral degree in comparison to a master's degree ($exp(B)=1.11$, $p<0.05$).

Other key predictors of doctoral aspirations versus master's aspirations. Beyond the campus climate measures, several independent variables significantly predicted vertical transfer students' aspirations for doctoral degrees relative to master's degrees.

LGBTQ+ transfers of color. Among respondents with graduate degree aspirations, students who identified as being a member of the LGBTQ+ community were 1.35 times as likely

to aspire to a doctoral degree (relative to a master's degree) as heterosexual students ($p<0.01$). Whereas no differences in sexual orientation emerged when examining the likelihood of pursuing a doctoral degree versus no graduate degree or a master's degree and no graduate degree, this finding makes clear that, among vertical transfer students who intend to pursue graduate school, LGBTQ+-identified students have a greater likelihood of intending to pursue a doctoral degree while heterosexual students are more likely to aspire to earn a master's degree. An elaboration of this finding will be discussed in chapter five.

***Educational expenses: personal income*.** Having a greater reliance on students' income to finance college seems to contribute to graduate degree aspirants' ambitions. Specifically, students who used between $6,000 and $9,999 thousand ($exp(B)=1.36$, $p<0.05$) or more than $15,000 ($exp(B)=1.44$, $p<0.05$) of their own income to finance their senior year of college corresponded with being significantly more likely to have plans for earning a doctoral degree rather than a master's degree compared to their peers who did not spend any of their own resources to pay for the last year of college.

Institutional control. Being enrolled in a public institution seemed to detract transfer students from aspiring toward a doctoral degree more than a master's degree ($exp(B)=0.79$, $p<0.05$). Based on this, enrollment in private universities has a greater impact on supporting doctoral aspirations for transfer students of color.

***Educational expenses: grants*.** The positive coefficient associated with students receiving $15,000 or more in aid to finance their education provides greater odds toward doctoral aspirations than pursuing a master's degree. This gap in odds is seen through the odds ratio value of 1.36, indicating that transfers of color who used more than $15,000 in grant aid to pay for

their last year in college were 1.36 times as likely to want a doctoral degree instead of a master's compared to their counterparts who did not use any grant aid.

Educational expenses: loans. Having a greater reliance on loans seems to have diminished graduate degree aspirants' ambitions. While loans were not direct deterrents to wanting to pursue graduate education in either of the first two models, the results suggest that having relied more heavily on loans within the range of $10,000 to $14,999 to pay for the final year of college corresponded with being less likely to have plans for earning a doctoral degree rather than a master's degree (odds ratio = 0.96, $p < 0.05$).

Preprofessional and departmental student clubs. The positive coefficient associated with participation in a preprofessional or departmental club indicates that vertical transfer students of color who participated in such student organization had significantly greater odds of intending to pursue a doctoral degree program compared to students who did not participate in a preprofessional or departmental clubs. Participants were nearly twice as likely (odds ratio = 1.72, $p < 0.001$) to intend to pursue a doctoral degree than a master's when involvement in these organizations occurred. Given the latter two models (Tables 4.13 and 4.17), involvement in preprofessional or departmental clubs for transfers of color significantly contributes to greater odds of wanting a doctorate degree than any other type of graduate experience.

Amount of hours working off-campus per week. The negative coefficient associated with students' self-report of the number of hours they work a week off-campus indicates that vertical transfer students of color who worked more hours per week off-campus hold significantly lesser odds of intending to pursue a doctoral degree compared to those who report working fewer hours off-campus on a weekly basis. The odds ratio for this coefficient was 0.95, indicating that transfers of color were less likely to mark their interest in a doctoral education if

they worked more hours off-campus than those who worked less. More hours working off-campus is associated with students wanting to prefer a master's degree compared to a doctoral program. This also mirrors the finding that off-campus work corresponded to greater odds of aspiring to a master's degree relative to a bachelor's degree; it seems like vertical transfer students who work more hours off-campus are being practical with their educational plans – perhaps already recognizing how an advanced degree can help them earn more/advance more quickly within their careers.

Civic awareness. The CIRP construct for civic awareness is a construct that measures students' understanding of issues facing their community, the nation, and the world. Transfer students of color who demonstrated greater efforts within their past senior years to be civically engaged during college were less likely ($exp(B)=0.87$, $p<.01$) to want to pursue a doctoral degree and see a master's degree as a more viable option. It would seem that students who are more aware of issues facing their community, nation, and the world have greater intentions to pursue a master's degree. In the first model (Table 4.17), where master's degree aspirers were of the highest value, civic awareness was a predictor that contributed to the odds of wanting a master's degree. The variable was close to reaching significance with a p-value of 0.53.

Table 4.17

Results from the HGLM Predicting Doctoral Aspirations versus Master's Degree Aspirations (N=3,477)

Predictors	Odds Ratios	P-Values
(Intercept)	0.02	**<0.001**
Demographic Characteristics		
Gender (Male, Female)	1.07	0.397
LGBTQ+ (Hetero, LGBTQ+ Identifying)	1.35	**0.008**
Institutional Characteristics		
Institutional Control (Public, Private)	0.79	**0.039**
Institutional Type (4 yr college, 4 yr uni)	0.85	0.161
Campus Selectivity	0.96	0.251
Academic Performance		
Major GPA	0.97	0.199
Educational Expenses: Personal Income, Grants, and Loans		
Ed Expenses: My own income $1 to $2,999	1.22	0.074
Ed Expenses: My own income, $3,000 to $5,999	1.12	0.386
Ed Expenses: My own income, $6,000 to $9,999	1.36	**0.041**
Ed Expenses: My own income, $10K to $14,999	1.01	0.942
Ed Expenses: My own income, $15K or more	1.44	**0.026**
Ed Expenses: Grants, $1 to $2,999	0.80	0.13
Ed Expenses: Grants, $3,000 to $5,999	0.91	0.476
Ed Expenses: Grants, $6,000 to $9,999	0.94	0.631
Ed Expenses: Grants, $10K to $14,999	1.18	0.24
Ed Expenses: Grants, $15K or more	1.36	**0.012**
Ed Expenses: Loans, $1 to $2,999	1.24	0.26
Ed Expenses: Loans, $3,000 to $5,999	1.05	0.731
Ed Expenses: Loans, $6,000 to $9,999	0.85	0.264
Ed Expenses: Loans, $10K to $14,999	0.68	**0.005**
Ed Expenses: Loans, $15K or more	0.89	0.255
Academic Experiences: University Support		
Satisfaction with On-Campus Services and Support	1.01	0.817
Academic Experiences: Institutional Stigmatization of Transfer Students		
Campus Racial Tension	1.11	**0.023**
Academic Self-Concept Score	1.02	**<0.001**
Academic Experiences: General Perceptions and Experiences with Faculty		
Academic Validation in the classroom	0.86	**0.009**
General Interpersonal Validation on Campus	1.20	**0.001**

Academic Experiences: Courses		
Capstone (No, Yes)	0.95	0.512
Academic Experiences: Course Learning		
CSS Habits of Mind Score	1.02	**<0.001**
Social Experiences: Engagement and Involvement		
Participation: Racial/Ethnic Org (No, Yes)	1.17	0.121
Participation: Preprofessional or Dept. Club (No, Yes)	1.72	**<0.001**
Research Collaboration with Faculty	1.10	0.217
Research Ability developed by Institutions	1.26	**<0.001**
Hours per week: Working off-campus	0.95	**0.001**
Contributing money toward Family Needs	1.08	0.122
Civic Awareness Score	0.87	**0.002**
N ace		141
Observations		3477

Conclusion

The three models examined above demonstrate how the odds impact graduate degree aspirations vary when controlling and comparing for a specific type of graduate educational experience (or no postbaccalaureate experience). The importance of institutional financial support, campus climate experiences, and extra-curricular involvement across institutions appeared to significantly predict graduate aspirations. With regard to institutional characteristics, the campus context did not seem to matter in distinguishing between students who want to pursue graduate study versus those who do not; however, institutional control served to differentiate between master's and doctoral aspirants among respondents who planned to pursue graduate study. Those attending private institutions were more likely to aspire to earn a doctoral degree relative to a master's degree. Forms of validation on campus were consistent predictors along with the campus racial tension factor that examined a hostile campus racial climate. Capstone projects and institutional support for scholar/researcher development amongst their students were also significant predictors that contributed to odds toward graduate education. A more critical interpretation of these findings related to the literature and frameworks of this study is discussed in chapter five.

CHAPTER FIVE: DISCUSSION

This study aimed to identify how institutional characteristics, experiences with and perceptions of campus climate, and students' engagement with curricular and cocurricular activities correlate with the graduate degree aspirations for transfer students of color at the end of their senior year in college. To account for the nested structure of the data, with students clustered within institutions, the study utilized a multilevel, mixed-effects model to analyze five waves of data on graduating seniors who had completed the College Senior Survey (CSS) administered by the Higher Education Research Institute (HERI) between 2015 and 2019.

This study utilized critical race theory (Bell, 1991; Gillborn et al., 2018) and Laanan and Jain's (2011) model on transfer receptive cultures to better understand success outcomes for community college transfer students. The study considered various ways students seek financial support, experience their campus racial climate, and the nature and extent of engagement in curricular and co-curricular activities in college. Results suggest that the degree aspirations of vertical transfer students vary considerably by gender identity, sexual orientation, perceptions of the campus racial climate, interactions with faculty, and participation in co-curricular activities such as pre-professional and departmental clubs and research with faculty members. These key findings have significant implications for scholars, practitioners, and policymakers when considering conversations around supporting community college transfer students of color.

Descriptive statistics and three multilevel models addressed this study's research questions. The first primary analysis used a binary outcome that compared master's degree aspirants against those who only wished to pursue a bachelor's degree. The second model and outcome used doctoral degree aspirations compared to those stopping at the baccalaureate degree level. The third and final model compared graduate degree aspirants only, where master's degree

aspirants were coded as the lower value and doctoral degree as the higher value of the variable. All three final models passed indicators of fitness (Finch et al., 2014) as well as met significant thresholds via ANOVAs when comparing each model to all prior iterations of the model (including their respective null (or base) model) (Finch et al., 2014).

Several variables provided statistical significance throughout all analyses in explaining greater odds or detracting from graduate school education in the models' final step of analyses. In fact, almost all variables used for this study were significant in predicting the three different dependent variable outcomes for this study (revisit Tables 4.12, 4.14, and 4.17 for reference).

The following will discuss findings that provide insight into what shapes, sustains, or detracts students from pursuing graduate aspirations. Specifically, the discussion section will address the following research objectives from this study, which were to determine (1) the extent that campus climate perceptions impact graduate degree aspirations, if such effects from campus climate perceptions differed by institutional characteristics controlled at a multilevel model structure; (2) identify other college experiences and background characteristics accounted for differences in degree aspirations for student transfers of color.

Transfer Receptive Culture

As mentioned in Chapters three and four, this study was conceptualized around transfer receptive culture (Jain et al., 2011); specifically, the two post-transfer elements that explore academic and financial support and ways institutions honor and recognize the lived experiences that students bring to campus (Jain et al., 2011; Jain et al., 2020). These elements were explored through student programming available at transfers' respective four-year colleges and universities (Jain et al., 2020). Laanan and Jain (2016) propose a way to outline the transfer receptive culture in ways that may be easy to capture from student survey responses.

These elements will be operationalized around the model that Laanan and Jain (2016) explore for transfer receptive culture. The full model in Laanan and Jain (2016) is a conceptual model of studying diverse transfer students in organizational contexts. It consists of the following areas that cover institutional characteristics, academic performance, and academic experiences. This framed the study and provided a way to organize all variables utilized, as shown in Table 5.1.

Table 5.1

HGLMs for all three models

Table 7. HGLMs for All Three Models	Master's Aspirants		Doctoral Aspirants		Graduate Degree Aspirants	
Predictors	Odds Ratios	P-Values	Odds Ratios	P-Values	Odds Ratios	P-Values
(Intercept)	0.09	**<0.001**	0.00	**<0.001**	0.02	**<0.001**
Demographic Characteristics						
Gender (Male, Female)	1.40	**<0.001**	1.47	**<0.001**	1.07	0.397
LGBTQ+ (Hetero, LGBTQ+ Identifying)	1.01	0.889	1.28	0.055	1.35	**0.008**
Institutional Characteristics						
Institutional Control: Public (ref. Private)	1.12	0.275	0.80	0.087	0.79	**0.039**
Institutional Type: 4-year college (ref. 4-year univ)	0.88	0.274	0.84	0.284	0.85	0.161
Campus Selectivity	1.00	0.956	0.99	0.753	0.96	0.251
Academic Performance						
Major GPA	1.08	**<0.001**	1.04	0.138	0.97	0.199
Educational Expenses: Personal Income, Grants, and Loans						
Ed Expenses: My own income $1 to $2,999	1.00	0.972	1.17	0.215	1.22	0.074
Ed Expenses: My own income, $3,000 to $5,999	0.94	0.557	1.05	0.75	1.12	0.386
Ed Expenses: My own income, $6,000 to $9,999	0.94	0.616	1.26	0.172	1.36	**0.041**
Ed Expenses: My own income, $10K to $14,999	1.02	0.893	1.06	0.794	1.01	0.942
Ed Expenses: My own income, $15K or more	0.93	0.619	1.30	0.164	1.44	**0.026**
Ed Expenses: Grants, $1 to $2,999	1.15	0.243	1.01	0.975	0.80	0.13
Ed Expenses: Grants, $3,000 to $5,999	1.16	0.159	1.16	0.318	0.91	0.476
Ed Expenses: Grants, $6,000 to $9,999	1.03	0.793	0.98	0.877	0.94	0.631
Ed Expenses: Grants, $10K to $14,999	0.95	0.659	1.21	0.219	1.18	0.24
Ed Expenses: Grants, $15K or more	1.06	0.595	1.51	**0.003**	1.36	**0.012**

Ed Expenses: Loans, $1 to $2,999	0.84	0.265	1.08	0.713	1.24	0.26
Ed Expenses: Loans, $3,000 to $5,999	0.91	0.452	1.04	0.819	1.05	0.731
Ed Expenses: Loans, $6,000 to $9,999	1.02	0.84	0.92	0.605	0.85	0.264
Ed Expenses: Loans, $10K to $14,999	1.40	**0.005**	0.97	0.869	0.68	**0.005**
Ed Expenses: Loans, $15K or more	1.00	0.97	0.92	0.485	0.89	0.255
Academic Experiences: University Support						
Satisfaction with On-Campus Services and Support	1.00	0.908	1.03	0.597	1.01	0.817
Academic Experiences: Institutional Stigmatization of Transfer Students						
Campus Racial Tension	1.02	0.701	1.13	**0.017**	1.11	**0.023**
Academic Self-Concept Score	1.00	0.292	1.02	**<0.001**	1.02	**<0.001**
Academic Experiences: General Perceptions and Experiences with Faculty						
Academic Validation in the classroom	1.14	**0.006**	1.02	0.724	0.86	**0.009**
General Interpersonal Validation on Campus	0.99	0.753	1.14	**0.041**	1.20	**0.001**
Academic Experiences: Courses						
Capstone (No, Yes)	1.16	**0.041**	1.09	0.356	0.95	0.512
Academic Experiences: Course Learning						
CSS Habits of Mind Score	1.01	**<0.001**	1.04	**<0.001**	1.02	**<0.001**
Social Experiences: Engagement and Involvement						
Participation: Racial/Ethnic Org (No, Yes)	1.17	0.108	1.32	**0.018**	1.17	0.121
Participation: Preprofessional or Dept. Club (No, Yes)	1.24	**0.013**	1.97	**<0.001**	1.72	**<0.001**
Research Collaboration with Faculty	1.09	0.221	1.19	0.053	1.10	0.217
Research Ability developed by Institutions	0.96	0.459	1.20	**0.009**	1.26	**<0.001**
Hours per week: Working off-campus	1.04	**0.002**	0.99	0.42	0.95	**0.001**
Contributing money toward Family Needs	1.07	0.107	1.18	**0.005**	1.08	0.122
Civic Awareness Score	1.03	0.53	0.87	**0.009**	0.87	**0.002**
N ace		142		139		141
Observations		4040		2717		3477

Campus Climate Impact for Graduate Degree Aspirations

The campus climate for students across the U.S. is a pivotal factor in determining students' overall success in college (Alvarado & Hurtado, 2021; Hurtado et al.,2015; Hurtado et al., 2011). For transfers of color in this study, it also proved to be significant in predicting aspirations for certain types of graduate degree aspirations. In terms of operationalizing climate, factors and construct scores for campus racial tension, academic self-concept, validation in the classroom, general interpersonal validation, and satisfaction for on-campus student support

services were included in the final models as student perceptions of campus climate. These facets of campus climate also have connections with the academic experiences and performance (Laanan & Jain, 2016) that stems from the posttransfer elements discussed within a transfer receptive culture at a four-year college (Jain et al., 2011; Jain et al., 2020).

Campus racial tension. Campus racial tension is a factor that represents students' perceptions of a hostile campus climate, and the primary item driving this factor measured the extent to which students directly experienced or perceived discrimination due to race and/or other social identity characteristics. Students who perceived more hostile racial climates on campus tended to have greater odds of expecting to pursue doctoral degrees. (Tables 4.12 and 4.13). The latter two models create a space for a unique conversation that should position those with great influence to provide immediate intervention and conversation around the realities of racism on college campuses. Though students who more frequently experience hostile racial climates and racism have greater odds of intending to pursue graduate degrees, administrators and leaders need to provide spaces that allow for dialogue and conflict that are racially affirming. Leaders also need to intervene with new strategies for graduate student resource support.

Racial realism (Bell, 1991) may help explain why students who experience more hostile racial climates have better odds of wanting to earn doctoral degrees. Bell (1991) positions readers to think about racism and its permanence that will remain ingrained within the fabric of the U.S. Their address in the *Howard Journal* states that one must acknowledge the hard truth that racism will remain, use such truth to plan and *imagine* racial strategies that can bring fulfillment for people of color under this reality. Though Bell (1991) was intentionally talking about such permanence specifically for Black and African American folks in the United States of America, this lens of understanding racism can also explain what is observed here for the

findings of this study. These results may be able to extend Bell's (1991) work in that racial realism may not only be rooted in anti-blackness but also in overall white supremacy that subordinates all non-white racial and ethnic identities that are actively marginalized across the U.S. These findings may also indicate that the relationship is working in reverse, as those who have doctoral degree ambitions are more aware of discrimination, racism, and hostile racial climates and are thus more likely to be able to name/recognize these experiences. Because they have achieved so much (one of the few making it through the system), they are cognizant of the racialized context in which they are educated (Hurtado, 1994). Hurtado (1994) noted similar findings in relation to climate experiences, in that higher academic self-concept was found among those who experienced a hostile climate as graduate students.

As stated in chapter four, transfer students of color push through the realities of their minoritized status. Earning advanced degrees may serve as a motivator because of the possibilities that a doctoral degree may bring for students. Minoritized student populations from this study may seek higher degrees to advance racial equity practices across disciplines and spheres of influence. Transfers may, in fact, be, envisioning a future of reimagined racial realities (Bell, 1991).

Classroom validation. It would appear here that transfers of color who found champions of support based on their experiences with faculty developed plans to pursue a master's degree (Table 4.14 and 4.17). Feeling validated within the classroom by faculty at the four-year college contributes to students' belonging on campus (Hurtado et al., 2011). The validation students in this sample experience may indeed relate to what Jain and colleagues (2011) describe as interactions with localized transfer agents and champions who provide support and encouragement for advanced study.

General interpersonal validation. General interpersonal validation is a measure used to explain validation for students that can often occur outside of the classroom but on campus (Hurtado et al., 2011). The loadings for this factor score were relatively high and clustered around 0.74 to 0.81. Items surveying their opinions on faculty and staff taking an interest in their development were amongst the highest. Transfers felt that staff and faculty take an interest in their development at the four-year institution signals toward Dowd and colleagues' (2006) notion of institutional/transfer agents, where authoritative figures support and champion students' transition and development as transfer students at the four years. Transfer agents provide information that is often veiled and difficult for transfers to understand (Jain et al., 2020). More frequent general interpersonal validation contributes to a greater likelihood of having doctoral aspirations, and this finding echo prior understandings of what a transfer receptive culture looks like, as transfer agents go the extra mile in reducing cultural barriers, positively impacting educational aspirations, and legitimizing a sense of belonging (Jain et al., 2020).

Other measures of faculty providing support outside of the classroom also had significant associations with the degree aspirations among vertical transfer students of color. Engaging with faculty outside of classroom experiences provides unique opportunities for conversations that can impact trajectories for students (Hurtado et al., 2011). Students who expected to pursue a doctoral degree rather than a master's or no graduate education could be influenced by their interactions with faculty, who typically hold a terminal degree in their field when employed at four-year institutions. Transfer agents for students in this study could be providing opportunities that also signal greater interest in doctoral aspirations. As other items for academic and social experiences (Jain et al., 2011; Laanan & Jain, 2016) are controlled for the model, the effect of general interpersonal validation on doctoral degree aspirations wanes. Other items like

conducting a capstone project, engaging with faculty in research, and participating in student organizations are often spaces for students to interact with and feel validated by faculty and staff (Trolian et al., 2016). Given such context and background in this literature, this could be the likely reason these items sharing odds in variance explanation and contributing toward doctoral aspirations would occur for the latter two models (Tables 4.13 and 4.17).

Academic self-concept and habits of mind. Students who reported having greater academic confidence tended to be more likely to pursue doctoral degrees relative to master's or bachelor's degrees than their counterparts who were less confident academically. Academic self-concept also indirectly affected degree aspirations, as the direct effect waned once habits of mind for lifelong learning entered the model. This suggested that students who are confident in their intellectual and academic capacity to succeed in college also tended to more frequently draw from successful intellectual habits (i.e., habits of mind), which also positively predicted aspirations for doctoral degrees over master's or bachelor's degrees (Lucas & Hanson, 2016).

Institutional characteristics. With respect to differences based on institutional characteristics, degree aspirations no longer significantly varied across institutions in two of the models after accounting for student-level predictors. This suggests that accounting for the composition of the transfer students of color at each campus also accounted for the variation across schools, meaning that differences across campuses were not due to campus characteristics, but instead due to the kinds of students those campuses tend to attract. Though the research design and process were intended to look at differences within institutional characteristics, an in-depth discussion on the implications surrounding the finding specifically for institutional control may be difficult, given the lack of specific items to control for that can help further delineate the uniqueness of public and private institutions. Accounting for experiences at the community

college may also explain why student characteristics hold much more sway in aspirations. Many transfer students have only two years at the four-year and are locked into a major, possibly less able to be influenced by their four-year environments.

Campus climate differences across institutional characteristics. Question 1a of the research question asked if degree aspirations differed by campus climate experiences across institutional characteristics. As mentioned in the paragraph above, the effect of campus climate on degree aspirations did not significantly differ across campuses. The effect was stable regardless of the campus context where the student was enrolled.

Intersecting Identities

The intersecting identities of women of color and LGBTQ+ identifying transfers of color from this study demonstrated greater odds in aspiring toward graduate education. In the final iteration of the model, Women of color preferred a master's or a doctoral degree over a bachelor's degree, while LGBTQ+ transfers of color preferred a doctoral degree against a master's degree. This parallels findings on female STEM transfers (Starobin, Jackson Smith, Laanan, 2016) and LGBTQ+ community college students (Garvey, Taylor, & Rankin, 2015). Both studies (Garve et al., 2015; Starobin et al., 2016) found that support from staff and faculty, involvement with research projects, and student organizations provided students an opportunity to adjust better to the campus. For this study, the gender gap in odds of aspiring to earn a master's degree or doctoral degree became smaller as academic validation, and general interpersonal validation entered the model. Because women more often receive support from faculty and staff both inside and outside the classroom, which also positively predicted intention to pursue advanced degrees, the gap between men and women was reduced once these experiences were controlled (Starobin et al., 2016). Similarly, LGBTQ+ transfers of color as a

variable controlled in the model began to moderate once validating experiences and other environmental experiences were controlled for in the model.

These experiences of being of a minoritized population and having such traits controlled for in the model contribute toward odds of graduate education contradicts prior research on these student groups (Garvey et al., 2017; Sax et al., 2015; Sax et al., 2017). Sax and colleagues from different years found an enduring gender gap that continues to persist amongst STEM disciplines and how (at times) female STEM students feel less confident or more unwilling to continue in STEM. Garvey and their colleagues (2017) found that when faculty and staff were not supportive of LGBTQ+ student identities, they're perceived their climate experiences as somewhat hostile. This study utilizes data of transfers of color who are highly successful and high achieving, given that they have successfully transferred into a four-year college or university and are also in their senior year when responding to this survey. This important trait of student respondents can explain the phenomena seen here, in that the most vulnerable, marginalized, and minoritized groups (LGBTQ+ and women transfers of color) are successfully navigating their new environmental experiences, albeit they're additional grappling with a hostile campus climate.

LGBTQ+ and Women of color transfer students as covariates controlled for in the analyses were heavily moderated when the measure for campus racial tension was introduced. These findings could similarly mean that students who hold the intersecting identities above move forward through their experiences of a hostile campus climate but hope to use their intersecting identities to influence different spheres (Crenshaw, 1991; Hurtado, 1994). As noted in chapter two, Intersectionality is a lens to see people's everyday experiences in ways that allow one to see how structures of oppression construct one another; it is a lens that can allow researchers to see people's experiences through an interrelation of sociohistorical systems of

inequity (Crenshaw, 1991). Issues of inequity must be examined at both the macro and micro levels forms (Harris & Patton, 2019) to interrogate the disparities that occur at the intersections of identities (Crenshaw, 1991). The macro-level of intersectionality focuses on how policy influences how marginalized groups navigate their identities at the intersection, whereas microlevel experiences are individual experiences in relation to interlocking systems—like the four-year college or university.

Since this study did not control any ways to examine the macro-level experiences, one can only infer through micro-level analyses (Crenshaw, 1991) used within this study. LGBTQ+ and women of color transfer as a control in the model being moderated by their experiences with a hostile campus climate can signal how students navigate their day-to-day or micro-level experiences across campus. This would mean that students with multiple intersecting identities push through their hostile climate experiences that may include the minoritization of their race, ethnicity, gender, and/or LGBTQ+ status. As mentioned above, for campus racial tension, students' awareness of their oppression at the intersections could make them agents of change for future generations in different spheres. A recent HERI report (Fregoso, 2021) found that women and genderqueer or gender nonconforming students engaged in critical action and consciousness than their male counterparts. The critical action and consciousness factor score are a measure used by CIRP within Diverse Learning Environment (DLE) surveys as a unique way to capture students' engagement with publicly communicating their opinion for a cause through blogs or forms of protests, along with engaging in critical self-reflections that encourage them to challenge the biases of themselves and others when need be (Fregoso, 2021). The result of women, genderqueer, or gender nonconforming students engaging in critical action and consciousness could explain what is happening within this current study as gender and LGBTQ+

covariates are moderated by the campus racial tension factor used for hostile campus climate measurements. It is well known that women, genderqueer, or gender nonconforming students experience hostile campus climates at greater rates than cisgender, straight men. The injustices women and other marginalized groups may face position them to reject and advocate against other social inequities beyond their marginalized status (Fregoso, 2021; Johnston, 2016). This may lead transfers of color with other marginalized intersecting identities to be allies of support for their experiences along with other forms of social injustice.

Financing Education through Personal Income, Grants, and Loans

Grants. Students who received grant aid (or aid that does not need to be paid) tended to aspire toward more advanced degrees. The more money transfers of color received in grants, the more likely they were to aspire toward obtaining a doctoral degree (See Tables Y and Z). This finding may relate to students' savviness in financing their education. Given the many ways in which can finance graduate education via assistantships, fellowships, and other grant aid, receiving grants as an undergraduate may signal a form of navigational capital related to financial aid that enables grant recipients to see a clearer path to financing their doctoral education.

Additionally, given that the findings also suggest that receiving more grant aid was associated with aspiring to earn doctoral degrees rather than master's degrees in the third model, this finding may connect to the fact that master's programs tend to offer fewer opportunities for financial aid support than doctoral programs. This could factor into the decision-making process for transfers of color who believe a greater reward with minimal debt risk could occur if deciding to pursue a doctoral program.

The receipt of grant aid may be a proxy for encountering a more transfer receptive culture at the four-year institution. Jain and Colleagues' (2011) third element of an institution embodying a transfer receptive culture indicates that four-year colleges and universities must provide financial support and resources to students that have been considered *non-traditional* (Deil-Amen, 2015). Transfers of color receiving aid in the form of grants that also provides greater odds toward graduate education are indicative of institutions moving in the right direction that can be considered as institutions that hold a transfer receptive culture within their respective institutions.

Loans. Students who reported using between $10,000 and $14,999 in loans to pay for their last year of college had a reduced likelihood of pursuing doctoral degrees relative to master's degrees. Many transfers of color have experienced debt and loan hardship because of the lack of overall financial support and resources to supplement their educational expenses (Handell, 2008). Transfers of color may have greater confidence in pursuing more education with minimal risk and cost that may result in loan debts, like master's or professional degrees that take less time to complete than doctoral degrees. Prior studies have mentioned the disproportionate amount of student loan transfers have in comparison (per capita) to students beginning their first year have. The resulting positive relationship of this study may signal the navigational prowess of the financial aid process.

The study's findings suggest that, among transfer students of color with graduate degree intentions, loans have a depressing effect on the number of years of advanced education they may consider. The mere fact of having loans does not serve as a dealbreaker for graduate education, but it does dampen the enthusiasm for pursuing terminal degrees in most fields.

Students who utilized anywhere between $10 thousand to $14,999 thousand in loans would detract from doctoral aspirations and significantly predict master's aspirations by 1.4 times.

Hours per week working off-campus

Working more hours per week off-campus corresponds to a greater likelihood of intending to pursue a master's degree rather than a doctoral degree or a bachelor's degree (Tables 4.12 and 4.14). Oftentimes, students who work off-campus have already been situated with a career path opportunity that provides networking and transitional support into the full-time work students pursue after earning their bachelor's degree. Since students may be on a career trajectory, this may be a reason why Table 4.12 reported this variable as a positive predictor while table 4.14 had this significant finding listed as a negative predictor. In both instances, the strength of the odds ratio gravitated toward master's degree aspirants as the hours of work per week off-campus increased. This is also confirmed through a descriptive crosstabulation that shows that the bulk of respondents who worked 20 hours or more a week tended to be master's aspirants than doctoral aspirants or had no aspirations for graduate education. Also, this could be a signal where students are establishing their career trajectory; those who are working more hours may already be more established along a career path, in which case a master's degree might help them advance more quickly, whereas those not working off-campus may be more prone to consider doctoral degrees.

Contributing money to family

The number of monetary expenses transfer students of color frequently provided to their families was also a positive predictor of doctoral degree aspirations. The more money transfers of color contributed to their family, the more likely they pursued a doctoral degree. This finding aligns with students who also contributed to their own educational expenses through their own

income. Transfer students of color who have additional responsibilities outside of their collegial duties create a moment of aspirational motivation. This could be due to financial exhaustion that impacts transfer students at a four-year college or university (Handell, 2008). Transfer students of color often have additional roles they must consider while navigating academia. Oftentimes, transfers have a responsibility to their families, no matter how further away or close they are from their neighborhoods or cities of origin. Perhaps the knowledge and financial commitment to supporting their family now position them to realize that such a level of support will be a continuous effort; thus, pursuing a doctoral degree may provide greater opportunities for upward social and economic mobility than master's programs (generally speaking) could. Additionally, survey respondents contributing money to "family" could also mean their own immediate family, like having their children or dependents they must provide for. Lastly, it could also signal a certain level of financial independence/stability, giving them the confidence (and suggesting maturity) for doctoral work.

Civic awareness

The CIRP construct for civic awareness examines students' understanding of issues facing their communities, the nation, and issues worldwide. This item was a negative predictor detracting transfers of color from pursuing a doctoral degree. Those who exhibited higher rates of understanding issues facing their communities, the nation, and the world were more likely to pursue a master's degree instead of a doctoral degree or bachelor's degree. Herein lies the complexity of being a person of color. With the measure for civic awareness, it would seem that perhaps becoming knowledgeable of social injustices seems to position transfers of color within a different outlook. A direct opposite effect occurred on experiencing a hostile campus climate versus becoming aware of what social injustices mean at a local, national, and global level.

People who experienced the same hostile climates while having greater awareness of social inequities tended to aspire toward master's degrees than doctoral degrees. Similarly, those who experience a hostile climate while having less awareness of social inequities present around local communities, the nation, and the world tended to aspire toward doctoral degrees.

Even as transfers of color push through their lived experiences and realities of racism (Bell, 1991), their mechanisms of coping with racist realities shift from different modes of pursuing their future. Those wanting to pursue a master's degree are perhaps more eager to deepen their career-oriented knowledge and skills and be agents of change outside of academia and medicine, law, teacher education, and public policy that do not require doctorates. Transfers of color wishing to pursue doctoral studies could be interested in expanding their knowledge on social injustices while attempting to uplift marginalized and disenfranchised people within academia, education institutions, public health, and medicine.

It could be that transfers of color who are exposed to social injustices would position themselves to become readily available to use their position of privilege in support of addressing some of the issues they are passionate about. One example is organizations like *Teach for America,* where one is part of a larger effort to address racial equity, opportunity gaps, and other forms of systemic marginalization that are known to create barriers for talented children and young adults across the globe (Donaldson & Johnson, 2011). Perhaps transfers of color for this study are impassioned to be a part of such an effort, thus seeing a master's degree as a more viable approach with a more transparent timeline for completion.

Discussion Summary

This study confirms that overall graduate aspirations for transfer students of color shift on their perceptions of campuses not being receptive toward their experiences as transfer students

(Jain et al., 2020). The combination of variables used for this study, though often time signaled toward positive predictors for graduate degree aspirations (campus racial tension, personal income, and loan options to support college finances), are typically found to be negative experiences toward many success and psychological outcomes (Fermatt et al., 2019). For instance, experiences with a hostile campus climate have been found to increase stress while decreasing perceptions of a sense of belonging for college students (Bryant, 2001; Fermatt et al., 2019). Secondly, though these items contributed greater odds toward doctoral aspirations, the experiences with a hostile campus climate that have such strength on the outcome variable could also indirectly mean something else that cannot be examined within this study. A transfer receptive culture is intended to honor the lived experiences of minoritized transfer students (Jain et al., 2011). Students experiencing a hostile campus climate while having negative experiences and active marginalization toward their race, ethnicity, or other social identities (campus racial tension) are not a product of a transfer receptive culture. Descriptively, some students from this sample appeared to have perceived their campus to be hostile, given descriptives looking at the distribution between race/ethnicity and the campus racial tension (grouped mean score) factor. Campus racial tension became significant for two of the three models, which also means that this experience impacts them in many ways. Element three of a transfer receptive culture (Jain et al., 2011) highlights the importance of providing financial and academic support for transfers of color. Jain and colleagues (2011) envisioned financial support that minimizes potential strain and stress from transfers; students utilizing personal income or loans for their educational expenses do not reflect such sentiment. Even though this study does not have a comparison group of non-transfers or white students, evidence that shows students utilizing financial resources referenced above still signals a potential lack of understanding of financial aid resources. More support and

availability of various grants in the form of aid that does not need to be repaid is ideal for transfer students at a four-year college or university.

Although this study does not have a non-transfer or white student reference group, transfers of colors' aspirations leaning toward doctoral education contribute to the literature in understanding support for transfers of color. Prior studies found that perceiving or experiencing a more hostile racial climate led to worse outcomes that were measured within respective studies (Bryant, 2001; Fermatt et al., 2019; Hagedorn, 2010; Glass & Harrington, 2002; Ishitani & McKitrick, 2010; Townsend & Wilson, 2006; Wawrynski & Sedlacek, 2003), while this study and its measure for a hostile campus racial climate contributed toward doctoral education aspirations. The results from this study, particularly around how transfer students grapple with racism, do not undermine the harms but suggest it is more complex in building on such prior scholarship that has consistently reminded scholars, practitioners, and those lobbying for change in the policy of the realities of how students experience hostile climates. There are real harms that racism and discrimination continue to play in the lives of college students; this study simply suggests that students that are more perceptive of this potential aspire to higher degrees. As in, future work should not intentionally try to see how much odds are *contributed* toward doctoral aspirations. The measure for a hostile campus climate was not created to see how well students can work through racism and contribute toward their odds of degree aspirations but to see what negative experiences students may be experiencing that must be addressed across all institutions.

Revisiting a Transfer Receptive Culture

Jain and colleagues (2011) presented a framework that allows one to critically assess transfer student of color experiences at the four-year. Additional studies have worked on incorporating their framework to better nuance the transfer student experience as well (Castro &

Cortez, 2017; Jain, Bernal, Lucero, Herrera, & Solórzano, 2016; 2017; Real Viramontes, 2018; 2020; 2021; Laanan & Jain, 2016; Jain et al., 2020; Taylor & Jain, 2017; Hodara et al., 2017; Irvins, Copenhaver, & Koclanes, 2017; Nuñez & Yoshimi, 2017; Senie, 2016; Tobolowsky & Bers, 2019; Whang et al., 2017). Findings within the studies referenced above had results on transfer student experiences that seemed straightforward, in that negative experiences often related to negative outcomes and vice-versa. Although the researcher will recommend further strategies for future research to dive into the latency of items found here, it could also be worthwhile to note how a transfer receptive culture may further interrogate and unpack why minoritized groups may at times use their marginalization as a motivating factor to succeed. Such effort may allow for scholars to contribute to conversations on ways to galvanize and advocate for transfers of color for better on-campus experiences. Transfers of color pushing through their marginalization is an experience they'll remember beyond the baccalaureate. Though students in this study have greater odds of graduate education, they are also worthy and deserving of positive campus experiences that result in the same positive affective outcomes measured here.

Recommendations for Research

The study's findings bring an array of new items to consider when considering effective ways to examine experiences of transfers of color at a four-year college or university. Research must take new innovative ways to capture the intricacies of the nature of transfer and further implications of being a person of color. First, future research that examines student success outcomes for transfers of color should consider more approaches for structural equation modeling. Structural Equation Modeling (SEM) is a method to analyze the direct and indirect paths that explain variance to the dependent variable, from either individual or factors used for

the study. There are multiple ways to utilize SEM as a methodological way to observe transfer student outcomes; overall, SEM is a way to test theories through model specifications provided by variables being inputted into the models of SEM. SEM is a great way to study indirect effects, which should be considered given the consistent normal effects that occurred from the results of this study.

Researchers must design better survey instruments or ways to quantitatively capture the intricacies of being a transfer student of color. Several survey instruments created to capture student experiences on college campuses use items exclusively meant for students who have been at a four-year institution since their first year or who are enrolled in community colleges. For example, ways to capture transfers' specific experiences as they navigate a four-year college or university are absent in surveys used to capture climate experiences. Available surveys often have minimal student participants, which makes it difficult for researchers when it comes to the generalizability of the survey respondents. Items that should be considered for future survey (re)designs are questions that can be used to create measures that specifically examine transfer shock, experiences with the stigmatization of transfers, their level of understanding of financial expenditures in college, and more specific items that address transfers' interaction with staff and faculty. It is difficult to capture such experience on single items from surveys alone; thus, specific survey questions that ask different questions that lead back toward transfer receptivity. This can be accompanied by exploratory or confirmatory factor analysis, parameter estimations, and multilog scoring (Embretson & Reise, 2000; Ostiri & Nering, 2006).

Mixed-methodological approaches may be ideal when investigating the racialized experiences of transfers of color. Perhaps future studies can include a mixed methodological design that may interrogate further findings stemming from quantitative data. Women of color in

this study had significantly greater odds of pursuing doctoral degrees than men. Qualitative findings that can further interrogate the support systems provided at the four-year to help expand this reality for other women across disciplines would be ideal. Additionally, using a framework of understanding critical race theory should be further explored and supported by utilizing qualitative studies to generate narratives of student experiences. More research should be conducted to consider varying student success outcomes that may be contingent upon enrollment across public and private colleges and universities. Given that transfers had lower degree aspirations in public institutions, further studies should explore in-depth what could further explain these phenomena.

Recommendations for Practice

Institutions must continue to address the hostile campus climate that are racialized educational environments for students of color. Perceptions of campus racial tension findings suggest those with more advanced degree aspirations may have already developed the awareness to recognize and call out more veiled or covert forms of racism and discrimination, which could account for the positive link between more intense perceptions of a hostile climate and doctoral aspirations. Transfers pushing through and wanting to pursue doctoral education could be a sign of such transfers wanting to minimize the angst they might have experienced in being a transfer at their respective institutions. Task forces, interdisciplinary committees should be established across academic and student affairs on college campuses as one way to begin conversations on ways they can support transfers of color. Focus groups and institutional data on transfers of color should then be collected to create specific recommendations rooted in student experiences. Essentially, institutions must be intentional in creating a space for transfers of color to feel welcomed and accepted. Negative campus climate experiences should never be considered

healthy motivators toward graduate school success, as previous research suggests it is associated with a high degree of stress.

Financial expenditures were significant predictors that differed in odds based on graduate educational interest and form of educational aid received. First off, institutions must provide greater coordinated efforts to provide financial resources and support for transfers. Given how findings from this study reported that loan amounts between $10,000 to $14,999 were associated with students with lower doctoral aspirations, institutions should work in consortium with the department of education and other private entities geared toward providing financial support to college students. Transfers need consistent revenue support at the four-year, given how prior studies show that increased loan amounts detract students from completing degrees (Blekic, Carpenter, Cao, 2020) and increase stress which impacts overall GPA for transfers (Baker & Maltato, 2019). Greater financial support is important for retention (Bleckic et al., 2020) and a significant consideration for transfers of color make regarding future educational plans. Negative GPA ramifications associated with loans (Baker & Maltato, 2019) are reasons why students feel discouraged in pursuing doctoral degrees. There might be an assumption that their academic performance may not meet admission requirements for doctoral degrees across disciplines.

Further financial literacy support may be needed to intervene on the extent of personal income used to pay for finances since odds for doctoral aspirers were greater for those who used at least $6000 of their own income for educational expenses. Student services/affairs personnel should investigate why transfers of color may be inclined to use their own income to finance their education. It's important to understand the agency transfers have in choosing where they attend college and how they choose to finance their education. These findings, along with a third of transfers working more than 20 hours a week, could mean that either transfers received

minimal financial assistance in the form of grants, or it could be their preference to independently navigate and support themselves while being a student. This study did not have the opportunity to further investigate the reasons why transfers relied on personal income and loans but would be an important campus inquiry to consider. Outreach and financial literacy initiatives should be expanded in similar ways that four-year colleges and universities promote/recruit for their institutions through transfer fairs at the community college level. Financial aid services and lenders must consider the vulnerability transfer students have when there is minimal understanding of the overall part of financing their higher educational experiences (Fermatt et al., 2019).

Institutions that embody a transfer receptive culture (Jain et al., 2011) provide financial resources and support that do not further strain transfers of color. As institutions grow in transfer enrollment, these implications would be something to consider to better support such a demographic. This appears to be true for this study, as students who received grants in the amount of $15,0000 or more have significantly greater odds of aspiring toward doctoral aspirations.

Recommendations for Policy

The federal department of education needs to provide better tracking systems and data made available for researchers for a representative and complete understanding of transfer students across the U.S. Specifically, federally available data such as IPEDS lacks important institutional and environmental characteristics that could be used as a supplement to survey data that are meant to explore students' experiences across college campuses. For instance, a nuance flag may allow one to see financial aid expenditures disaggregated by transfer status. These items are currently available through IPEDS but lack the ability to disaggregate by transfer status

to account for differences in aid expenditures between transfer and non-transfer students. Such data could be merged with survey datasets that examine environmental experiences (like CIRP) that could have contextualized findings like the significance of institutional control or provide greater understanding as to why institutional selectivity across campuses was not a significant predictor of graduate aspirations.

More policy initiatives should be implemented that support the transitions of transfer students. Policymakers must lobby for more financial support and incentives that can ease, support, and follow through with transfers transitioning into the four-year. Given the smaller timeframe transfers have at the four-year compared to non-transfers, other types of transitional support may look like institutional mandates of early-intervention strategies for support once transfers commit to enrolling. TRiO student support and bridge programs are often known to provide opportunities that provide students the necessary capital and resources to successfully navigate the four-year. They're great programs that provide inclusive spaces that embrace transfers' minoritized and stigmatized identities. These initiatives are too often positioned to support a small amount of students due to budget constraints, leaving the possibility for other transfers on the margins. Federal and state policy initiatives could be a combination of more funding for such programs or greater efforts to institutionalize these experiences on every campus like the traditional student services (i.e., admissions, financial aid) already available for students. These programs would have more staffing and resources to nurture graduate degree aspirations and support throughout the graduate school application process. Given the increasing labor-market demands for students with more advanced degrees, this is an important implication to consider.

State and Federal entities should mobilize efforts in ways that can provide increased support for their transfer student enrollments across higher education systems. This may look like (re)connecting with institutional leaders to discuss strategy, lobbying, and ways public education systems can find new ways to finance interventions and programs that can uplift the transfer of color communities enrolled across four-year colleges and universities. Funded interventions may look like financial aid services offering additional outreach and inreach Guendelman & Witt, 1991) support for students in the same ways admissions recruiters do when visiting community colleges. Outreach efforts could be through financial literacy workshops and programs that provide continued support in ways that academic advisors and counselors have done so at the community college and four-year regarding academic support and adjustment. Financial aid and admissions should coordinate recruitment strategies to have financial aid representatives available when promoting their institutions via transfers fairs at the community college. *Inreach* efforts may look like staff financial aid specialists along with transfer student leaders surveying and being made available across campus for questions and answers regarding the financial aid process. Students often gravitate toward student leaders for support; this could be a great way to train student leaders in financial savviness that could then lend an opportunity for transfer students to get connected with financial aid resources and become aware of how these resources can support them.

Lastly, policymakers should devote new efforts and resources in support of gathering generalizable data. Researchers alone may not suffice in making this change a reality. There is only so much a researcher or team of researchers can achieve in lieu of the financial support they are given. Providing greater funding support for quantitative phases of investigations through grants may allow for greater opportunities to increase item responses on surveys and provide

support for sophisticated data analyses that control for issues of non-response within survey participation, as policymakers would need to devote resources to gather generalizable data. Researchers can only do so much unless resources are allocated to support data collection efforts

Summary

This study aimed to critically analyze transfers of color and their experiences across four-year colleges and universities. The outcome of their aspirations toward graduate education was used to examine how students felt a sense of support and belonging toward their respective campuses as a transfer of color. Though the study intended to explore the importance of institutional characteristics and how much significance was found in explaining odds toward graduate degree education, the study confirmed that perhaps the impact of environmental experiences for transfers did not significantly differ as much as their experiences when they initially begin college. Though that may be the case, this study provided a rich analysis that would encourage researchers to further investigate transfer student issues, along with recommendations for practitioners and policymakers to extend a transfer receptive culture.

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Appendix A

Variation Inflation Rates to Test for Collinearity

Predictors	Master's Aspirants *(Model 1)*	Doctoral Aspirants *(Model 2)*	Graduate Degree Aspirants (Model 3)
(Intercept)			
Demographic Characteristics			
Gender (Male, Female)	1.04	1.04	1.04
LGBTQ+ (Hetero, LGBTQ+ Identifying)	1.02	1.03	1.04
Ed Expenses: My own income, $1 to $2,999	1.76	1.86	1.90
Ed Expenses: My own income, $3,000 to $5,999	1.55	1.59	1.62
Ed Expenses: My own income, $6,000 to $9,999	1.39	1.46	1.49
Ed Expenses: My own income, $10K to $14,999	1.24	1.25	1.26
Ed Expenses: My own income, $15K or more	1.31	1.39	1.42
Institutional Characteristics			
Institutional Control (Public, Private)	1.13	1.14	1.19
Institutional Type (4 yr college, 4 yr uni)	1.68	1.90	1.49
Campus Selectivity	1.80	1.97	1.44
Academic Performance			
Major GPA	1.12	1.15	1.12
Academic Experiences: University Support			
Ed Expenses: Grants, $1 to $2,999	1.46	1.46	1.44
Ed Expenses: Grants, $3,000 to $5,999	1.59	1.62	1.64
Ed Expenses: Grants, $6,000 to $9,999	1.52	1.57	1.57
Ed Expenses: Grants, $10K to $14,999	1.45	1.54	1.55
Ed Expenses: Grants, $15K or more	1.57	1.71	1.76
Ed Expenses: Loans, $1 to $2,999	1.14	1.15	1.12
Ed Expenses: Loans, $3,000 to $5,999	1.22	1.25	1.22
Ed Expenses: Loans, $6,000 to $9,999	1.24	1.23	1.22
Ed Expenses: Loans, $10K to $14,999	1.23	1.23	1.24
Ed Expenses: Loans, $15K or more	1.43	1.44	1.45
Satisfaction with On-Campus Services and Support	1.15	1.14	1.14
Academic Experiences: Institutional Stigmatization of Transfer Students			
Campus Racial Tension	1.08	1.12	1.11
Academic Self-Concept Score	1.15	1.17	1.15
Academic Experiences: General Pereptions and Experiences with Faculty			
Academic Validation in the classroom	1.60	1.72	1.70
General Interpersonal Validation on Campus	1.51	1.62	1.60
Academic Experiences: Courses			
Capstone (No, Yes)	1.05	1.07	1.06

Academic Experiences: Course Learning			
CSS Habits of Mind Score	1.18	1.17	1.18
Social Experiences: Engagement and Involvement			
Participation: Racial/Ethnic Org (No, Yes)	1.11	1.10	1.13
Participation: Preprofessional or Dept. Club (No, Yes)	1.08	1.08	1.11
Research Collaboration with Faculty	1.07	1.07	1.07
Research Ability developed by Institutions	1.31	1.34	1.30
Hours per week: Working off-campus	1.14	1.15	1.16
Contributing money toward Family Needs	1.11	1.11	1.13
Civic Awareness Score	1.29	1.32	1.29
N ace	142 $_{ace}$	139 $_{ace}$	141 $_{ace}$
Observations	4040	2717	3477