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AN ASSET MODEL: IDENTIFYING INSTITUTIONAL CHARACTERISTICS AND BEHAVIORS THAT CLOSE COMMUNITY COLLEGE COMPLETION GAPS BETWEEN BLACK AND WHITE STUDENTS

Courtney Lange

AN ASSET MODEL: IDENTIFYING INSTITUTIONAL CHARACTERISTICS AND BEHAVIORS THAT CLOSE COMMUNITY COLLEGE COMPLETION GAPS BETWEEN BLACK AND WHITE STUDENTS

by

Courtney Lawson Lange

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Approved by:

Dr. Heather M. Annulis, Committee Chair
Dr. H. Quincy Brown
Dr. John J. Kmiec, Jr.
Dr. Dale L. Lunsford
Dr. Katie Howie

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ABSTRACT

The United States fails to meet its own workforce needs, and estimates show that by the year 2025, almost two out of three jobs in the nation will require at least some postsecondary education or training (Carnevale et al., 2019b). Jobs with the fastest growth rate will require an associate degree (Carnevale et al., 2019b). According to the most recent national data from the National Student Clearinghouse (NSC) Research Center, one in three students begin their college journey at a community college (NCES, 2019). Only 40% finish a degree or credential within six years (NCES, 2019). The proportion of those completing college is much worse for students of color, where a student's chances of completing college are 16% less for Black students when compared to their White counterparts (Lumina, 2021a.). By bridging these gaps, the United States can meet current and future workforce needs and compete in the global economy.

To investigate factors associated with differences in completion rates between Black and White community college students, this study used a mixed-methods approach of causal-comparative quantitative methods combined with the qualitative interview research method. Results of the IPEDS data analysis informed interviews with community college administrative officers at institutions with the highest performance in reducing completion gaps between Black and White students.

The study’s four findings are derived from a purposeful combination of quantitative statistical analysis and qualitative interview inquiry and confirm prior findings, while also bringing forth new information. The study’s first finding confirms prior research that White community college students complete college at a higher rate than Black community college students. The study also found a statistically significant

relationship between the percent of Black instructional staff in predicting the gap between Black and White community college students. Other key findings include the use of data as a key behavior among community colleges successful in closing gaps between Black and White community colleges students, and the importance of social supports in creating equitable outcomes between Black and White community college students.

Keywords: community college completion, human capital, workforce development, racial equity gaps

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Dr. George Boggs—thank you for being as knowledgeable as you are caring about community college students.

DEDICATION

I am the first person in my family to earn a terminal degree but am deeply aware that each member of my family—for generations—has contributed. I share this accomplishment with all of them.

My great grandparents and grandparents were, by all definitions, working class. Some were immigrants, none attended or graduated from college, and all worked in jobs considered to be blue collar—a baker, a homemaker, a mining superintendent, and a welder. They worked hard, valued family, made sacrifices, and prioritized making things better for the generations of our family that followed. Each generation, that has happened and it has continued to happen over the course of my life.

My grandmother, Hilda Ruth Noble, taught me some of life's most important lessons. Most notably, she modeled unconditional love to her family and friends and created a home where everyone felt welcomed and left well-fed.

My grandmother, Nell Gravlee Lange, was the only child of a single mother. She modeled generosity, was my greatest teacher, and never paid a cent of interest. She was smart when women weren't supposed to be and was the definition of a lifelong learner. Her last request of me was that I complete my education—she would be proud.

My father is an architect at heart. He has the unmatched ability to create something out of nothing and, like all good magicians, always has a rabbit in his hat or trick up his sleeve. We have a mutual love of classic cars, art, family treasures, and good bread.

My big brother, Alan, has shown me how to do life right. He is successful in business but, most importantly, in life. He is kind and generous, and a dedicated brother, son, husband, father, friend, and Cubs fan.

My mom is my best friend and co-conspirator. She has been the conductor of our lives, working to orchestrate our family's most special moments and beloved memories. She's as beautiful inside as she is on the inside and I can't imagine doing life without her. She is thoughtful, independent, fiercely loyal, has an unmatched sense of style, and an innate ability to make you feel like you are the most important person in her life. She loves scary movies, extra ice in her tea, and her peanut butter toast extra crunchy.

My partner, Lynn, has carried me through this process and generally carries me through my everyday life. She is the single reason I began this journey and ultimately crossed the finish line. She is as creative as she is analytical and leads by example and from the heart. Lynn is a master statistician, teacher, dog groomer, landscape architect, party host, and gourmet chef. She is a loving daughter, mother, and friend, and is always up for an adventure (surfing, hiking, rafting, indoor camping, rock climbing, and treehouse vacations). She is my partner in crime and partner in life, and I could not be more grateful to have found her.

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LIST OF ABBREVIATIONS

AACC	American Association of Community Colleges
ATD	Achieving the Dream
CCCSE	Center for Community College Student Engagement
CTE	Career and Technical Education
CUE	Center for Urban Education
HBCU	Historically Black Colleges and Universities
IPEDS	Integrated Postsecondary Education Data System
IRB	Institutional Review Board
MOC	Men of Color
NCES	National Center for Education Statistics
NSC	National Student Clearinghouse Research Center
SPSS	Statistical Package for the Social Sciences

CHAPTER I - INTRODUCTION

The United States was once an international leader in higher education and now ranks 8th and 11th globally in bachelor's and associate degree attainment, respectively (NCES, 2019). Internally, the nation fails to meet its workforce needs, and estimates show that by 2025, almost two out of three jobs will require at least some postsecondary education or training (Carnevale et al., 2019a). Jobs with the fastest growth rate will require an associate degree (Carnevale et al., 2019a). This phenomenon signifies a shift from post-World War II America, when two out of three jobs required only a high school diploma or less to earn middle-income wages. These blue-collar jobs, many of which were manufacturing jobs, employed large numbers of people. Still, as automation increased, economic opportunity shifted, favoring those with higher skill levels and higher educational attainment rates (Carnevale et al., 2019a).

Research by the Lumina Foundation (2021b) shows that global trends like automation and globalization disproportionately impact Black Americans. Recent research outlines the causes contributing to high displacement rates among Black workers due to automation, historical lack of access to education at all levels, lower rates of postsecondary education, and overrepresentation in at-risk jobs (Lund et al., 2019). Black Americans have the lowest postsecondary attainment rates of any ethnic group or race (Lumina, 2021a; Shapiro et al., 2018). The Black population in America has grown by more than 29% over the past 2 decades, while the White population has increased by only 13% during the same timeframe (Pew Research Center, 2021). These factors impact the nation's ability to meet current and future workforce demands with an adequate supply of trained and skilled workers (Carnevale et al., 2019a).

Community colleges offer open admissions, affordability, quality education, and geographic accessibility (Cohen & Brawer, 2008). Community colleges prepare students for high-skill and high-demand jobs, and for many students, completion of the first 2 years of a 4-year degree (Cohen & Brawer, 2008). Nearly half (46%) of all students who completed a bachelor's degree previously attended a community college (Shapiro et al., 2017). Serving over 6.8 million students annually, the nation's community colleges are highly diverse (AACC, 2020). They serve as the entry point to higher education for many low-income, historically underserved, and first-generation students (AACC, 2020). Black students are more likely to attend a community college than non-minority students (Shapiro et al., 2018).

Community colleges are also the primary producers of the nation's associate degrees—degrees that will be a substantial driver of meeting the job needs of a growing United States economy (Carnevale et al., 2018). According to the most recent national data from the National Student Clearinghouse (NSC), one in three students begin their college journey at a community college (NCES, 2019). However, only 40% finish a degree or credential within 6 years (NCES, 2019). Students of color complete college at a much lower rate (NCES, 2019). Black students complete community college at 32%—a rate 16% lower than White students (Lumina, 2021a.).

This research examined and explored institutional characteristics that influence the community college completion gap between Black students and White students. This national study identified community colleges with the highest achievement rates among Black students to further probe the institutional programs, initiatives, culture, and policies contributing to institutional success. This chapter identifies recent literature that provides

the study's background, a statement of the problem, the theoretical framework that offers concepts essential to the study, the purpose, and a description of the research objectives.

Background

As a result of globalization, automation, and the growth of a networked economy, two out of three jobs will require education beyond high school (Carnevale et al., 2019a). As this trend continues, the nation will shift from a manual work economy to a knowledge economy, increasing the demand for skilled and educated workers (Carnevale et al., 2019a). According to the Lumina Foundation (2021a), of the U.S. residents ages 25 to 64, 8.1% have a short-term certificate or certification, 9.2% hold an associate degree, and 21.4% hold a baccaulaurette degree, and 12.5% hold a graduate or professional degree. With only 51% of American workers ages 25 to 64 having a credential beyond high school, the nation will not meet the predicted 2025 job growth and demand (Lumina, 2021a). If postsecondary completion rates do not improve, upwards of 15% of working-age adults will not be able to participate in the nation's workforce in a meaningful way, and employers will go without the talent and skills needed to thrive and grow. Colleges and universities must respond to this growing demand from employers and help close the nation's workforce gaps (Carnevale et al., 2019a).

Overall, 59.7% of all postsecondary students complete a degree within 6 years of entering college (Shapiro et al., 2019). This rate totals 76.5% at private non-profit colleges, 66.7% at public 4-year colleges, 42.4% at private for-profit 4-year colleges, and 40.8% at public 2-year community colleges (Shapiro et al., 2019). And while community colleges have improved degree completion over the past several years, these institutions have been historically low when compared to other sectors of higher education (Shapiro

et al., 2012; Shapiro et al., 2013; Shapiro et al., 2014; Shapiro et al., 2015; Shapiro et al., 2016a; Shapiro et al., 2017; Shapiro et al., 2018).

Furthermore, community colleges offer open access admissions practices and geographic convenience, falling within commuting distance of over 90% of the U.S. population. Community colleges further increased access through robust online learning environments in recent years. Community colleges cost one-third of 4-year public institutions annually and enroll nearly half of all college students, of which Black and Hispanic students are the majority (AACC, 2020). Community colleges enroll more than 12 million students, or about 41% of all college students (AACC, 2020).

When disaggregated by race and ethnicity, community college completion rates show that White and Asian students have the highest completion rates of 49% and 51%, respectively, and Black and Hispanic students have the lowest rates of 28% and 36%, respectively (NCES, n.d.). And while individual colleges may be working to understand their data to explore ways to be more effective for more students, opportunities exist to scale those efforts by comparing colleges and identifying trends to inform these efforts, specifically as they relate to minority students (ATD, 2020). In recent years, these gaps between racial groups have been the topic of several studies (Ciocca-Eller & DiPrete, 2018; Nicholas & Anthony, 2021). Still, research lacks specific institutional factors that contribute to closing these gaps.

Statement of the Problem

Ideally, success rates among community college students should be equitable across races (Carnevale et al., 2019a; Lumina, 2021b). In reality, many minority groups complete college at much lower rates than non-minority groups, impacting employment

opportunities among minority groups (Lumina, 2021b). Estimates show that by 2025, almost two out of three jobs in the nation will require at least some postsecondary education or training, and jobs with the fastest growth rate will require an associate degree (Carnevale et al., 2019b). By increasing community college completion rates among Black community college students, the United States can effectively meet current and future workforce and human capital needs and compete in the global economy (Lumina, 2021a). This study aims to identify institutional practices contributing to equitable completion outcomes between Black and White community college students.

Purpose Statement

The purpose statement provides the researcher with a roadmap to the study by taking into account the study design, approach, and outcomes (Creswell, 2013). This study aims to identify institutional characteristics and behaviors that close community college completion gaps between Black and White students and inform policies and practices that will close them. Closing postsecondary completion gaps between Black and White students means lessening the human capital disparities among Black individuals, allowing for participation in the nation's current and future workforce (Turner, 2018). The study will take an asset-based approach, examining community colleges demonstrating success in graduating Black students. The study will identify and examine institutional policy characteristics that promote increased success rates among minority student groups. These efforts aim to assist individual community colleges by informing administrative policies, practices, and behaviors that lead to success for all students.

Significance of the Study

The nation's demand for skilled and trained workers outpaces its supply. Researchers identify equitable outcomes among Black community college students as a weak link in the nation's higher education to workforce supply chain (Lumina, 2021b). Community college completion has been studied for the past decade, but only in recent years have researchers identified and hypothesized reasons for the significant gap in the completion rates of Black and White students. This is a gap that, if closed, could result in thousands of additional degrees and trained workers each year. This research will focus on increasing the supply of skilled workers to meet America's demand by identifying the determinants of student success for Black community college students, who currently complete a postsecondary credential of value at a much lower rate than their White counterparts.

While many studies demonstrate a gap between Black and White community college student completion rates, little national research exists on why Black students fail to complete a postsecondary credential of value at the same rates as their White counterparts. This study represents an effort to address workforce shortages by closing the completion gap between Black and White community college students to increase the number of qualified workers entering America's employment pipeline. This information can be instrumental in shaping institutional-level policy and practice related to increasing the postsecondary degrees or credentials necessary to fuel the U.S. economy.

Research Objectives

This research investigates completion rates between Black and White students across the nation's community colleges. It investigates one central research question:

What institutional-level factors and behaviors serve to eliminate gaps in college completion rates between Black and White community college students?

Research objectives serve as a guide in conducting successful scholarly research. Research objectives should be clearly defined and well-structured (Roberts, 2010). According to Creswell (2013), such objectives allow the researcher to align the intended research objectives and outcomes, driving study characteristics, including design, data collection, and data analysis.

This research explored the evolution of the community college and its success, providing equitable success outcomes for all students. This mixed-methods study investigated the differences in completion rates between Black and White community college students and examined gaps in completion from the institutional perspective. The research had six primary research objectives (ROs):

RO1 – Compare completion rates between Black and White students.

RO2 – Describe institutional characteristics, including college affordability and financial aid, instructional investment, student services, and other institutional characteristics.

RO3 – Investigate institutional data and determine predictive factors positively influencing equity gaps in community college student success.

RO4 – Describe interview participant demographics.

RO5 – Explore institutional alignment with equity-mindedness indicators.

RO6 – Explore institutional behaviors that positively affect racial equity gaps in community college completion.

Conceptual Framework

According to Corbin and Strauss (2008), a conceptual framework can help researchers identify an appropriate study methodology. A conceptual framework can be an illustration or description that highlights relevant theories and concepts and outlines the interplay between variables related to the overall purpose of the research (Merriam, 1998). The conceptual framework involves six research objectives. These objectives, once met, determine the results of the study. Results intend to help community colleges learn how to close academic achievement gaps between Black and White students. Most importantly, this national study will provide research-based information for community college leaders and practitioners to replicate at their institutions.

The overall intent of this study is to strengthen the human capital of the U.S. workforce. Three theories serve as a foundation for this study to identify institutional factors that improve community college completion among Black students. Human capital theory explains that postsecondary education matters and should be accessible and attainable by all students. Anti-deficit theory highlights the value of targeting colleges doing well in degree completion rather than studying less successful colleges. Equity-mindedness theory provides a way to examine the culture, programs, and initiatives within community colleges through a lens of equity. These three theoretical frameworks offer a balanced approach to the research objectives of this project.

The conceptional framework, shown in Figure 1, illustrates the relationship between the research objectives and the flow of the study. It begins with an investigation of the variables of interest (RO1 & RO2) and determines which, if any, have an impact on closing completion rate gaps between Black and White students (RO3). Colleges were

selected for interviews based on asset theory by determining which schools are doing well and have a zero or near zero completion rate gap between Black and White students (RO4). Interviews were conducted to determine institutional characteristics driving successful outcomes (RO5 & RO6).

The methodology of the study is mixed methods and works from the assumption that detailed interviews were necessary to fully meet the goals of the research. The quantitative analysis precedes the qualitative investigation so that findings could be included in the interview discussions.

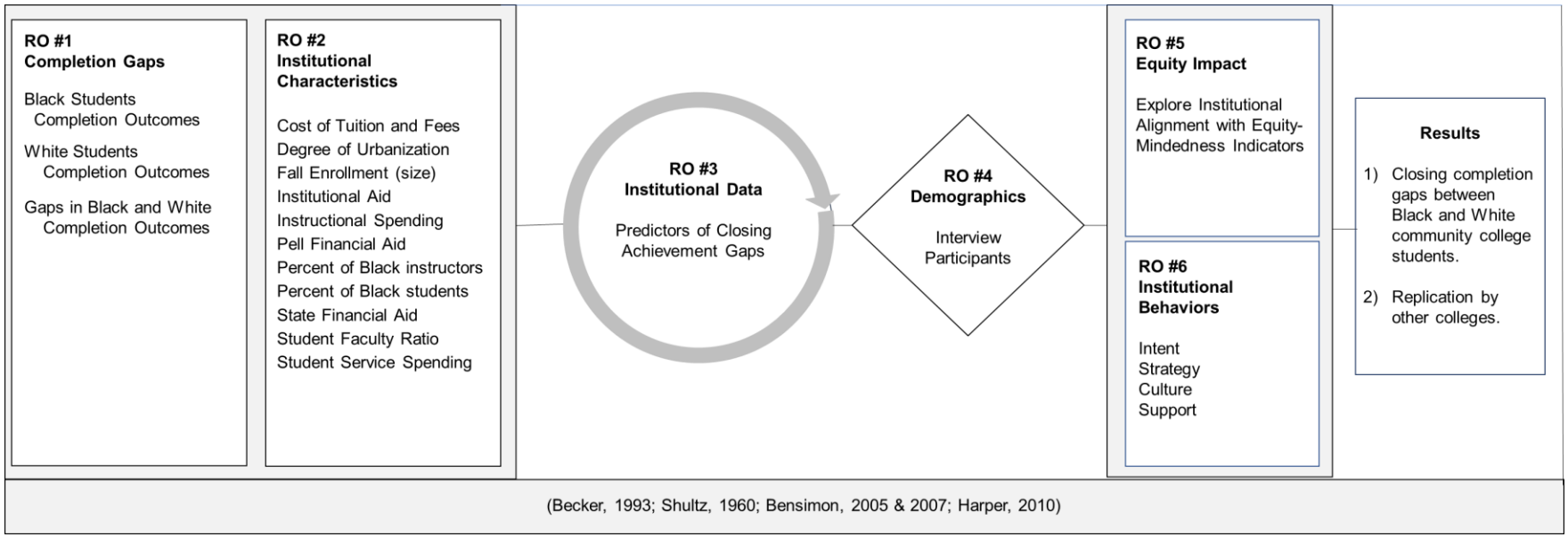


Figure 1. Model for Identifying Factors That Close Community College Completion Gaps Between Black and White Students

Assumptions of the Study

Assumptions are statements or beliefs taken to be true relative to a study (Roberts & Hyatt, 2019). The initial phase of this study will investigate publicly-available, institutional, aggregate-level data on community colleges. These data include student characteristics, success outcomes, financial aid amounts and types, and other information (NCES, n.d.). These data are reported annually by all public 2-year colleges on a similar cycle (NCES, n.d.). This study assumes these data are true and accurate. It also assumes that institutional data collection and reporting of institutional data were consistent across all institutions in the study, and all students in the college truthfully reported their race and ethnicity data. The researcher assumes (a) the sampling method provides a list of colleges willing to participate in the study; (b) participant responses to interview questions are honest and accurate; and (c) participants understand the questions and will respond truthfully and thoroughly.

Delimitations of the Study

Delimitations of a study are purposefully-created limitations resulting from choices the researcher makes to manage the feasibility of the study while still aligning with the desired research goals (Creswell, 2013). Because this study examines institutional behaviors, rather than student-level behaviors, this model does not account for the individual differences in students, such as their family background, educational goals, income levels, pre-college schooling, and other pre-entry attributes included in many accepted conceptual frameworks of student retention and completion in higher education (Astin 1977, 1984, 1985; Kuh 1999, 2003; Pace 1980; Pascarella & Terenzini 1991, 2005; Tinto, 1975). Student-level behaviors and characteristics were not included as a

part of this study, in part, because student-level data is not widely available or included in the national dataset used as a part of this research.

Another delimitation of the study arises from the primary source of data used in this study. This study extensively uses the Integrated Postsecondary Data System (IPEDS) survey data. IPEDS graduation rates report an institutional aggregate rate of students completing college within 150% of the normal time rate of student time to degree, using each college's first-time, full-time student cohort. For a 2-year associate degree, 150% is 3 years of tracking time; for a 2-year certificate, students are tracked for 18 months, and so on. However, most community college students do not attend full-time (AACC, 2020). The NSC reports that only 30% of community college students transfer to a 4-year college or university. Of these, only 39% complete their associate degree from a community college before transfer (NCES, 2019). These factors have been the driving force in criticism for using IPEDS completion data to measure the effectiveness of community colleges. Even though the use of IPEDS data is somewhat controversial, the data are collected from colleges simultaneously, using consistent definitions, and from all institutions of higher learning. For these reasons, most researchers agree that IPEDS is a valuable tool for determining differences between colleges (Bailey & Alfonso, 2005; Bailey et al., 2006).

An additional delimitation of this study includes the researcher's decision to interview only individuals who serve as administrative officers at community colleges. For this research, administrative officers include key decision-makers who provide leadership and expertise within the institution's governance structure (SACSCOC, 2020). Administrative officers include highly qualified, credentialed, executive-level officers

who provide professional judgment and leadership centered around accomplishing the institution's mission (SACSCOC, 2020). Interviews with students, instructors, or faculty members could further inform this study. However, limiting the research to administrative officers will allow the researcher to explore the factors and intentional institutional strategies that may be influencing favorable graduation outcomes among their Black student population.

Definitions of Terms

The vocabulary of higher education, and particularly at the community college level, have different interpretations depending on the higher education research experience level of the reader. These definitions offer a concise reference for concepts and words used throughout this research. Providing them here eliminates misunderstanding in their use and avoids the need to define them within the body of the research.

1. *Academic support*–A functional expense category including activities and services that support the institution's primary missions of instruction, research, and public service consisting of the retention, preservation, and display of educational materials (for example, libraries, museums, and galleries); organized activities that provide support services to the academic functions of the institution (such as a demonstration school associated with a college of education or veterinary and dental clinics if their primary purpose is to support the instructional program); media such as audiovisual services; academic administration (including academic deans but not department chairpersons); and formally organized and separately budgeted academic personnel development and course and curriculum

development expenses. Also included are information technology expenses related to academic support activities (NCES, n.d.).

2. *Associate degree*–An award usually requiring at least 2 but less than 4 years of full-time equivalent college work (NCES, n.d.).
3. *Bachelor's degree*–An award (baccalaureate or equivalent degree, as determined by the Secretary, United States Department of Education) that normally requires at least 4 but not more than 5 years of full-time equivalent college-level work (NCES, n.d.).
4. *Career and Technical Education*–Programs and courses that focus on the skills and knowledge required for specific jobs or occupations (NCES, n.d.).
5. *Certificate*–A recognized postsecondary credential conferred upon the satisfactory completion of a postsecondary education program (NCES, n.d.).
6. *Community college*–A public 2-year postsecondary college that is regionally accredited to award the associate in arts or the associate in science as its highest degree (Cohen & Brawer, 2008).
7. *Educational equity*–Educational equity means that every student has access to the resources and educational rigor they need at the right moment in their education, despite race, gender, ethnicity, language, disability, family background, or family income (Aspen Education & Society Program and the Council of Chief State School Officers, 2017).
8. *Equity-mindedness*–Refers to the perspective or mode of thinking exhibited by practitioners who call attention to patterns of inequity in student outcomes (CUE, n.d.)

9. *Financial aid*–Federal Work-Study, grants, loans to students (government or private), assistantships, scholarships, fellowships, tuition waivers, tuition discounts, employer aid (tuition reimbursement), and other monies (other than from relatives/friends) provided to students to meet expenses (NCES, n.d.).
10. *Good job*–A job that pays family-sustaining earnings. Good jobs pay a minimum of $35,000 ($17 per hour for full-time jobs) for workers between the ages of 25 and 44 and at least $45,000 ($22 per hour) for workers between the ages of 45 and 64 (Carnevale et al., 2019b).
11. *Human Capital*–An individual's experience, training, education, or knowledge as they relate to their human ability, productivity, and contributions within the context of work and organizational impact (Becker, 1993).
12. *Instruction*–A functional expense category that includes expenses of the colleges, schools, departments, and other instructional divisions of the institution and expenses for departmental research and public service that are not separately budgeted, including general academic instruction, occupational and vocational instruction, community education, preparatory and adult basic education, and regular, special, and extension sessions. Instruction also includes expenses for both credit and non-credit activities but excludes expenses for academic administration where the primary function is administration (e.g., academic deans) (NCES, n.d.).
13. *The National Center for Educational Statistics (NCES)*–An entity within the federal government that publishes the IPEDS surveys (NCES, n.d.).

14. *Open admission*: Admission policy whereby the school will accept any student who applies (Cohen & Brawer, 2008).
15. *Public institution*–An educational institution whose programs and activities are operated by publicly elected or appointed school officials and supported primarily by public funds (NCES, n.d.).
16. *Race/ethnicity*–Categories developed in 1997 by the Office of Management and Budget used to describe groups to which individuals belong, identify with, or belong in the eyes of the community. The categories do not denote scientific definitions of anthropological origins. These designations categorize United States citizens, resident aliens, and other eligible non-citizens (NCES, n.d.).
17. *STEM*–An acronym that describes science, technology, engineering, and math (U.S. Department of Education, n.d.).
18. *Student services*–A functional expense category that includes expenses for admissions, registrar activities, and activities whose primary purpose is to contribute to students' emotional and physical well-being and their intellectual, cultural, and social development outside the context of the formal instructional program. Examples include student activities, cultural events, student newspapers, intramural athletics, student organizations, supplemental instruction, and student records. Except when operating as self-supporting auxiliary enterprises, intercollegiate athletics and student health services fall under the umbrella of student services. The term also may include information technology expenses related to student services activities unless the institution separately budgets and

expenses information technology resources. Institutions include actual or allocated costs for interest and depreciation (NCES, n.d.).

19. *Tuition and fees*–The amount of tuition and required fees covering a full academic year most frequently charged to students. These values represent what a typical student would be charged and may not be the same for all students at an institution. If charged on a per-credit-hour basis, the average full-time credit hour load for an entire academic year provides the basis to estimate average tuition. Required fees include all fixed sum charges required of such a large proportion of all students that the student who does not pay the charges is an exception (NCES, n.d.).

Organization of the Study

The chapters in this study follow the outlined structure: Chapter I provides an overview of the study and includes the introduction, background, statement of the problem, purpose statement, research questions, research objectives, the significance of the study, conceptual framework, assumptions, delimitation, and operational definitions. Chapter II will provide a comprehensive review of scholarly literature relating to America's community colleges, historical policies and practices impacting educational outcomes among Black students, and the resulting workforce gaps. Chapter III will explain the methodology used to conduct this mixed-methods study. Chapter IV will provide an analysis of the data and emerging themes. Chapter V will provide a summary discussion of the findings and make recommendations for future scholarly research.

Chapter Summary

The nation's current workforce demand outpaces its supply of trained, skilled workers. By 2025, estimates show that almost two-thirds of U.S. jobs will require postsecondary education or training (Carnevale, 2019a). Jobs with the fastest growth rate will require an associate degree (Carnevale et al., 2019a).

Community colleges, or America's colleges, were established to educate the masses, especially low-income, minority, and first-generation student populations. As a result, they are the entry point to higher education for many Black students. Community colleges are also the primary producers of the nation's associate degrees—degrees that will be a significant driver of meeting the job needs of a growing United States economy (Carnevale, 2019a; Lumina, 2021a).

This research focuses on the relationship between the nation's workforce and human capital needs and increasing postsecondary attainment among Black community college students. This research intends to examine and explore the historical factors that have impacted college completion rates among Black students and the patterns and variables that correlate with higher outcomes and look even closer at the operations of colleges doing the very best job with Black student graduation outcomes. By closing the equity gap in postsecondary attainment between Black and White community college students, the United States will better meet current and future workforce needs and is competitive in the global economy.

CHAPTER II – LITERATURE REVIEW

This study aims to identify the determinants of student success among minority community college students in the United States and contribute to the body of knowledge related to understanding educational equity gaps between racial groups. In addition, this study will investigate institutional-level characteristics associated with more equitable postsecondary outcomes for racial minority groups. This chapter provides the theoretical basis for this study. The structure provides a basis for this study according to the following sections: (a) America's community colleges; (b) the community college student success agenda; (c) equity in higher education; and (d) efforts to improve equitable student success outcomes for community college students.

Theoretical Foundations

Three theories provide a basis for this study. Human capital theory underscores postsecondary education’s individual and collective value and the need for accessible education (Becker, 1993; Carnevale & Cheah, 2018; Heckman et al., 2008; Schultz, 1960; Wahrenburg & Weldi, 2007). Anti-deficit theory seeks to highlight and understand successful outcomes rather than focusing on unsuccessful ones (Harper, 2010, 2012). Based on an anti-deficit paradigm, anti-deficit theory provides a lens by which the researcher can examine success strategies to close equity gaps among community college students to understand further and scale those institutional characteristics and behaviors. Equity-mindedness theory provides a way to see beyond surface-level indicators to understand the impact of college culture on the programs and initiatives driving equity-based initiatives and outcomes within these colleges (Bensimon, 2005). Three theories

guide this mixed-methods study to determine institutional factors that close completion gaps between Black and White community college students.

Human Capital Theory

According to human capital theory, higher education leads to economic growth through increased productivity, social stability, and healthier lifestyles (Becker, 1993; Schultz, 1960). Higher education support has waned in recent years, and community colleges experienced declining enrollments (Carnevale & Cheah, 2018). However, levels of educational attainment remain the strongest predictor of earnings, and generally, more education yields increased earnings (Carnevale & Cheah, 2018). Studies support a strong causal relationship between education levels and increased lifetime earnings (Heckman et al., 2008; Wahrenburg & Weldi, 2007). In a national study of earnings and degree completion, the median earnings for a high school graduate were $36,000, $47,000 for an associate degree earner, and $62,000 for a bachelor's degree earner (Carnevale & Cheah, 2018). Policymakers generally accept that higher levels of education yield higher economic outcomes for the individual and the nation resulting in the investment of trillions of dollars into the creation and sustainability of public 4- and 2-year colleges. In 2018, the Federal Government invested $98 billion in student financial aid and $41 billion in grants into the nation's higher education sector (US DOE, 2018).

Anti-Deficit Theory

Research, in most cases, places the blame for lack of academic success squarely on the student's prior experiences and environmental circumstances. For example, research shows that variables such as age, high school GPA, and parent's education level are associated with persistence in Black students (Carroll, 1988; Hagdorn et al., 2001;

Pascarella et al., 1986; Perrakis, 2008; Webb, 1989). This research predicates on the opposite of deficit thinking—seeking to highlight the successful work of institutions and their students for closing equity gaps between Black and White student achievement.

Harper (2010, 2012) developed the anti-deficit achievement framework to understand and highlight the factors associated with students of color who successfully navigate postsecondary education in science, technology, engineering, and mathematics (STEM) programs. The model explores dimensions like most other student retention models, such as pre-college readiness, college achievement, and post-college success. Still, users of the model explore the student's journey through the lens of successes instead of failures. For example, the model determines academic experiences in which Black students earn GPAs above 3.0 in majors for which they were academically underprepared (Harper, 2012). The anti-deficit thinking paradigm guides this study in exploring the institutional factors associated with equitable outcomes for the persistence and completion of Black and White students.

Equity-Mindedness Theory

Equity-mindedness theory was derived from the work of Bensimon (2005) and is a multidimensional theoretical construct derived from concepts of social justice, fairness, and human agency articulated in several disciplines, including critical race theory, feminist theory, and critical discourse analysis (Bensimon & Malcolm, 2012). From the perspective of higher education, it refers to the awareness of the socio-historical context of exclusionary practices and racism. It attributes unequal outcomes to institutional-level bias and dysfunction (Bensimon, 2007).

Through the Center for Urban Education (CUE) work at the University of Southern California, researchers developed an equity-mindedness framework for institutions to assess and develop the practice of equity-mindedness on college campuses (Bensimon & Malcom, 2012). This assessment tool is the first framework to operationalize equity as a primary means to improve student success in postsecondary education. The framework consists of 12 probing questions designed to help colleges and universities develop an equity-minded culture. CUE's equity-mindedness framework warrants the need for institutions to view inequities as a dysfunction of the various structures, policies, and practices they can control, not student behavior. "Equity-Minded" individuals question their assumptions, recognize stereotypes that harm student success, and continually reassess their practices to create change (CUE, n.d.).

The American Community College

Community colleges, first known as junior colleges, developed at the turn of the 20th century when a group of university presidents expressed a need to relieve 4-year colleges of the burden of teaching general education classes. They believed that if universities were not responsible for the first and second years of college, 4-year schools could devote university resources to research and professional training (Drury, 2003; Cohen & Brawer, 2008). At the same time, the nation's public high schools were seeking new ways, including vocational education, of serving their communities beyond a high school diploma (AACC, n.d.). These two forces came together to create a new higher education sector in the United States by establishing the first junior college in Joliette, Illinois, in 1901 (Cohen & Brawer, 2008).

The growth of community colleges was slow at the first of the century, but expansion persisted as the nation pushed for universal education (Cohen & Brawer, 2008). Community colleges were established at a rate of one new college every week by the end of the 1960s (Cohen & Brawer, 2008). The GI Bill, the Baby Boom, the Civil Rights movement, the nation's need for a skilled workforce, and a robust national economy contributed to the growth of community colleges (Cohen & Brawer, 2008). As community colleges grew in number, they also grew in purpose. Their names changed from junior colleges to community colleges to bring awareness to their comprehensive missions and service within the community, and by 1998, there were 1,600 community colleges across all 50 states (Cohen & Brawer, 2008; Coley, 2000).

Today's community colleges offer a wide variety of credit and non-credit courses and programs (AACC, 2021). For 2021, the American Association of Community Colleges reported 6.8 million students attending credit programs and 5 million in non-credit programs in the nation's community colleges, nearly one-third of all United States undergraduate students (AACC, 2021). Two-thirds of all community college students attend part-time, and most (62%) also work while going to college. Most community college students (59%) receive federal, state, or institutional financial aid to attend college, with 34% receiving federal Pell grants, 22% receiving state aid, and 7% receiving institutional support. The median age of community college students is 24, and 57% are female (AACC, 2021).

Studies show that America's community colleges serve as an entry point to higher education for millions of people, particularly low-income, minority, and first-generation students (Cohen & Brawer, 2008; Mullin, 2012; Pew Charitable Trusts, 2012; Wang et

al., 2017). Community colleges offer geographic convenience and affordability (Heller, 1997; Hemelt & Marcotte, 2011; Jackson & Weathersby, 1975; Leslie & Brinkman, 1987; Paulsen & Smart, 2001). Community college tuition is roughly one-third the cost of attending a public 4-year college or university (AACC, 2021). In 2021, the average annual community college tuition totaled $3,770 and $10,560 for a 4-year college or university annually (AACC, 2021).

In addition to being a more affordable choice than 4-year colleges, community colleges offer online classes, flexible schedules, and geographic accessibility, making community colleges accessible and convenient for students in rural and urban areas (AACC, n.d.). As a result, community colleges have a racially and socially diverse student population.

According to the American Association of Community Colleges (n.d.), the racial demographics of 2019 community college students included 44% White, 27% Hispanic, 13% Black, 6% Asian/Pacific Islander, and 1% Native American. The remaining students reported two or more races, 4%, unknown origin (4%), or nonresident aliens (2%). Other significant demographics of 2019 community college students included part-time status (65%); first-generation students (29%); students with disabilities (20%); single parents (15%); and veterans (5%). Of the 2019 community college student cohort, 59% received financial aid of some kind.

An economic impact study showed that America’s community colleges and their students made up approximately 5.4% of the nation’s 2012 gross domestic product, or $809 billion (EMSI, 2014). This study demonstrated that community colleges generate other positive societal benefits, including improved health, reduced crime rates, and

reduced unemployment. In another study of 2,017 rural counties in 44 states between 1976 and 2004, researchers found that counties with an established community college experienced significantly more job growth than those without one (Crookston & Hooks, 2012). Research indicates that all types of postsecondary institutions create spillover effects by creating jobs for faculty, staff, and other employees who support the operations of the colleges (Siegfried et al., 2007). Assertions that community colleges further contribute to local employment growth emphasize the community college contribution to human capital development. Community colleges serve as producers of human capital by providing skill-specific training and credentialing, leading to employability, often in middle-skill jobs (Siegfried et al., 2007).

In a study of educational paths leading to good jobs, Carnevale and Strohle et al. (2018) classified the work of community colleges as contributing to the middle-skills pathway. The middle-skills pathway comprises workers with more education than a high school diploma but less than a BA, including certificates, certifications, licenses, associate degrees, and some college coursework. Workers with middle skills have 16 million good jobs, or 24 % of all good jobs, and 56% of all good jobs require a bachelor's degree (Carnevale & Cheah, 2018). The study defined a good job as paying at least $35,000 for workers ranging in age from 25-44 and at least $45,000 for workers ages 45-64. Lumina, one of the largest funders in higher education, tracks each state's progress toward 60% of working-age adults having post-high school credentials by 2025. To do this, the United States will need an additional 3.3 million associate degrees and 69 million short-term credentials. Community colleges will play a significant role in meeting the nation's future workforce needs as the primary producer of the nation's associate

degrees and short-term credentials. Because of their work in transfer credits, they also contribute to the bachelor's pathway to good jobs (Carnevale & Cheah, 2018).

College Credit Transfer Preparation

Transfer from a 2-year college to a 4-year college to pursue bachelor's and other advanced degrees remains a vital part of the community college mission. Transfer from a 2-year community college to a 4-year college or university is a common strategy students use to pursue a 4-year degree. In a national study of completers at 4-year colleges and universities, almost half (46%) of the nation's bachelor's degrees were students with at least some course credits from a community college (Turk, 2019). As a result, conversations about community college transfer credits are at the forefront of national policy discussions and community college advocacy, with more than 75% of states having implemented policies designed to increase student transfer rates from community college to 4-year colleges (Mullin, 2012; Wyner et al., 2016).

While many students use community college as a pathway to a bachelor's degree, gaps in transfer success remain. Surveys have indicated that as many as 80% of students who start at a community college have a goal of completing a bachelor's degree (Horn, 2009; Horn & Skomsvold, 2011). However, in the latest research from the NSC (2020), studying the transfer patterns of all fall 2013 first-time degree-seeking students found that only 14% earned a bachelor's degree within 6 years of entering college. In addition, this study showed that lower-income students were half as likely as other students to transfer to a 4-year college and complete a bachelor's degree. Aside from affordability, gaps in credit mobility between 2- and 4-year institutions contribute to gaps in transfer success

among community college transfer students (Hodara et al., 2016; Mullin, 2012; Umbach et al., 2018; Wyner et al., 2016).

Several research studies examine transfer credits from community colleges to 4-year colleges and universities (Hodara et al., 2016; Jenkins & Fink, 2016; Stern, 2016). These studies suggest that, while many states have legislatively defined transfer credit policies mandating 4-year colleges accept credits to transfer, each 4-year college can use discretion to determine what counts for credit toward a bachelor's degree program. This loss of credit at the program level remains a common factor disrupting bachelor's degree attainment among community college transfers (Hodara et al., 2016; Umbach et al., 2018).

Career and Technical Education

In addition to providing transfer preparation, community colleges offer career and technical education (CTE) programs. These workforce-ready programs offer associate degrees and short-term certificate training for entry-level jobs in business and industry (Cohen & Brawer, 2008). These programs range from 6 months to 2 years and center around local and state employment needs and often high-demand jobs. Many CTE programs lead to industry certification. While not an exhaustive list, examples of CTE programs include welding, cyber security, emergency medical technician, dental technician, industrial maintenance, electrical technology, practical nursing, plumbing, and construction technologies.

CTE requires significantly more financial resources than other community college programs. The equipment and facilities costs for CTE practice learning environments far exceed the average student tuition for these programs. The federal government recognizes

this in a series of bills offering financial support for CTE programs. Beginning with the Vocational Act of 1973, the federal government provides additional funds to support CTE programs at community colleges and high schools approximately every ten years. *The Strengthening Career and Technical Education for the 21st Century Act* was signed into law by President Donald Trump on July 31, 2018 (PCRN, 2018).

Labor market studies of students completing CTE programs in community colleges demonstrate favorable outcomes. Recent studies have shown that students completing CTE certificate programs increased earnings from 7% to 30%, with the highest increase in health occupation programs (Cellini & Turner, 2019; Jepsen et al., 2014; Stevens et al., 2018). Carnevale et al. (2018) demonstrated that the share of good jobs for high school graduates has declined in nearly every state, while associate degree holders' share of good jobs with CTE majors has increased. Another study showed that CTE credentials narrow the gender pay gap significantly. Wage gaps in Oregon start at nearly $15,000 before men and women enter certificate programs, but narrow considerably to just over $7,000 4 years after program completion (Carnevale & Cheah, 2018).

Continuing Education and Community Service

In the United States, companies spend $413 billion on employee training annually, representing a substantial investment in the nation's human capital (Carnevale et al., 2015). In addition to providing transfer preparation and workforce-ready CTE programs, community colleges support employee training by providing non-credit workforce training directly to employers or individuals. Depending on employment patterns, community college non-credit program enrollment may enroll more students

than credit-bearing programs (Bailey et al., 2003). In addition, these short-term courses or training sessions respond promptly to shifting workforce demands in the local community. Skills range from technological needs to advanced professional development and could result in industry-recognized certificates.

Community colleges also support social needs, including non-credit courses for high school equivalency, Adult Basic Education, English as a Second Language, developmental education, and recreational classes. These functions provide a pathway for anyone, including a high-school dropout, to receive a college degree (Bailey et al., 2010). According to Lumina's Stronger Nation (2021a) report, 10.5% of Americans do not have a high school diploma. Other research shows that over two-thirds of community college students are unprepared for college and take at least one developmental education course to prepare for college-level coursework (Chen, 2016). The cost of these programs totals over 8.3 billion each year (Jimenez et al., 2016).

Community College Student Success Agenda

The United States Higher Education Act was amended through the Student Right-to-Know and Campus Security Act (1990) to include the tracking of student cohorts to determine graduation rates for fall semester first-time, full-time students for all institutions of higher learning receiving Title IV funds. Since that time, the reported graduation rates of community colleges have been analyzed to determine benchmarks for success among colleges as well as institutional policies and characteristics that positively impact graduation rate performance.

Institutional Factors Influencing Completion Rates

Several researchers have utilized the IPEDS data on college completion rates to determine institutional factors affecting completion rates, establish benchmarks, and compare institutions. These studies have identified several variables influencing college completion rates at both the 2- and 4-year levels.

Multiple studies have confirmed that size matters in community college completion. As college enrollments increase, graduation rates tend to decrease (Bailey et al., 2005; Bailey et al., 2006; Goble et al., 2008, Jaeger et al., 2009; Pascarella & Terenzini, 2005; Toutkoushian & Smart, 2001). Some argue this is because of increased socialization and ease of communicating student learning priorities—both of which help make students feel a stronger sense of belonging on campus (Baily et al., 2005; Jaeger et al., 2009).

Studies also showed that colleges with a higher concentration of minorities tend to have lower graduation rates for all students (Bailey et al., 2005; Goble, et al., 2008; Jacoby, 2006). In the decade following this research, more minority students were completing college. Still, gaps remained, and recent data shows that Black Americans are less likely than White Americans to earn a college degree (Carnevale, 2019a).

Outcomes have been somewhat mixed when determining the impact of cost on college completion. In studies of 4-year institutions, increased in-state tuition correlated significantly with increased completion rates (Mortenson, 1997; Porter, 2000; Scott et al., 2006). In community colleges, the effects were somewhat the opposite. Calcagno et al. (2008) found a significant correlation between increased in-state tuition and decreased completion rates.

Spending on students has also positively impacted community college completion rates. As instructional and student services expenditures increased, graduation rates tended to increase (Bailey et al., 2005; Calcagno et al., 2008; Drukin & Kitcher, 2010). These three studies also showed that students in urban community colleges tended to have lower completion rates. In Bailey's study, students enrolled in rural institutions were 18 percent more likely to graduate than students from urban community colleges.

Colleges with larger student-to-faculty ratios have larger percentages of full-time faculty. Studies on completion rates found that colleges with larger numbers of full-time faculty tend to have higher completion rates (Bailey et al., 2005; Calcagno et al., 2008; Drukin & Kitcher, 2010; Ehrenbur & Zang, 2005; Harrington & Schibik, 2004; Jacoby, 2006; Jaeger & Eagan, 2009; Tincher-Ladner & King, 2014).

One of the most controversial experiments in educational research history, the Tennessee Star Experiment, was conducted in the 1980s and collected data to study the impact of same-race teachers on student success (Achilles et al., 2008). It found that Black students exposed to a single Black teacher by the third grade were 13% more likely to enroll in college, and students with at least two Black teachers by third grade were 32% more likely to enroll in college (Gershenson et al., 2017). Gershenson and his colleagues called this the "role model effect" and found that Black teachers tended to have higher expectations and accountability for their Black students (Gershenson et al., 2018).

The American Graduation Initiative

More than a decade ago, the nation's community colleges expanded their purpose from a student access mission to student access and student success mission—focusing not only on getting students into college but getting them through to completion that leads to gainful employment (Boggs, 2011). This uniform shift was in response to President Obama's American Graduation Initiative (AGI), a ten-year plan to leverage the work of community colleges to produce an additional five million students with degrees, certificates, or other credentials by 2020 (Obama, 2009). This goal was strengthened by the voices of community college presidents, trustees, faculty, and students when the American Association of Community Colleges (AACC); Association of Community College Trustees (ACCT); The Center for Community College Student Excellence (CCSSE); The League of Innovation in the Community Colleges (The League); National Institute for Staff and Organizational Development (NISOD); and Phi Theta Kappa Honor Society (PTK); released "Democracy's Colleges: Call to Action," a signed statement calling for community colleges to commit to increasing the number of credentialed students by 50% by 2020 (Boggs, 2012).

Performance-Based Funding

Many state legislatures have implemented performance-based funding models based on institutional outcomes such as graduation rates, retention rates, and licensure and job placement rates (NCSL, 2019). Several states have taken a targeted student-outcome approach by addressing high-demand fields such as STEM or programs leading to jobs in high-demand areas (Hearn, 2015; McLendon & Hearn, 2013). Performance-based funding practices for higher education exist in 41 states, but programs vary greatly

(NCSL, 2019). The percentage of a college's budget based on performance outcomes ranges from 3% to 100% (NCSL, 2019). Overall, statistical studies consistently fail to find that states with performance-based funding substantially improve student success outcomes (Dougherty, 2016; Rutherford & Rabovsky, 2014). More recent studies also confirm these findings. In a meta-analysis of more than 50 studies published between 1998 and 2020, researchers concluded that performance-based funding typically yields modest or no effects on institutional outcomes. In states where 100% of higher education funding is performance-based, researchers found no evidence of improved student success outcomes (Ortagus et al., 2020, Ward et al., 2021). Performance-based funding of community colleges contrasts with the traditional higher education funding model tied strictly to student enrollment.

Performance-based funding within the community college sector becomes particularly challenging, with roughly 60% of community college students underprepared for college-level courses (Baldwin, 2017; Jimenez et al., 2016). In a comprehensive study exploring the effects of performance-based funding in community colleges, researchers found no impact on average and mixed results in states where performance funding was associated with lower completions (Tandberg et al., 2014). Others argued that performance-based funding compromises the open-access mission of community colleges by placing outcomes above opportunity (Shulock & Jenkins, 2011). As states increase their ability to collect and analyze large amounts of data, policymakers continue to work towards more sophisticated performance-based models (Baldwin, 2017).

Promising Practices

From 2012 to 2014, the Center for Community College Student Engagement published a three-part series identifying high-impact practices that improve community college completion (CCCSE, 2012; CCCSE, 2013; CCCSE, 2014). These included student experiences such as orientation, accelerated developmental education, first-year experience seminar, student success course, learning community, academic goal setting and planning, experiential learning beyond the classroom, tutoring, and supplemental instruction. CCCSE's work affirmed many of the practices already in place at community colleges, such as tutoring, experiential learning, academic planning and advisement, and orientations, while encouraging more participation in student success courses and accelerated developmental education.

Student success courses help students complete college. Course curricula include time management, study skills, and test-taking skills (CCCSE, 2012). Several studies confirm the effectiveness of teaching students effective learning strategies through student success courses (Cho & Karp, 2013; Windham et al., 2014). Students enrolled in developmental education courses show improved outcomes. A student taking a student success course was 1.4 times more likely to pass a developmental math course, 4.49 times more likely to pass a developmental English course, and 5.22 more likely to pass developmental English (CCCSE, 2014). In an early study of four community colleges with accelerated developmental education programs, three out of four colleges helped a higher proportion of students succeed in first-year courses in English composition and mathematics (Jaggars et al., 2014). Over half of all states now mandate or recommend

developmental education reforms, and some states, including California, have eliminated the requirement for developmental courses (Hern, 2019).

Developmental education exists in nearly every community college in the nation (Cohen et al., 2014). These courses are necessary because most community college students are underprepared for college-level work (Bailey, 2009). Research has shown that most students do not complete developmental education coursework because they either stop out or fail (Bailey et al., 2010). Getting students through developmental coursework more quickly is a logical effort to address stop-out behaviors among underprepared students (Cohen et al., 2014). Today, accelerated developmental education serves as only one approach to the broader area of practice and research for developmental education reform.

Guided Pathways

Many community colleges have adopted the concept of the guided pathway as a framework to increase student success. Guided pathways start with the student's end goal and offer individualized supports and coursework to enable the student to meet goals (Bailey et al., 2015). *Redesigning America's Community Colleges* (2015) outlined the guided pathway framework, calling for a broad restructuring effort to help students navigate college by providing highly structured and integrated learning environments or "pathways" to student success.

The community college sector has widely embraced Guided Pathways as a holistic approach to student success. It encompasses reform efforts from all aspects of the student experience, from application to graduation. It includes comprehensive reform efforts for planning and advising, developmental education, course offerings and

availability, and student learning. It encompasses four pillars (Bailey et al., 2015): (a) Clarifying pathways to end goals, (b) Helping students choose and enter pathways, (c) Helping students stay on track, and (d) Ensuring that students are learning.

The greatest challenge to the pathway's framework has been communicating what it is to faculty, students, and others responsible for its implementation. Others have noted that a redesign as extensive as guided pathways is challenging during state budget cuts for community colleges (Hussak, 2018). Although data for improving student outcomes remains premature, surveys of students in community colleges engaged with guided pathways have shown improved student experiences. These include scaling up advising efforts, course offerings, career counseling, and active learning experiences (CCCSE, 2020).

Local Efforts to Increase Completion

Performance-based funding fueled a focus on completion rates by the colleges themselves. Most community colleges have institutionalized efforts to increase college completion resulting in some success in moving the needle on degree and certificate completion across the sector. A 2017 survey assessment of completion initiatives at U.S. community colleges found that 70% of colleges implemented at least one national-level initiative to increase college completion, and 88% of colleges had formulated local completion initiatives (Kilgore & Wilson, 2017). Community college completion initiatives vary in scope and level. Some call for broad restructuring and institutional change, and others focus on specific student populations and service-oriented approaches.

Equity: The Next Frontier

Embracing a mission of student success has helped community colleges increase completion rates. In a study of IPEDS data between 2009 and 2019, community colleges added 2.5 million degrees accomplishing only half of Obama's 2020 goal (Tincher-Ladner, 2020). Current community college completion rates are not keeping pace with the postsecondary attainment goals adopted by 46 states (Lumina, 2021b). While community colleges have enjoyed some success, the data show they must increase efforts to meet the workforce demands and develop human capital.

Despite overall gains in community college completion, the data continue to show gaps among race and ethnicity. These are particularly wide when disaggregated to show the progress of Black students. Not advancing beyond high school has significant economic consequences for Black workers, including higher unemployment rates relative to others (BLS, n.d.). These inequities result partly because reform efforts have been geared to "all students" and remain void of addressing the specific needs and barriers of Black students.

The History of Equity in Higher Education

The United States faces an urgent and growing need for a skilled and educated workforce. To meet current and future workforce projects, more people of all races will need a postsecondary credential of value beyond a high school diploma to participate in and contribute to the workforce in a meaningful way. Only 51.3% of working-age Americans have completed a credential of value beyond high school (Merisotis, 2015). The low levels of postsecondary degree attainment in the United States are largely due to a long-standing problem with equity in college access and degree completion.

The Declaration of Independence declared all men free and equal by national right, but it would be 115 years before the nation began addressing equity in higher education. Established after the Civil War, a second Morrill Act in 1890 provided the first public funding for higher education for Black students in the United States (Thelin, 2011). This law provided federal funds from the sale of public land to establish at least one public university in each state. The colleges established through the Morrill Act became known as land-grant colleges and universities. The second Morrill Act also stipulated that Black students have access to attend these institutions without discrimination. For states with racially segregated public higher education systems, the second Morrill Act required states to provide a college for Black students, thus establishing colleges and universities known as Historically Black Colleges and Universities (HBCUs) (Lovett, 2011).

The Supreme Court's ruling in *Plessy v. Ferguson* in 1896 established a "separate but equal" doctrine by denying that segregated railroad cars for Black people violated the 13th and 14th amendments (Thelin, 2011). Based on this ruling, segregation became more prevalent in many areas of public life—including education. By many accounts, this ruling began the Jim Crow era, allowing state and local laws centered around legalized racial segregation efforts. For higher education, it translated into creating HBCUs for the postsecondary education of Black students. The history of discriminatory policies and practices developed equity gaps that prevent racial minorities from getting ahead educationally and economically.

The separate but equal doctrine significantly reduced access to higher education for Black people. However, the law would prove helpful for entry into graduate and

professional degree programs such as law, medical, and engineering—programs not available at many HBCUs. In *Sipuel v. Board of Regents of the University of Oklahom*a in 1948, the Supreme Court ruled that a state must offer the same academic and programming opportunities for Black and White students. In *MacLaurin v. Oklahoma State Regents*, Black students must receive the same treatment as White students. In *Sweatt v. Painter* in 1950, states had to provide education facilities of comparable quality for Black and White students. These cases, and others to follow, showed that Black and White students were separate but far from equal.

For 6 decades, the separate but equal doctrine continued to uphold racial discrimination and the segregation of Black and White students. Until *Brown v. Board of Education* in 1954, the Supreme Court would reverse the *Plessy* decision. The *Brown* case was a consolidation of five cases arguing the constitutionality of state-sponsored segregation in public schools. In this landmark case, the Supreme Court unanimously ruled that segregated schools were inherently unequal and that the separate but equal doctrine had no place in public education. *Brown v. Board of Educatio*n became one of the cornerstones of the civil rights movement, which led to the passage of the *Civil Rights Act of 1964*, the *Voting Rights Act of 1965*, and the fair housing provision of the *Civil Rights Act of 1968.*

In the more than 50 years since landmark laws protecting civil rights were enacted, disparities between Black and White Americans remain. Current data show that Black Americans are less likely than White Americans to earn a college degree (Carnevale, 2019a). Black Americans also earn lower wages than their White counterparts (Carnevale et al., 2019a). According to Rothstein (2014), school

segregation, higher education funding, and discriminatory housing practices have positioned Black Americans behind their White counterparts in educational attainment, income, and wealth. Although these policies are no longer in place, significant differences in funding and outcomes between schools in wealthy and poor districts exist and give rise to inequities in education quality for Black Americans (Rothstein, 2014). Figure 2 shows the United States Census Bureau's most recent distribution of educational attainment levels (USCB, 2021).

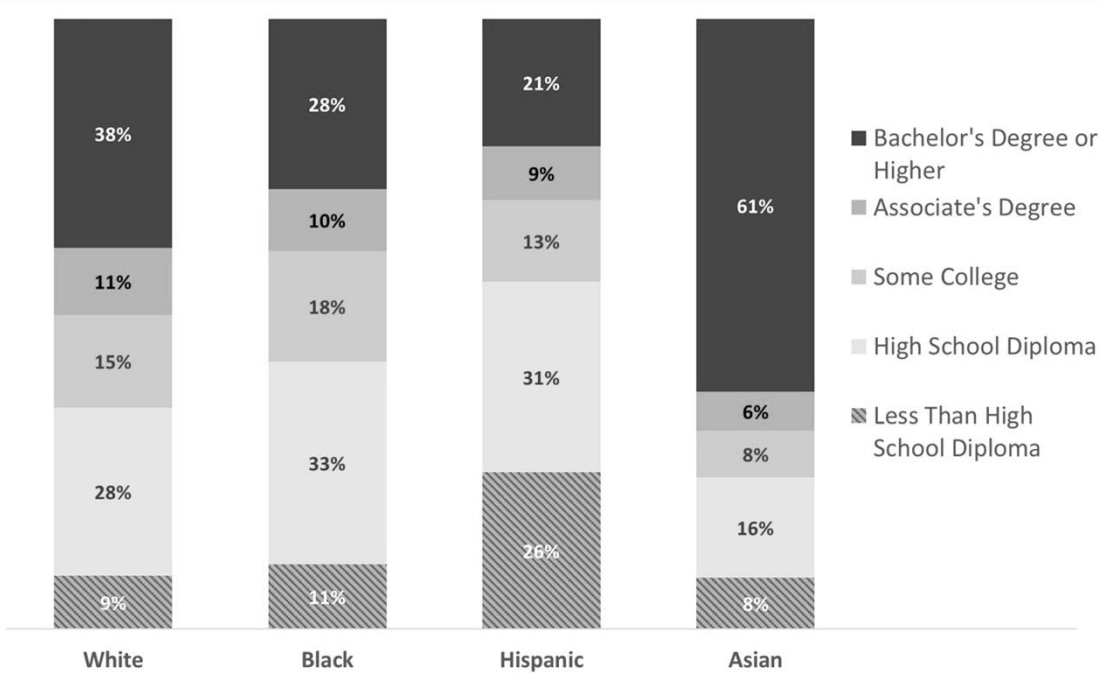


Figure 2. Educational Attainment Rates by Race (USCB, 2021)

Despite the political, economic, and social progress to achieve a working approximation to equity in higher education, gaps persist. Black Americans typically have the lowest postsecondary attainment rates of any other group (Lumina, 2021a; Shapiro et al., 2018). The NSC publishes a national study of 6-year completion outcomes at the undergraduate level. Students count as a positive outcome after receiving any degree or certification. According to the latest NSC study published in 2021, Black

students starting at a 4-year public college or university had the lowest completion rates (50%) of any other racial and ethnic group at 23% less than their White counterparts and 30% less than Asian students, who had the highest completion rates (Causey et al., 2020). Figure 3 shows the distribution of completion rates by race for 4-year colleges.

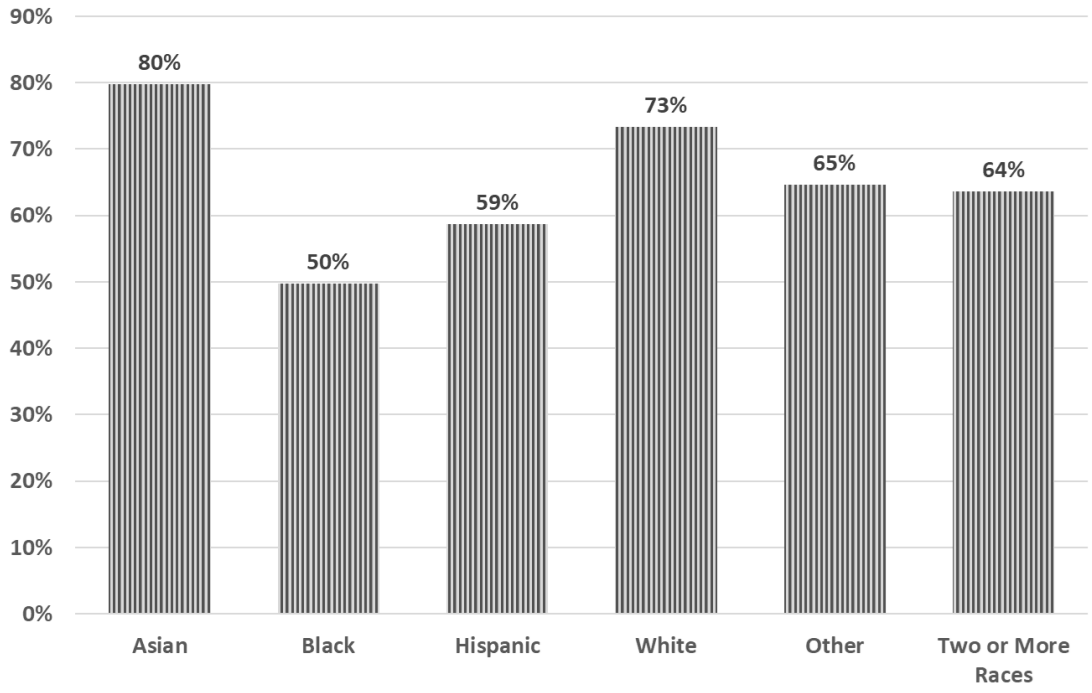


Figure 3. Completion Rates for Students Beginning college at a 4-year College (Causey et al., 2020)

Community colleges fall short of achieving equitable outcomes by race. Completion outcomes for community college students have historically been lower than those attending 4-year colleges, and achievement gaps follow the same pattern as 4-year degree completion outcomes. Black students starting at a community college had the lowest completion rates (28%) of any other racial and ethnic group, 21% less than their White counterparts and 23% less than Asian students, who had the highest completion rates (Causey et al., 2020). Figure 4 shows the distribution of completion rates by race for community college students.

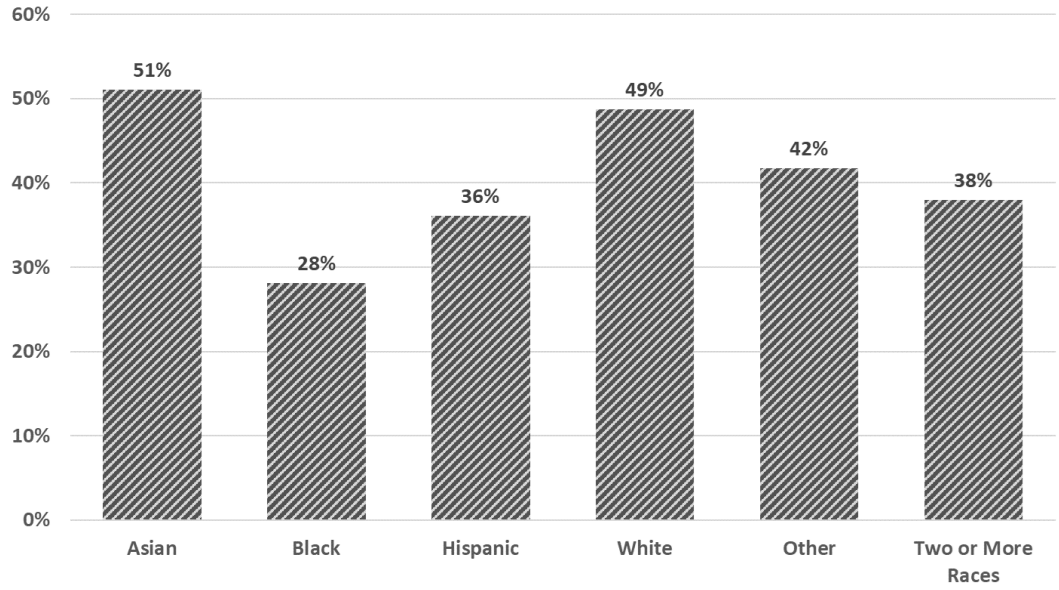


Figure 4. Completion Rates for Students Beginning College at a Community College (Causey et al., 2020)

The NSC data also shows equity issues with the community college transfer function. Only 10% of Black students earned a 4-year degree within 6 years of starting at community college; this is less than half the number of White students and a third of the number of Asian students (Causey et al., 2020). Figure 5 shows the distribution of students by race who begin college at community college and subsequently transfer and receive a bachelor's degree within 6 years of beginning college. Community colleges also have a high proportion of part-time student enrollment (65%). As a result, many community college students of all races remain enrolled at the end of the 6 years (AACC, 2021). However, the number of Black community college students still enrolled at the end of 6 years is not high enough to account for the considerable differences in completion outcomes. At the end of 6 years, 22% of Black students who started at a community college remained enrolled. This was 6% more than White students and 2% less than Asian students. After accounting for all students, the dropout rate of Black

community college students was 50%. This was 15% higher than White students and 25% higher than Asian students (Causey et al., 2020).

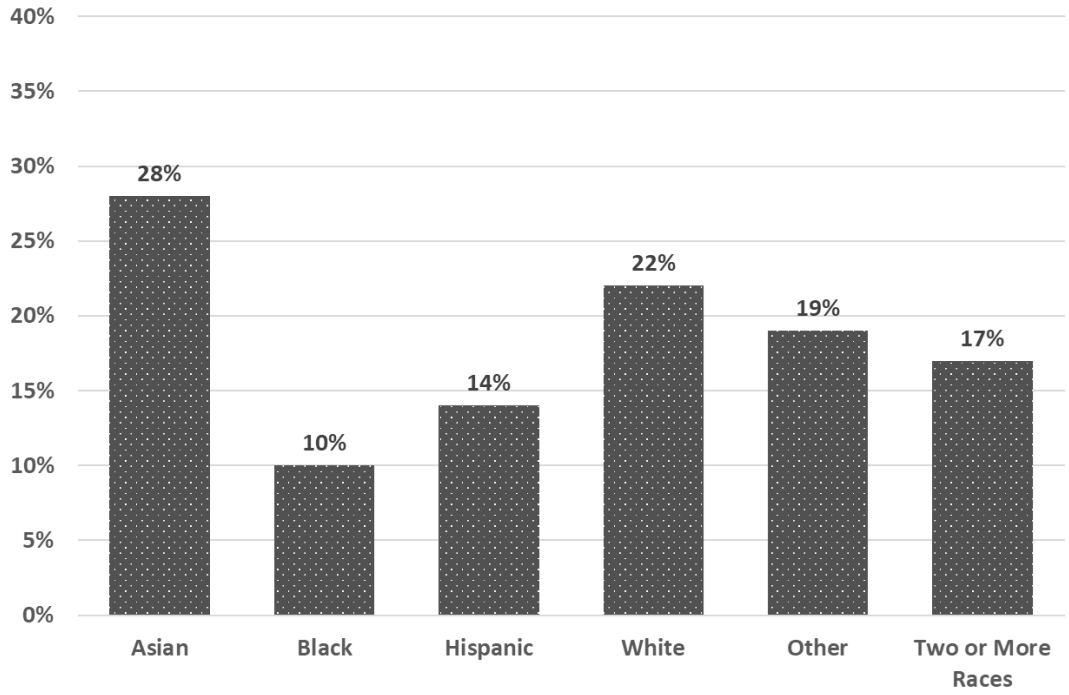


Figure 5. Percent of Students who start at a Community College and Transfer to Complete a Bachelor's Degree within 6 Years (Causey et al., 2020).

Efforts to Improve Equity in Community Colleges

Educational equity means that every student has access to the resources and academic rigor they need at the right moment in their education, despite race, gender, ethnicity, language, disability, family background, or family income (The Aspen Education & Society Program and the Council of Chief State School Officers, 2017). Bensimon's (2005) work with organizational learning theory characterized inequality in educational outcomes for historically underserved groups as an urgent problem. Community colleges want to increase completion rates and realize that equity must transition from an implicit desire to an explicit one.

Equity in student success outcomes has also gained the attention of community college non-profit leaders and philanthropic supporters. It is rapidly becoming the frontier of institutional learning, professional development, and policy discussions among community college leaders (ATD, 2020). These conversations center around community college affordability, targeted student services, institutional policies and practices, and evaluation strategies, all of which prioritize Black student outcomes (ATD, 2020).

Financial Aid

Providing access to higher education is part of the mission of all community colleges and a vital part of equity. One of the most important ways community colleges improve access is by keeping tuition and fees low while providing a quality education. Full Pell Grant funding typically covers the total cost of tuition and fees at most community colleges throughout the nation (Baldwin, 2017). The low cost of tuition and federal Pell Grants make college affordable for many low-income students (Baldwin, 2017).

The Pell eligibility formula largely depends on family income and enrolled hours. Students eligible to receive a full Pell Grant typically have a household income of less than $30,000 per year and attend college full-time (Park & Scott-Clayton, 2018). As a result, only one in three community college students receives a Pell Grant, and even fewer receive full Pell (AACC, n.d.). Even for those receiving Pell Grants, the barrier of additional and necessary costs includes costs such as childcare, transportation, housing, laptop computers, and internet—costs not covered by a Pell Grant. As a result, the majority of community college students must work (68%), and a significant number take out student loans to pay for living expenses (15%) (AACC, n.d.). In addition to federal

aid for community college students, most, if not all, states have financial aid programs, and colleges offer institutional-sponsored financial aid. These various sources of aid result in 59% of community college students receiving a discount on the total costs of tuition and fees (AACC, n.d.). Figure 6 shows the distribution of students by type of aid for the 2020-2021 year.

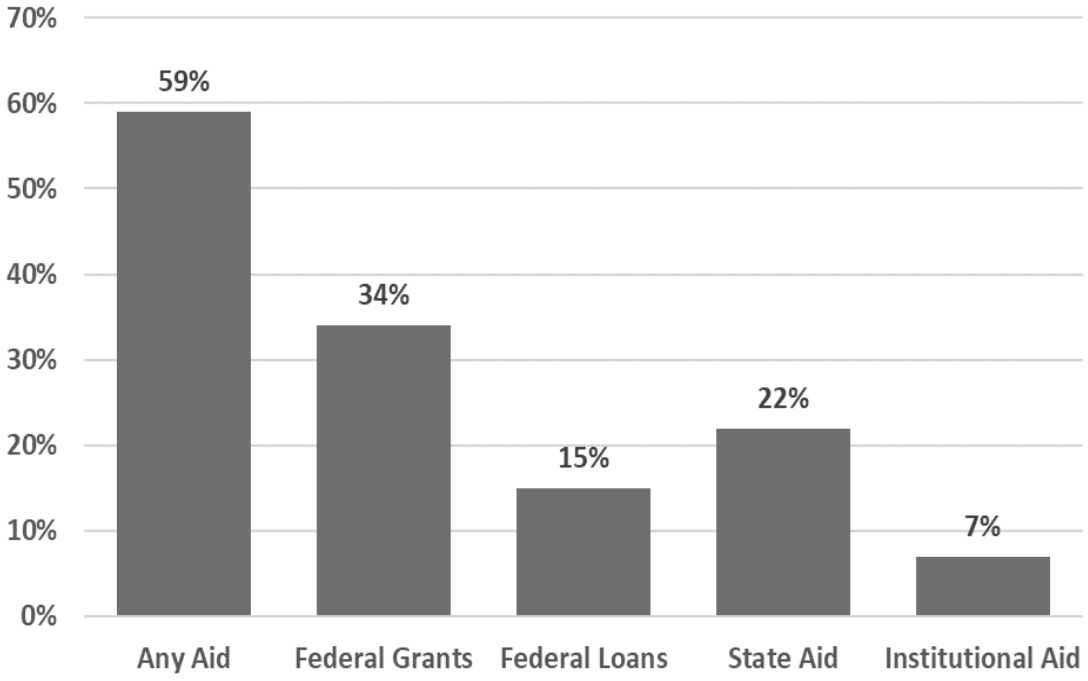


Figure 6. Percent of Students Receiving Financial Aid at Community Colleges 2020-2021(AACC, n.d.)

The combination of Pell Grants for students living well below the poverty line, and recent increases in the cost of community college tuition and fees, ensure access issues remain. These gaps are the source of ongoing advocacy and debate surrounding the idea of free community college. While there is currently no program at the federal level, many states and communities have invested in the idea of free college to close the skills gaps and boost their economies. Three hundred sixty-eight local and 30 statewide programs support free community college tuition (College Promise, n.d.).

Community colleges fall short on access, but even if they did not, access does not equate to success. Higher education will be equitable when student demographics no longer predict college success. Community colleges are in the infancy of solving this problem (Meza et al., 2018).

Achieving the Dream

Achieving the Dream (ATD), a non-profit organization, leads and supports a national network of community colleges. ATD works to achieve sustainable institutional transformation by sharing knowledge, innovative solutions, and effective practices and policies to improve student outcomes (Bailey, 2017). In 2020, ATD's work expanded to include equity as one of the seven areas of institutional capacity. Other areas of capacity include leadership and vision, data and technology, teaching and learning, strategy and planning, and policies and practices. ATD (2020) defines equity as an institution's ability to equitably serve low-income students, students of color, and other at-risk student populations.

Research on the effectiveness of ATD's work remains limited. An early study of six ATD colleges in Washington state indicated colleges were building progress towards a culture of evidence and using data. However, the average student outcomes across the six colleges in the study were unchanged at the end of 5 years at an ATD college (Jenkins et al., 2012). Participation in the ATD network also lacks, with only 300 community college members, less than one-third of the sector.

Research on Improving Academic Success of Black Students

The precursor to the community college equity agenda, was a substantial body of research devoted to improving academic outcomes for Black males. Over 2 decades of research show Black males at the bottom of key indicators of community college student success, including enrollment, retention, completion, and transfer (Bush & Bush, 2010; CCSSE, 2015; Cuyjet, 1998; Davis, 2003; Flowers, 2006; Hagedorn et al., 2001; Harper, 2006, 2012; Harris & Wood, 2013; Mason 1998; Wood, 2012; Wood & Harris, 2012). These studies provide valuable insights into college readiness, academic, social, external, and affective factors and experiences that help explain poor performance among Black men enrolled in community college. Unfortunately, the mainstream journals and sources typically consumed by community college leaders and practitioners declined to publish these findings (i.e., *Community College Journal, Community College Journal of Research and Practice, Community College Review, New Directions for Community Colleges*).

In 2015, CCCSE published *Aspirations to Achievement: Men of Color and Community Colleges* with support from the Kresge Foundation, becoming the first widely disseminated research to help community college leaders understand how to increase the success of men of color (MOC). It also served as a call to action to "Reclaim the American Dream" by the president and CEO of the American Association of Community Colleges, Dr. Walter Bumphus (CCCSE, 2015).

Several findings are consistent across the body of research on MOC in community colleges. College readiness related to academic preparedness is a key factor in successful outcomes, particularly in mathematics (CCCSE, 2015; Hagedorn et al., 2001; Mason,

1998; Wood & Harris, 2012). Researchers also found that MOC who were confident in their choice of major and academic goals had better outcomes (Hagedorn et al., 2001; Mason, 1998). Several studies emphasized the significance of the environment outside the classroom, such as work and family responsibilities. In an investigation of why MOC dropped out of college, Black men were more likely to cite "other reasons" than other male students and more frequently than academic reasons (Wood, 2012). Many of the studies noted the importance of personal connections. A sense of belonging and efficacy towards belonging in college played a key role in the academic achievement of MOC (CCCSE, 2015; Perrakis, 2008; Sutherland, 2011).

CCCSE's focus group research revealed that successful MOC had the same backgrounds and academic preparedness levels and were from the same neighborhoods as unsuccessful MOC. Their success stemmed from having strong relationships with peers and faculty. Through their engagement, they connected with others who looked like them and formed a network of friends and faculty and staff supporters on campus who cared about them (CCCSE, 2015).

Summary

Access to higher education for Black Americans has been a long, steep hill, and America is still not at the top. Since their beginnings in 1901, America's community colleges' primary mission has been to provide access to higher education. Subsequently, these colleges have become the primary point of entry into higher education for Black students. The research surrounding improving educational outcomes for Black students is limited and primarily focused on Black men as MOC research. Even less research is devoted to studying Black men in community colleges. Today, many community

colleges, especially those involved in the ATD network, have an active institutional focus on equity. Little research identifies or closely examines community colleges that have managed to close equity gaps in completion.

CHAPTER III - METHODOLOGY

Ideally, race should not be a strong predictor of one's success in college (Carnevale et al., 2019a). Over the past 20 years, a significant amount of scholarly research verifies that this problem exists broadly in higher education, particularly in community colleges (Carnevale et al., 2019b; Causey et al., 2020; Shapiro et al., 2018; Shapiro et al., 2019). This chapter outlines the research design for comparing community colleges and identifying those where race is not a predictor of ability to graduate. This work aims to understand why some colleges succeed while others fail to have Black and White students completing college at similar rates. The remainder of this chapter outlines the study's research objectives, population and sample, research design, instrumentation, data collection processes and procedures, and data analysis.

Research Objectives

This research is a national study investigating community college completion rates between Black and White students. It investigates one central research question: What institutional-level factors and behaviors serve to eliminate gaps in college completion rates between Black and White community college students?

This research has six primary objectives:

RO1 – Compare completion rates between Black and White students.

RO2 – Describe institutional characteristics, including college affordability and financial aid, instructional investment, student services, and other institutional characteristics.

RO3 – Investigate institutional data and determine predictive factors positively influencing equity gaps in community college student success.

RO4 – Describe interview participant demographics.

RO5 – Explore institutional alignment with equity-mindedness indicators.

RO6 – Explore institutional behaviors that positively affect racial equity gaps in community college completion.

Research Design

A mixed-methods design explored factors associated with closing academic achievement gaps between Black and White students attending U.S. public community colleges. According to Creswell (2013), mixed-method research designs include quantitative and qualitative data collection and analysis. According to Johnson and Christensen (2017), a mixed-methods design strengthens a study and its conclusions by increasing the validity of the research design. Creswell (2013) points out that a mixed-methods approach involves collecting and integrating quantitative and qualitative data for a better understanding of a research problem better than quantitative or qualitative designs allow singularly. A mixed-methods design is helpful to illustrate quantitative findings and provide context, credibility, diversity of efforts, and utility or usefulness of findings (Bryman, 2006).

The topology of this mixed-methods design followed the commonly used "explanatory sequential design" method, where the first phase of quantitative data collection and analysis was followed by qualitative data collection (Ivankova et al., 2006). These qualitative data were used to explain the initial quantitative results (Creswell & Plano-Clark, 2011). More specifically, in this type of design, the quantitative strand of this design was conducted first and chronologically, followed by the qualitative strand, which built on the previous strand (Tashakkori, 2009).

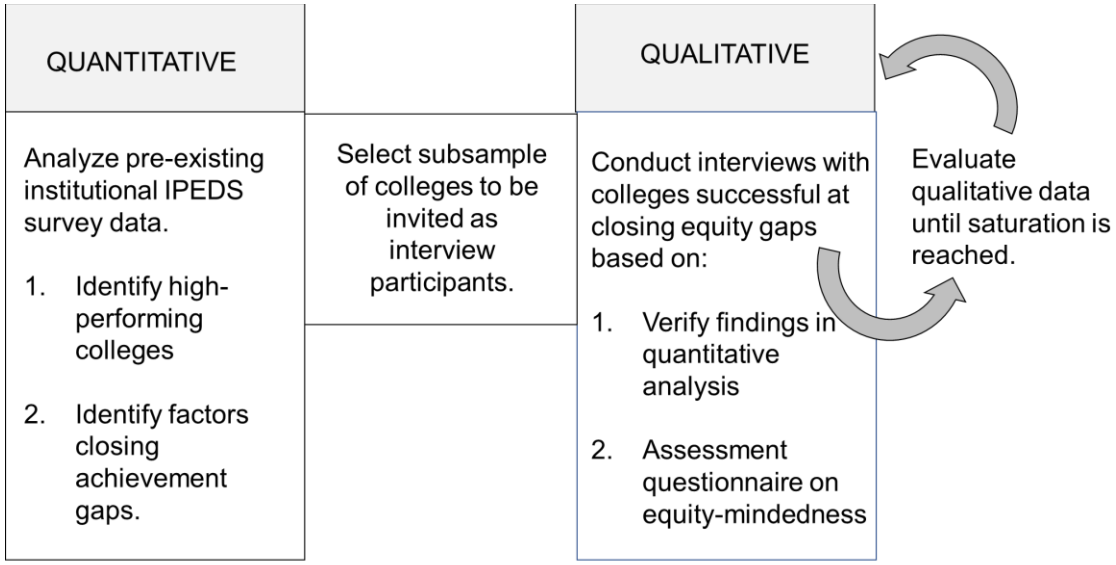
Quantitative Design

This study sought to understand factors influencing the closing of completion gaps between Black and White community college students. A causal-comparative quantitative research design compares two or more groups to determine a cause-effect relationship (Creswell, 2013). This research studied potential causes of differences in completion rates between Black and White community college students.

This study utilized pre-existing survey data published by the Integrated Postsecondary Education Data System (IPEDS). IPEDS surveys collect institutional-level variables in the college costs, financial aid, enrollment, completions, retention and graduation, outcome measures, finance, human resources, and other institutional characteristics from each public community college in the nation (Integrated Postsecondary Data System, n.d.). Presentation and analysis of the data used tools and techniques most appropriately suited for studying multiple variables impacting the gap in completion rates between Black and White community college students. While analyzing this rich data set was a first step toward understanding how to impact equity on community college campuses, the additional investigation further identified complex reasons why some colleges have more success than others at closing completion rates between Black and White students. This study linked the quantitative findings to qualitative methods by exploring how colleges work to close equity gaps. Miles and Huberman (1994) advocate for this approach to compensate for the deficiencies of using a purely quantitative approach for complex, real-world problems.

Qualitative Design

This study conducted interview research with community colleges showing success in closing these gaps from the study's quantitative analysis. Many researchers consider interviews the gold standard method of qualitative research (Kvale, 1996; Merriam, 2009). Patton (2002) describes interviews as the best way to structure interactions to gain another person's perspective. Interviews continued until the researcher found no new significant findings, making further data collection unnecessary. Data saturation is a commonly accepted design approach in qualitative research (Patton, 2002). Figure 7 provides the topology of the explanatory sequential design proposed for this research.



(Ivankova et al., 2006; Creswell & Plano-Clark, 2011; Tashakkori, 2009)

Figure 7. Explanatory Sequential Design Topology

The explanatory sequential design allowed the researcher to identify samples and subsamples eligible for study participation.

Population and Sampling

A population represents the entire group for which the study's results will be applied and generalized (Taherdoost, 2016). This study determined how community colleges can reduce completion gaps between Black and White students. Because the unit of analysis is the institution, the population for this study includes all public 2-year community colleges in the United States.

Postsecondary institutions of higher learning are classified based on the type of degrees students can earn. Public 2-year colleges, or community colleges, are institutions of higher learning offering Associate degrees, 2-year certificates, and less-than-2-year certificates; and are financially supported by public funds (Integrated Postsecondary Education Data System, n.d.). According to the most recent count by NCES, the most recent public 2-year colleges operate in the United States (NCES, n.d.). These colleges will represent the study's population. A subset of the population, or sample, was identified through quantitative data analysis of institutional-level data reported to the NCES.

Quantitative Sampling

For the first part of this study, the researcher found differences in completion rates between Black and White students for 940 community colleges—the entire dataset of public 2-year colleges. Accessing this data was possible because all U.S. postsecondary institutions of higher learning receiving Title IV funding, including community colleges, must report institutional data to the NCES (NCES, n.d.). This data included completion rates, by race, across all institutions in the population based on student cohorts' characteristics and outcomes. To complete their IPEDS surveys, colleges use their

archival records to construct cohorts of first-time, full-time students and determine each student's outcome of success, making cohorts particularly useful in this study (Shadish et al., 2002). Performance outcomes of cohorts, such as completion rates, are aggregated at the institutional level and then reported in the survey. In this case, the data of the 940 public 2-year colleges were easily accessible. Because all colleges use the same definitions for the data reported on NCES surveys, the complete sample eliminates any chance of bias in sample selection (Gravetter & Wallnau, 2007).

A preliminary review of the data found that 97 of the 940 colleges classified as 2-year public offered only 1-year certification programs. According to Mullin (2012), colleges with programs exclusive of 2-year degrees lack the transfer component of the community college mission. Further, the shorter the program length, the more likely students will graduate (Shapiro et al., 2016b). Because these 97 colleges have dissimilar missions and do not offer associate-type degrees of 2 years in length, they were eliminated from the study. Additionally, the data showed that 119 of the 843 community colleges did not report a 2020 graduation rate for their Black student cohort, and two additional colleges failed to report a completion rate for White students (NCES, 2020). Because no comparison or gap analysis between Black and White student graduation rates could be established for these colleges, the researcher eliminated these colleges from the study. The total number of community colleges eligible for analysis was 722.

Qualitative Sampling

To understand what institutions must do to close equity achievement gaps between Black and White students, this study conducted a subsample of interviews with community colleges showing success in closing these gaps from the study's quantitative

analysis. The goal of the qualitative sample selection process was to select community colleges with the most knowledge and information relevant to closing the completion rate gap between Black and White students. To achieve this, the researcher calculated the differences between Black and White completion rates for the colleges in the study. After analyzing the data distribution, the researcher selected colleges with differences in Black and White completion rates as close to zero for interview. Colleges that fell between +5 and -5 of zero, or within 5% of the difference of zero, were identified as the subset of colleges with information relevant to factors related to closing equity gaps between Black and White students.

This type of non-random sampling is comparable case selection—selecting colleges based on the same relevant characteristic over time (Miles et al., 2014). Criterion sampling involves selecting cases that meet some criterion of importance (Patton, 2001). This study's special subset of colleges is referred to as the interview sample. This methodology yielded n = 39 community colleges targeted for interviews.

Approximately 304 schools met the criterion for the study. Based on recommendations by Creswell (1994) and Morse (1994) and observations by Mason (2010), the researcher set a goal of conducting interviews with between 20 and 30 schools, but interviews continued until the researcher finds no new significant findings, making further data collection unnecessary. This practice is called saturation and is a commonly accepted design approach in qualitative research (Patton, 2002). Saturation is often described as an intuitive or inexact process (Castro et al., 2010). Saturation was determined by the researcher through the process of coding interviews in clusters of 10.

Once no new themes emerged, the researcher determined that saturation had been reached, and interviews ceased.

Interviews were conducted with administrative officers from a sample of top-performing community colleges to explore factors closing gaps in community college completion rates between Black and White students. Titles vary significantly by institution (SACSCOC, 2020). For this research, administrative officers included key decision-makers who provide leadership and expertise within the institution's governance structure (SACSCOC, 2020). Administrative officers include highly qualified, credentialed, executive-level officers who provide professional judgment and leadership centered on accomplishing the institution's mission (SACSCOC, 2020).

Instrumentation

This study's mixed-methods approach required multiple instruments to investigate factors associated with closing completion gaps between Black and White students. The quantitative phase has one set of instruments, and the qualitative phase has another. This section describes each of these instruments independently.

Quantitative Instrumentation

The U.S. Department of Education was established in 1867 to collect statistics and facts to show the condition and progress of education, NCES was created and officially assigned the task of collecting and disseminating statistics in 1974, and IPEDS was phased in between 1985–86 and 1988–89 (Aliyeva et al., 2018). The NCES IPEDS is a large-scale survey that collects institution-level data from postsecondary institutions in the United States. Participation in IPEDS is mandatory for any institution that participates

in any federal financial assistance program authorized by Title IV of the Higher Education Act (NCES, n.d.).

This study used NCES IPEDS from each institution (n = 722) for the most recent (2020) filing year. Twelve survey components comprise the annual IPEDS data collection cycle. Survey components are separated into fall, winter, or spring reporting periods. The fall data collection consists of the Institutional Characteristics, Completions, and 12-Month Enrollment survey components. The winter data collection consists of the Admissions, Graduation Rates, 200% Graduation Rates, Outcome Measures, and Student Financial Aid survey components. The spring collection consists of the Academic Libraries, Fall Enrollment, Finance, and Human Resources survey components (NCES, n.d.). Survey data was utilized from all three cycles. Table 1 lists the seasonal components and identifies the type of data associated with each collection period.

Table 1

NCES IPEDS Survey Components

Fall Survey Collection	Winter Survey Collection	Spring Survey Collection
Institutional Characteristics	Student Financial Aid	Fall Enrollment
Completions	Graduation Rates	Finance
12-month Enrollment	200% Graduation Rates	Human Resources
	Admissions	Academic Libraries
	Outcome Measures	

Qualitative Instrumentation

The researcher used a structured interview with a pre-prepared set of questions for this study. The researcher developed questions to align with Bensimon's equity-

mindedness conceptual model and 12 indicators of practicing equity-mindedness (Bensimon & Malcom, 2012; Bensimon et al., 2016). Permission to use Bensimon's equity-mindedness framework may be found in Appendix B. Bensimon's indicators of practicing equity-mindedness may be found in Appendix C.

Bensimon's original work of 12 exploratory questions for practicing equity-mindedness were created for 4-year colleges and universities. Without altering the intent of each question, the researcher developed an instrument based on Bensimon's equity-minded questionnaire and modified it for use in community colleges. Questions were built upon and adapted by substituting language reflecting the structure and function of community colleges, as seen in Appendix D.

The interviews were structured and conducted with administrative officers responsible for the college's strategic direction. The institutional, behavioral interviews explored the results of the quantitative portion of this study regarding factors found to significantly lower the gap between completion rates of Black and White students. To ensure that all participants received the same information, the researcher followed a preestablished protocol (Appendix E) and a predeveloped script (Appendix F).

A pilot study informs the effectiveness of the interview instrument. By conducting the interviews on a small scale, the researcher can determine if research protocols are effective and if questions are clear and concise (Baker, 1994). The researcher selected two volunteer community college administrators from colleges not selected for the study for mock interviews. The researcher used the feedback from the pilot interviews and determined that no re-wording or revising questions was needed.

Based on the outcome of these mock interviews, interview questions were determined to be clearly stated, easily understood, and unambiguous.

Validity

Validity creates credible studies and refers to the accuracy of the data collected as a part of the research process (Creswell, 2013). In investigating the institutional factors that impact more equitable outcomes between Black and White community college students, this study utilized NCES IPEDS data for all public 2-year colleges in the United States. This study also used interviews to understand institutional variables and behaviors impacting completion gaps between Black and White community college students.

Quantitative Validity

All postsecondary institutions of higher learning receiving any federal financial aid, including all 2-year public community colleges, are required to complete IPEDS surveys. Because the study used an adequately sized sample of community colleges, the researcher expects strong external validity. Further, this study simultaneously studied the predictive quality of many independent variables using multiple linear regression. Multiple linear regression is a causal-comparative technique that measures the strength of each variable's impact on the dependent variable (Salkind, 2010). Multiple linear regression analysis provided the predictive nature of several institutional variables and identified the most important factors in closing equity gaps between Black and White students.

Qualitative Validity

The work of colleges to improve equity involves data collection and analysis in tandem with the study of complex human interactions. The interview portion of this research aided in understanding the impact of the strategic efforts of institutional success in closing these gaps and in validating the findings of best practices for improving equity in completion gaps between Black and White community college students. Because interviews allow probing and provide in-depth information, they allow for moderately high validity measurements (Tashakkori & Teddlie, 2010).

In addition to the pilot study of the interview instrument, the researcher also employed the strategy of member checking or participant checking to validate further data collected during the interview portion of the study. Member checking or participant checking is a validation technique for exploring the credibility of results. As a part of this process, the researcher returns data to research participants to check for accuracy (Brit et al., 2016).

Clarifying researcher bias requires the researcher to disclose personal bias on the study topic to the reader so that the reader can clearly understand how the researcher's perspective might influence the researcher's interpretation of the data (Creswell, 2013). According to Berger (2015), the researcher's personal views should not interfere with or influence participants' experiences. Because the researcher holds a position at a college access organization with a connection to community colleges and a strong focus on equitable outcomes among Black students, the researcher enlisted the strategies of self-reflection and journaling to minimize personal bias's effects on the study's outcomes.

As part of the data collection process, Merriam (2002) recommends reflective journaling to minimize researcher bias and remove preconceived ideas about the study held by the researcher. Ortlipp (2008) suggests the researcher use the journal to document how researcher assumptions or biases might influence the research. The researcher kept a journal to minimize personal bias throughout the qualitative data collection process.

Creswell (2013) lists triangulation as a method to ensure the strength and validity of a study. Triangulation involves using multiple data sources to more completely analyze and understand the data (Patton, 2001). Denzin (1978) lists four types of triangulation. Data triangulation uses multiple data sources in a study allowing findings to be corroborated (Denzin, 1978). Theory triangulation uses divergent opinions to investigate hypotheses from different perspectives (Denzin, 1978). Methods triangulation uses multiple methods to compensate for deficiencies or reduce biases (Denzin, 1978). According to Denzin, investigator triangulation uses more than one researcher or data analyst to confirm findings across investigators.

For this research, investigator triangulation compared the results of this research with concurrent studies with similar or the same research objectives. A recent study examining the impact of same-race representation of faculty and students on completion rates at 4-year colleges found that college graduation gaps between Black and White students tend to shrink when there are more Black students and Black faculty on campus (Bowman & Denson, 2022). A community college expert also confirmed study themes and cross-checked results across investigators.

Reliability

Reliability refers to the extent to which a measurement process can be replicated over time (Crocker & Algina, 1986). Nunnally (1967) describes reliability as the extent to which measurements are repeatable and free from random influence. As a part of this study, the researcher used strategies intended to boost quantitative and qualitative reliability.

Quantitative Reliability

The quantitative portion of this research included a substantial sample of community colleges, and the study used the most recent cohort data available from NCES from fall 2017. The findings will be highly reliable, initially. Each year, community colleges are required to update their NCES IPEDS surveys using the following year's cohort and then the next. Because of this, the researcher expects reliability to decrease over time.

Qualitative Reliability

Reliability describes the degree to which an assessment tool measures consistently over populations and time (Shadish et al., 2002). Several techniques boost the reliability of results: (a) a single interviewer conducted interviews; (b) interviews were recorded, preserved, and coded using NVivo, a quantitative analysis tool; (c) the interview followed a structured protocol with preestablished questions providing consistency across colleges; and (d) interviews continued until saturation of knowledge was achieved (Guest et al., 2006). The interview portion of the study was guided by oversight from an institutional review board.

Institutional Review Board

Roberts (2010) explains that institutional review boards (IRB) oversee research involving human subjects to protect study participants and ensure compliance with federal and institutional guidelines. The University of Southern Mississippi's Office of Research Integrity requires that researchers gain IRB approval from the university before data collection begins. IRB approval for this research study may be found in Appendix A.

Data Collection

This research used quantitative and qualitative components to the institutional-level characteristics, practices, or experiences affecting gaps in community college completion rates among Black and White students. This mixed-methods study used an explanatory sequential design where data collection occurred in two steps. Data were first collected for the quantitative portion; then, results were used to inform the subsequent qualitative data collection.

Quantitative Data Collection

NCES provided several useful tools for exploring, monitoring trends, and looking up IPEDS data for individual institutions or groups of institutions. This study will use the "compare institutions" tool to download data by group based on criteria. The criteria of public, 2-year will be used for each variable of interest. The tool will be used several times to acquire the entire set of data points needed for the study. IPEDS collects 250 variables from colleges and universities throughout the United States, and while most are not considered relevant to the goals of this study (website link, address, salaries of non-medical staff, etc.), nine variables were of strong interest based on their known impact to community college completion rates, as determined through the review of the literature

(Nichols & Anthony, 2021; Perrakis, 2008; Phillips & Horowitz, 2014; Wood & Harris., 2012). Table 2 shows the variables, and the IPEDS instrument used to collect them.

Table 2

Variables and Associated IPEDS Survey

IPEDS Variable	IPEDS Survey Name
Completion Rate of Black Students	Graduation Rates
Completion Rate of White Students	Graduation Rates
Cost of Tuition and Fees	Institutional Characteristics
Degree of urbanization	Institutional Characteristics
Fall enrollment (size)	Fall Enrollment
Instructional Spending	Finance
Pell Funding	Student Financial Aid
Percent of Black Instructors	Human Resources
Percent of Black Students (diversity)	Fall Enrollment
Student Faculty Ratio (class size)	Human Resources
Student Services Spending	Finance

Qualitative Data Collection

The data collection for the qualitative portion of the study was conducted using interview research. Colleges selected to be interviewed were invited via email. The invitations were sent to the college's president or CEO, as shown in Appendix G. Interviews were scheduled within 30 days after the invitation. All interviews were conducted virtually and recorded through the Zoom platform. Zoom's output for each

interview included video, audio, and transcription files. These files, for each interview, served as the raw data for the information analysis. Table 3 describes the data collection process related to the study's research objectives.

Table 3

Data Source for Each Research Objective

Data Source	Description	RO
IPEDS	Extra Data for Each College	1, 2
IPEDS	Analysis of IV to DV	3
Pre-Interview	Pre-Interview Questionnaire	4
Interview Q1	Discussion of Significant Variables	5, 6
Interview Q2	Top Asset Reason Completion	6
Interview Q3	Equity Assessment Programs	5
Interview Q4	Equity Assessment Outcomes	5
Interview Q5	Equity Assessment Access	5
Interview Q6	Institutional Culture	5,6
Interview Q7	Retention/Completion Outcomes	5,6
Interview Q8	Equity Assessment Hiring Practices	5
Interview Q9	Support Board of Trustees	5
Interview Q10	Support Philanthropy and Community	5

Data Collection Plan

This mixed-methods study requires the quantitative strand of this design to be conducted first and chronologically, followed by the qualitative strand, which will build

on the previous strand. According to Tashakkori (2009), this is explanatory sequential design, where data collection occurs in two steps. Data are first collected for the quantitative design, and then results are used to inform the subsequent qualitative data collection. Timing of data acquisition is critical to the efficiency of the design. Table 4 outlines the data collection plan for the study.

Table 4

Data Collection Plan

Timeframe	Description of Activity
Week 0	Obtain IRB approval
Week 1 & 2	Download IPEDS data
	Conduct quantitative analysis
	Prepare quantitative findings
	Select colleges for interview
	Conduct pilot interviews
Week 3	Update interview script, if necessary
	Send email invitations to potential participants
	Send confirmation emails
Week 4 – 10	Conduct interviews
	Send thank you emails
	Conduct qualitative analysis and share results with participants
Week 11	Develop report of findings

Data Analysis

In this mixed-methods study, the researcher utilized the most appropriate types of data analysis for the different strands of quantitative and qualitative approaches. This section describes the quantitative and qualitative plans and methods for analyzing data to best inform this study's goals to find factors associated with closing completion gaps between Black and White students.

Quantitative Data Analysis

The researcher utilized two tools for the quantitative analysis of data. All statistical calculations were conducted using SPSS version 27. Whenever appropriate, the researcher presented data visually by organizing it in tables, graphs, or scatterplots using Excel.

Using IPEDS data, the completion rate data for Black and White students were analyzed first to calculate each college's difference which was used as the dependent variable (DV) in this study. Each variable in the study formed a distribution of data for the n = 722 institutions. Descriptive statistics (mean, median, standard deviation, min, max, etc.) and visual representations of data for Black completion rates, White completion rates, and their difference were presented. Only colleges with proportions of Black and White completion rates derived from suitable sample sizes were considered for further analysis. This reduced the sample from 722 to 304 colleges.

Descriptive statistics of the nine independent variables (IV) of interest were then presented. These variables were selected because of their established impact on community college completion. Multiple linear regression was used to measure the strength of each IV's impact on the DV, simultaneously (Salkind, 2010). In this study,

multiple linear regression determined the magnitude, direction, and predictive nature of institutional factors on community college completion rates between Black and White community college students.

The theoretical multiple linear regression model was given by:

$$D = a_0 + a_i I_i + e,$$

where:

D is $(w - b)$, the difference between Black and White college completion rates,

a_0 is the intercept, and

I is institutional factors for $i = 1, 2, 3, 4, 5, 6, 7, 8, 9$, and

e is the error term.

The analysis also investigated the four assumptions of linear regression: linear relationship, collinearity, independence, and homoscedasticity (Salkind, 2010). After investigating the assumptions, the model's ability to predict the difference in Black and White completion rates was presented. The F statistic was used to determine the overall goodness of fit and the variance in the data explained by the model's variables and the R-squared statistic determined the strength of the relationship between the independent variables and the dependent variable (Mendenhall & Sincich, 2011).

Qualitative Data Analysis

The interview research data collected via Zoom were analyzed and coded using NVivo software. NVivo Coding, a data analysis software was used to identify patterns and themes on qualitative and mixed-methods research. Two files for each interview were uploaded into NVivo, the video recording file and the transcript of the interview. NVivo uses words or short phrases from the participants own language in the data record

as codes (Miles et al., 1994). Phrases and words used most often will emerge as themes and serve as a basis for patterns in the data.

The interview questionnaire also provided direction for the analysis. The 10-question instrument explored four domains of interest: intent, strategy, culture, and support. For each domain, a checklist matrix was used to document and explore the dynamics of each domain (Miles et al., 1994). Qualitative data was collected and aggregated into these four areas.

1. Intent: This domain explored whether colleges are taking purposeful steps to close achievement gaps between Black and White students. If so, what activities and strategies were known to be working?
2. Strategy: This domain identified and explored high-impact strategies institutions view as effective. This included institutional strategies for students, and institutional, such as recruitment of new students.
3. Culture: Several questions provided interviewees an opportunity to showcase how the institution's culture boosts equitable completion outcomes for Black students. This included professional development activities and hiring practices.
4. Support: Tracking this domain determined if the institution is supported by its primary stakeholders, the community, and its governing board to create equitable completion outcomes between Black and White community college students.

Confidentiality

The quantitative data used in this study was from publicly available sources, and no expectation of confidentiality was expected by the institutions. Because the qualitative portion of the research was based on an asset model, the interviews were about getting to

the “why” of positive outcomes, not negative ones. This landscape of data collection allowed opinions and results to be reported freely and in detail. Participation in the study presented no known risks to participants or their employment status. The participants were informed that they could withdraw from participation in the study at any time and without penalties.

As mentioned, the researcher recorded each video interview using Zoom software. Additionally, using Zoom, interviews were transcribed and imported into NVivo, where they were transcribed and coded. The researcher provided each interview participant with a consent and confidentiality form to sign before participating in the interview. The researcher will maintain copies of signed consent forms for all interviews for 36 months in a locked file cabinet in the researcher’s office, after which the data will be destroyed. The consent form may be found in Appendix J.

Summary

Chapter 3 proposed a mixed-methods research design using both causal-comparative quantitative analysis and quantitative structured interview research. Arguments for the study’s validity and reliability were given, along with a detailed description of the proposed data sources and subsequent analysis techniques. An adequately sized and reliable sample of 2-year public colleges in the United States was used to prepare study’s quantitative portion. To provide insights into institutional factors contributing to increased racial equity in completion rates at community colleges, the researcher included community colleges that fit the criteria of inclusion in the top tier of performance on closing completion rate gaps between Black and White students. The remaining chapters

in this study will execute this research plan and outline the research results, present the findings, and offer recommendations.

CHAPTER IV - RESULTS

This chapter provides results of this study's investigation of the differences in completion rates between Black and White community college students and the factors associated with the causes of these differences. This is a mixed-methods study, and this chapter begins by presenting the results of the quantitative analysis using data drawn from a national sample of 722 community colleges in the 2020 NCES IPEDS submissions. The results of this quantitative analysis informed the interview selection process for the subsequent qualitative phase, focused on colleges with knowledge in closing the completion rate gap between Black and White students. The second half of the chapter describes the interview participants and presents the interview research findings across four domains of interest: intent, strategy, culture, and support. The chapter closes with a summary of results listed by research objective.

The primary steps used to investigate each research objective are summarized in Figure 8. The investigation of research objectives 1 and 2 employed the use of Excel to provide descriptive statistics for the variables involved in the quantitative portion of this study. Research objective 3 involved the use of linear regression to determine which variables, if any, have a predictive effect on closing completion gaps between Black and White students. Objective 4 was answered by selecting and describing the interview participants, and research objectives 5 and 6 involved the use of Zoom and NVivo to create and analyze the data from the qualitative portion of the study.

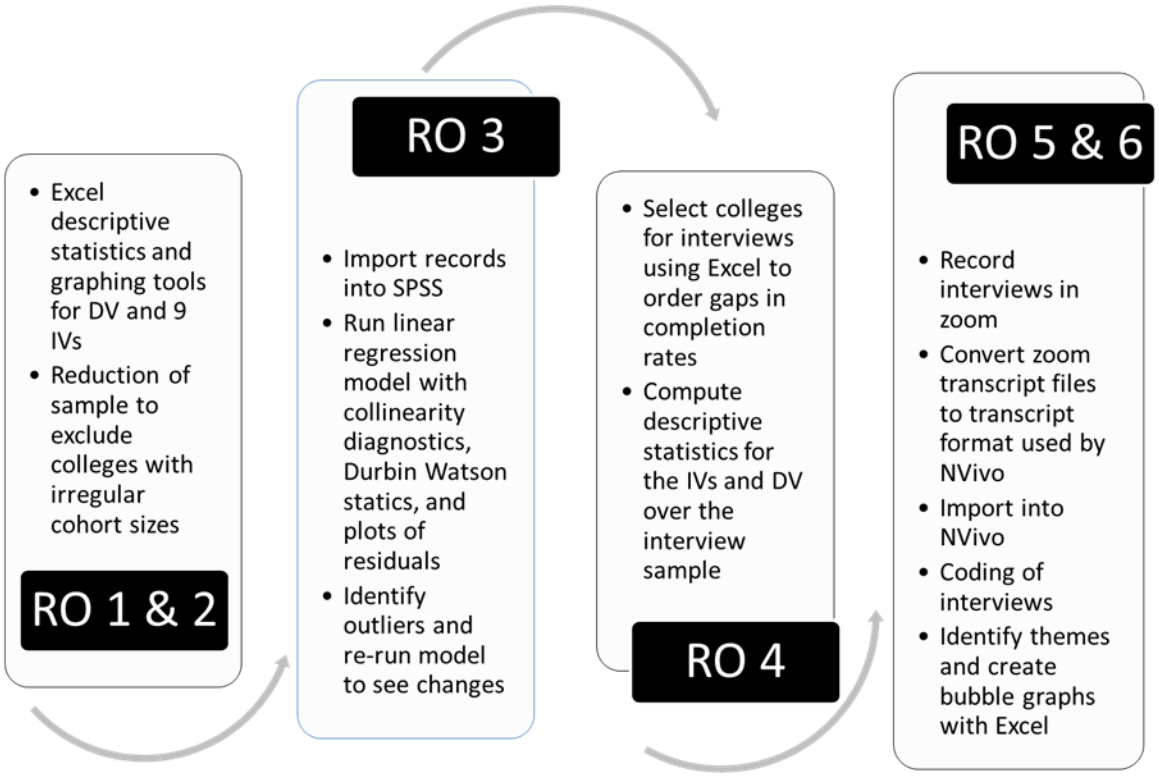


Figure 8. Data Analysis Steps by Research Objective

Quantitative Results

This section presents the quantitative analysis of IPEDS data, including the completion rates of Black and White students from the sample of 722 community colleges. This section describes the study's dependent variable (DV), the gap in completion rates between Black and White students. Next, this section presents and describes each independent variable (IV). Multiple linear regression measured the strength of each IV's impact on the DV simultaneously and investigated the assumptions underpinning this study's use of regression. Lastly, the IPEDS data were examined to determine each college's eligibility for sub-sample selection for the qualitative interview research and the subsample selected from among the findings.

Research Objective 1

Compare completion rates between Black and White students.

The first research objective compared completion rates between Black and White students. Black and White completion rates were based on tracking each college's fall 2017 cohort of full-time, first-time students for the n = 722 sample of community colleges. The cohorts for Black and White students were defined as fall 2017, and students were followed for 3 years. In 2020, their completion rates were reported as part of NCES IPEDS. Table 5 shows the descriptive completion rate statistics across four categories: Black, White, the difference between Black and White, and all students.

Table 5

Completion Rates of Community Colleges

Statistic	Black	White	Diff	All Students
Mean	21.4	35.5	14.1	31.6
Median	18.0	35.0	15.0	31.0
Mode	20.0	31.0	15.0	35.0
Std Dev	14.9	12.7	14.1	11.4
Skewness	2.2	0.9	-0.8	0.9
Range	98.0	93.0	145.0	80.0
Min	2.0	7.0	-62.0	7.0
Max	100.0	100.0	83.0	87.0
95% CI	1.1	0.9	1.0	0.8

The average completion rates of Black students totaled 21.4% (SD = 14.9), 14.1% less than White students (M = 35.5%, SD = 12.7). The distribution of differences between

completion rates of Black and White students was also examined. The distribution of differences was created by subtracting the Black completion rate from the White completion rate for each college in the study (N = 722). The average difference was 14.1% (SD = 14.1), and the median and mode were 15.0%.

Graphs summarize data visually and provide additional insight into the completion rate distributions of Black and White students and their differences. Of the 722 colleges, 26 reported Black completion rates in the single digits, with most colleges' Black completion rate data clustered well below the average White completion rate of 35.1%. Of the 722 colleges, 162 colleges reported 15% completion of Black students. Conversely, of the 722, 48 colleges reported a 50% or more completion of Black students. Figure 9 summarizes Black student completion rates for the sample of 722 community colleges.

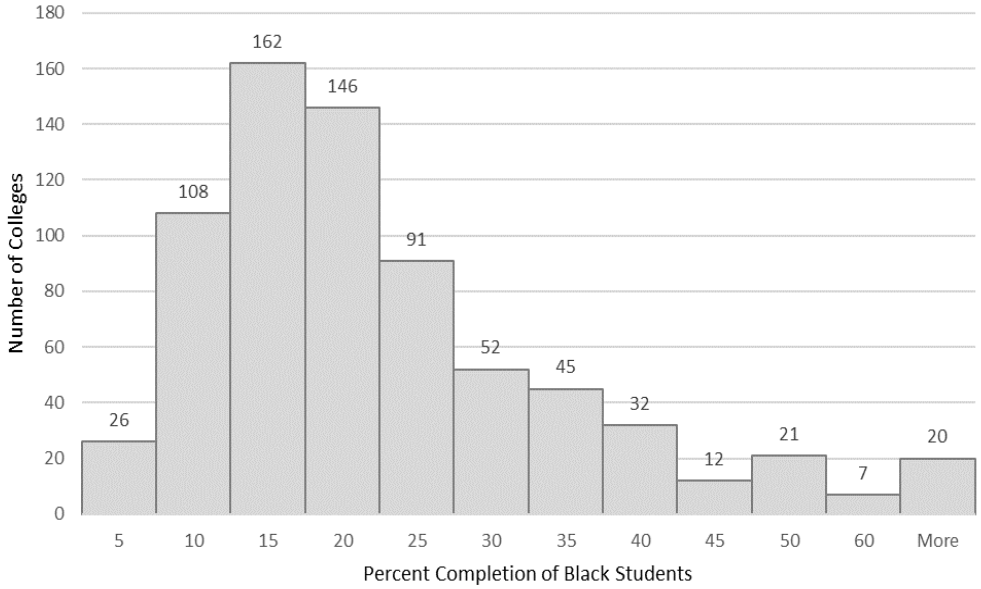


Figure 9. 2020 Summary of Black Student Completion Rates at Community College (N = 722)

The data in Figure 9 shows that most community colleges report Black student completion rates below 30%. However, a number of colleges reported higher completion rates for Black students, resulting in an overall distribution skewed to the right.

The graph for White student completion rates in Figure 10 shows completion rates in the double digits for all colleges, with 26 colleges reporting very high completion rates greater than 60%. The White student completion rate data approximated a normal distribution, with only a slight rightward skew. Figure 10 summarizes White student completion rates for the sample of 722 community colleges.

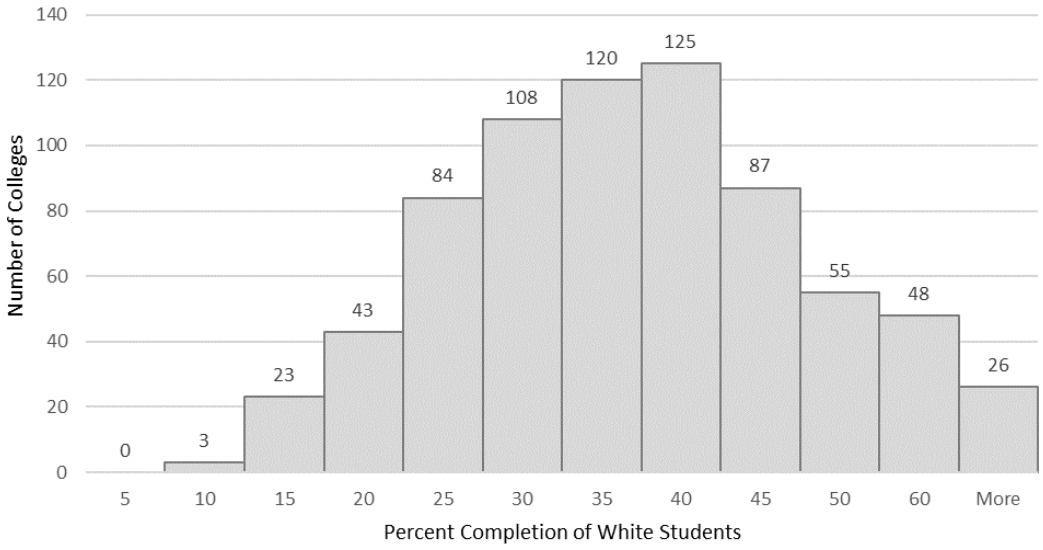


Figure 10. Summary of 2020 White Student Completion Rates at Community College (N = 722)

Differences in Black and White Completion Rates

The study's primary variable of interest is the difference in Black and White community college completion rates. This variable was calculated as $W_i - B_i$, where W_i represents the White community college completion rate and B_i the Black student completion rate for each community college. The graph for the differences in completion

rates of Black and White in Figure 11 is normal in shape, with most data clustered tightly around the mean of 14.1%. At the tails, some colleges reported slightly higher Black over White student completion rates (n = 19) but with almost 100 colleges with White student completion rates 30 percentage points or more than Black student completion rates. Figure 11 summarizes Black student completion rates for the sample of 722 community colleges.

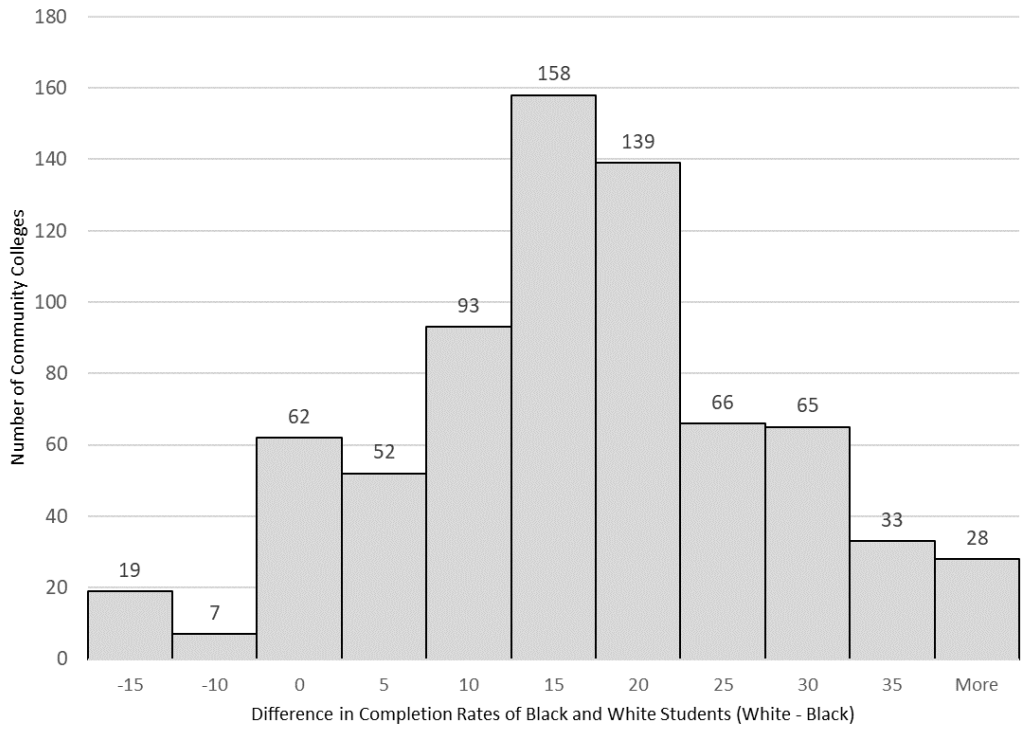


Figure 11. Summary of Differences in 2020 Black and White Student Completion Rates at Community College (N = 722)

The 2020 completion rate data from a national sample (*n* = 722) of community colleges showed Black student completion rates as much lower than White student completion rates at community colleges. A *t*-test confirmed that the difference in completion rates between Black and White students was significant and unlikely to happen by chance, $t(1442) = 19.4$, $p < .0001$.

Adequacy of Cohort Sizes for Black and White Completion Rates

The IPEDS data used to determine community college completion rates of Black and White students derives from studying cohorts of first-time, full-time freshmen over three years. The study tracks students within the cohort and, upon completion, counts the students as completed. The completion measure is calculated from the number of completers divided by the size of the original cohort. The analysis of the n = 722 community colleges shows that Black student cohorts ranged in size from 0 to 1,456, and White student cohorts ranged from 2 to 3,558. Based on these findings, several community colleges reported small Black student cohorts while others had small White student cohorts. The possibility that Black and White student completion rates were based on unequal and inadequately sized cohorts posed a potential threat to the reliability of findings and prompted further investigation.

To mitigate this risk, the researcher conducted an analysis to ensure completion rates were derived from cohorts of adequate size. This additional analysis involved determining the minimum sample size Black student cohort, n_B, and a minimum White student cohort, n_W, for each college. The calculation of sample sizes needed to compare two proportions with two samples of unequal size was given by:

$$n_B = \left(\frac{p_W(1-p_W)}{k} + p_B(1-p_B)\right)\left(\frac{z_{1-\alpha/2}+z_{1-\beta}}{p_W-p_B}\right)^2 \text{ and}$$

$$\mathrm{n_W} = kn_B,$$

where

$\mathrm{k} = \mathrm{n_W}/\mathrm{n_B}$,

$\alpha = .05$, probability of a Type I error, and

$\beta = .20$, probability of a Type II error or (1- β) = 0.80 power (Chow et al., 2008).

Using these formulas, the researcher calculated sample size minimums for Black and White student cohorts for the 722 community colleges. For each college, *k* was calculated as the ratio of students in the White student cohort divided by the students in the Black student cohort. The values of P_W and P_B represent the theoretical completion rates of each group (Chow et al., 2008). P_W and P_B were assigned the median value of the distribution of Black and White student cohort completion rates, 0.35 and 0.18, respectively.

The analysis of sample sizes for two proportions with two samples of unequal size confirmed that many colleges had unreliable data for completion rates in one or more groups of students. In total, 418 community colleges had cohorts too small for a reliable comparison of completion rates between Black and White students. These colleges were eliminated from further analysis, and the revised sample of community colleges totaled $n = 304$. The results of this investigation of cohort sizes are provided in Appendix M, and colleges excluded from the study were noted.

The revised sample size, $n = 304$ community colleges, is substantially smaller than the original sample of 722 colleges. To avoid committing a Type 2 statistical error, an a priori power analysis was conducted (Faul et al., 2009). The analysis projected a minimum sample size of 166 colleges as necessary to generate a power of 0.95 with nine predictor variables. These results determined that the revised sample of 304 community colleges was more than adequate to investigate the predictive nature of the nine independent variables on closing the gap between Black and White community college student completion rates.

Research Objective 2

Describe institutional characteristics including college affordability and financial aid, instructional investment, student services, and other institutional characteristics.

Research objective 2 described institutional characteristics, including college affordability and financial aid, instructional investment, student services, and other institutional characteristics. This study examined nine IPEDS institutional variables that previous studies identified in the literature review indicated are associated with influencing completion rates of community college students. This study investigates whether these variables influence the closing of completion rate gaps between Black and White community college students. IPEDS data has been widely used to analyze the institutional performance of college completion rates. However, this research is the first to apply IPEDS data to investigate variables influencing the completion rate differences between Black and White community college students. All descriptive statistics presented in this section are based on variables from the revised sample of $n = 304$ community colleges.

Black Instructional Staff

Black instructional staff was measured by the percentage of Black instructional faculty members during the 2017 to 2018 school year. In the study's sample of 304 community colleges, the average percent of Black instructional staff was 8.5%, SD = 8.5. The minimum percentage was 0%, and the maximum was 56%. Figure 12 summarizes the frequency distribution of colleges by percent of Black instructional staff.

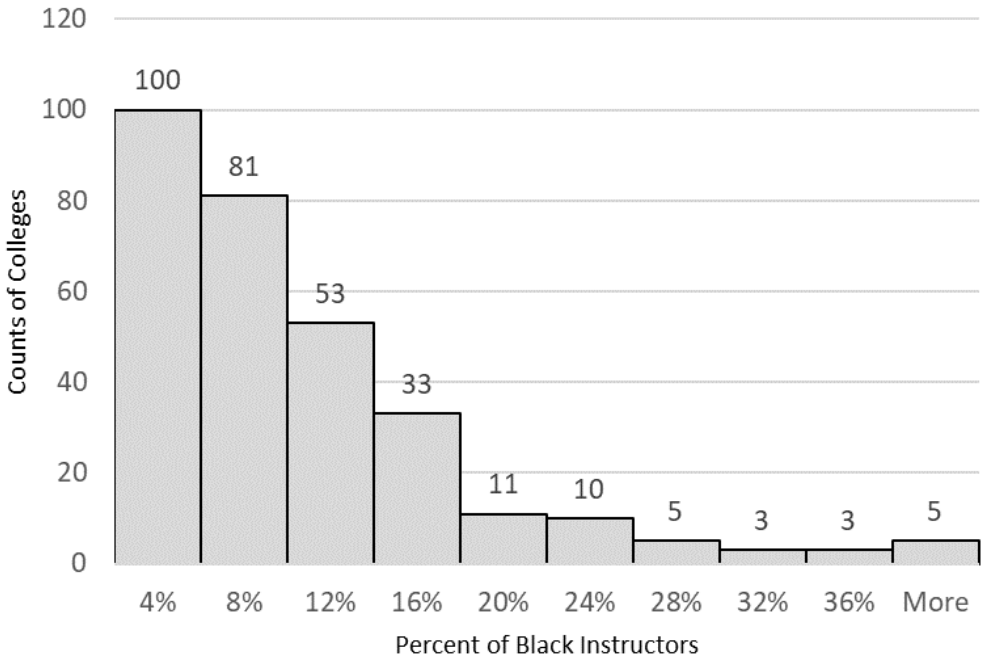


Figure 12. Distribution of Community Colleges by Percent of Black Instructors

Black Student Enrollment

Black student enrollment was defined as the percentage of Black students represented in the fall enrollment of 2017 for each institution in the study's sample of 304 community colleges. The fall 2017 term was used because it was the beginning term of this study's reported 2020 IPEDS NCES completion rate cohort. The average percentage of Black students enrolled was 18%, SD = 13. The minimum was 2%, and the maximum was 81%. The frequency distribution of colleges by percent of Black students enrolled is shown in Figure 13.

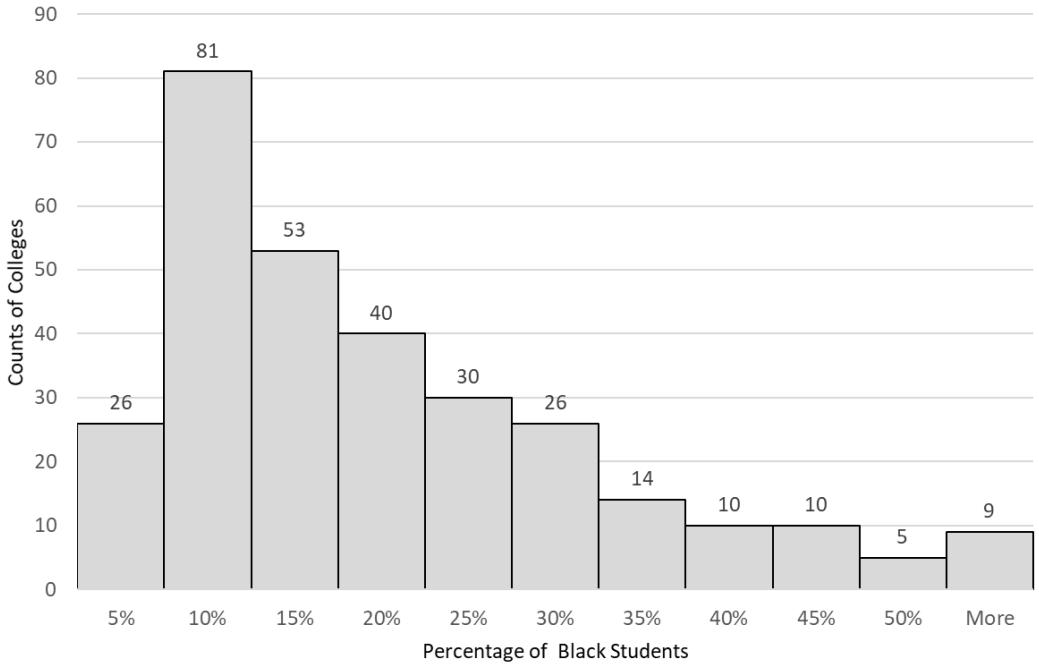


Figure 13. Distribution of Community Colleges by Percent of Black Students

Degree of Urbanization

Previous research has shown that urban or rural colleges have different patterns of completion rates. Generally, colleges in urban areas have lower graduation rates than suburban ones, while rural colleges have the highest completion rates (Bailey et al., 2005).

NCES IPEDS divides colleges into 12 geographic categories ranging from rural remote to community colleges located in large cities. This data was coded to a numerical scale by assigning the degree of urbanization of each college to an ordinal variable ranging from 1 to 12, where 1 represents very rural and remote colleges and 12 represents colleges in large urban areas. The higher the value, the more urbanized the institution. Table 6 shows the distribution of the study's sample of 304 community colleges by their degree of urbanization.

Table 6

Counts of Community Colleges (N =304) by degree of Urbanization

Degree of Urbanization	Value Assigned	*N* Colleges
City Large	12	46
City Midsize	11	36
City Small	10	43
Suburb Large	9	74
Suburb Midsize	8	10
Suburb Small	7	4
Town Fringe	6	4
Town Distant	5	30
Town Remote	4	14
Rural Fringe	3	35
Rural Distant	2	5
Rural Remote	1	3

While this data has a clear and logical sense of order, the distances between each degree of urbanization remains unknown. The topology of the data skews towards colleges in more urban areas. This ordinal data set's median and mode were 9, categorizing a community college in a large suburban area.

Federal Financial Aid

Federal financial aid was measured as the percentage of students receiving a Pell grant while attending the institution during the 2017 to 2018 academic year. For the sample of 304 community colleges, the average percentage of students receiving a Pell grant was 37%, SD = 11%. The minimum was 6%, and the maximum was 68%. The

frequency distribution of colleges by percent of students receiving Pell grants is shown in Figure 14.

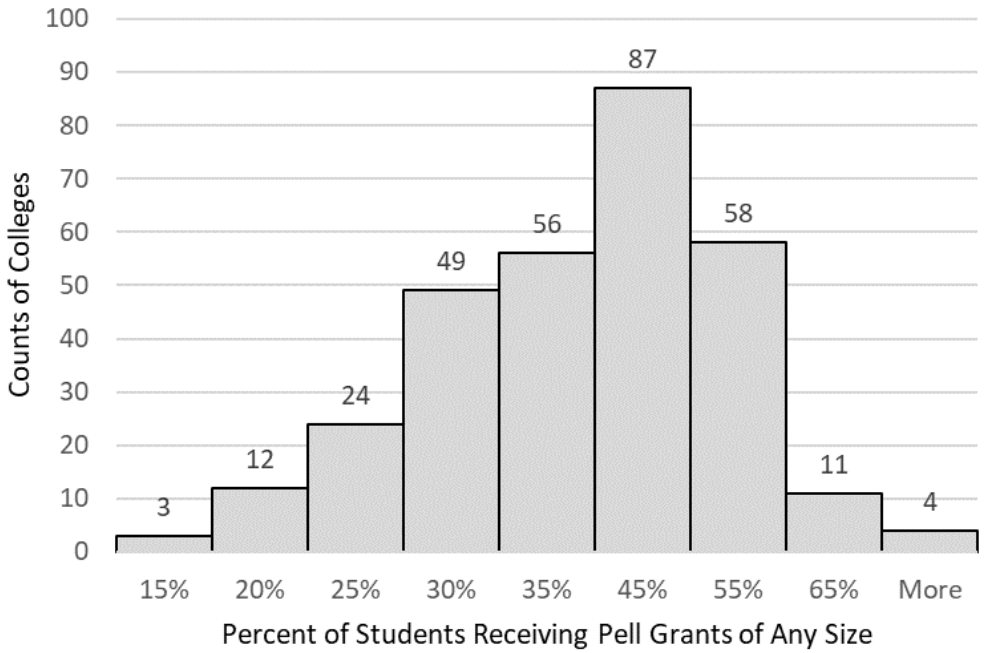


Figure 14. Distribution of Community Colleges by Percent of Pell Grants

Instructional Spending

Instructional spending was measured by the amount of money spent per full-time equivalent (FTE) student for fall 2017 to spring 2018 school year on instructional salaries, equipment, and other budgeted items for programs of study. The FTEs of students are calculated by the number of students attending full-time, added to the number of hours of students attending part-time, divided by the number of hours representing a full-time course load. A full-time course load is typically 15 or 12 semester hours, depending on an individual college's definition of full-time.

In this study's sample of 304 community colleges, the average cost spent per FTE on instruction was \$5,784, *SD* = \$1,600. The minimum was \$1,851, and the maximum

was $16,151. The frequency distribution of instructional spending per FTE is shown in Figure 15.

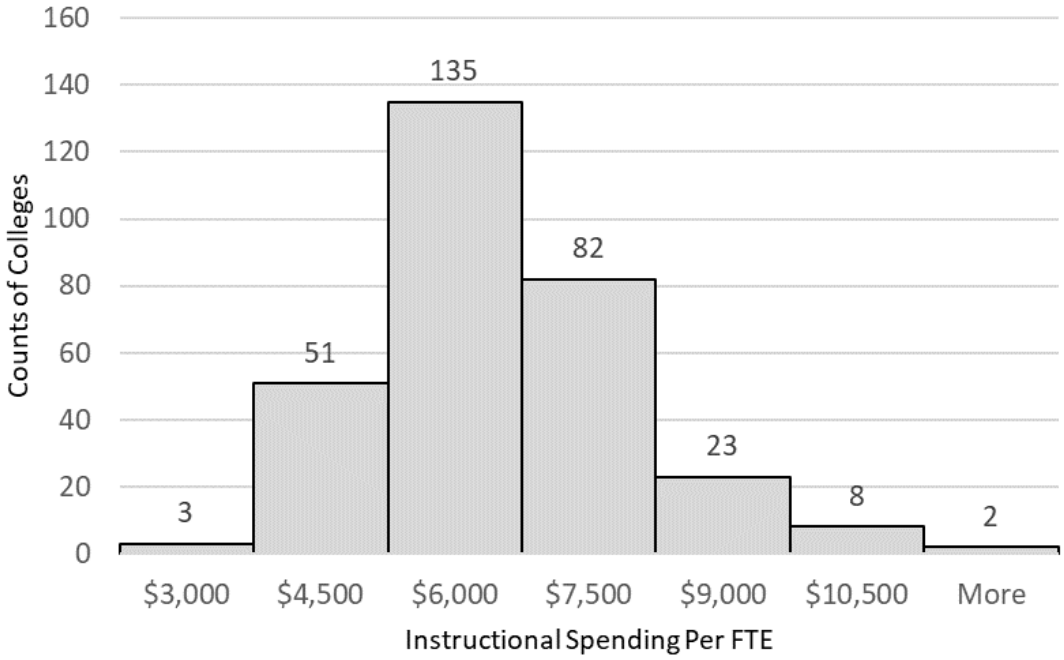


Figure 15. Distribution of Community Colleges by Instructional Spending

Size of College

For this study, the size of a community college was based on enrollment. Using this definition, the size of each community college was determined by the institution's enrollment as reported to NCES for the fall 2017 term. Figure 16 shows the distribution of colleges by size.

For this sample, the average number of students enrolled at each institution in the sample was 10,121; however, several large outlier institutions with enrollments of over 50,000 students inflate the mean as representative of the group. The median of the sample was 7,319.

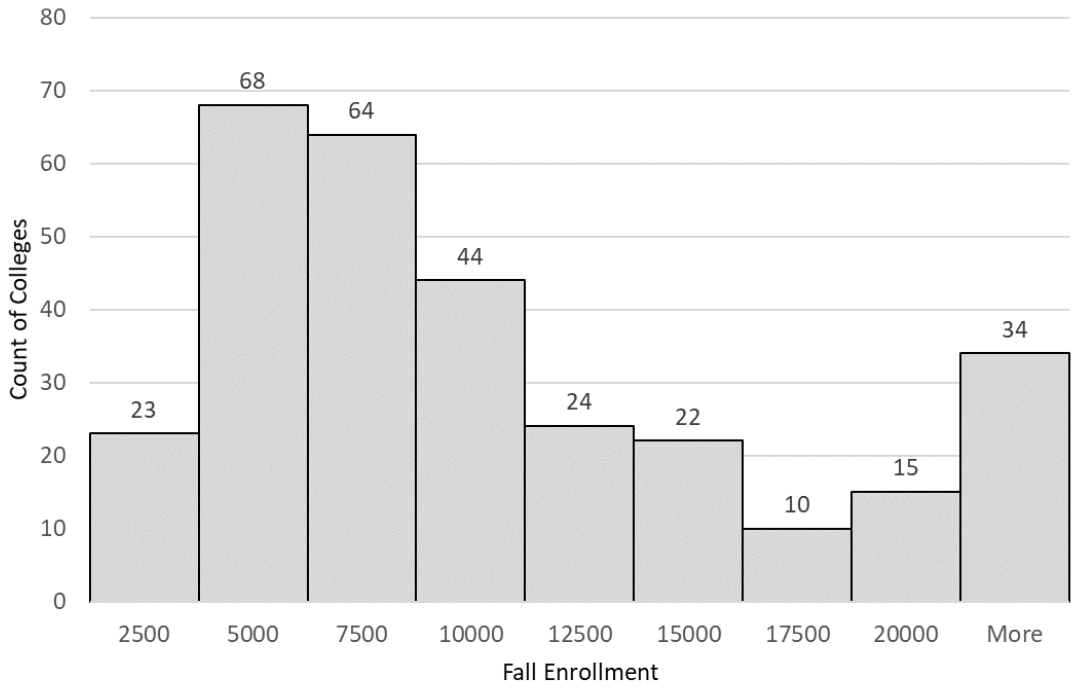


Figure 16. Frequency Distribution of College Size

Student-to-Faculty Ratio

The student-to-faculty ratio is a measure of the number of full-time faculty in relation to number of students. For each college, the number of FTE faculty members is divided by the number of FTE degree-seeking students. Students are considered full-time based on the number of enrolled semester hours, and the IPEDS formula requires 3 part-time faculty members to equal one full-time faculty member (IPEDS, n.d.). When computed consistently across institutions, these measures provide a useful measure of both class sizes and numbers of faculty on campus.

Among sample colleges, the average class size in fall 2017 was 20, *SD* = 4. The minimum student-to-faculty ratio was 10 students, and the maximum was 35. The frequency distribution of colleges by average class size is shown in Figure 17.

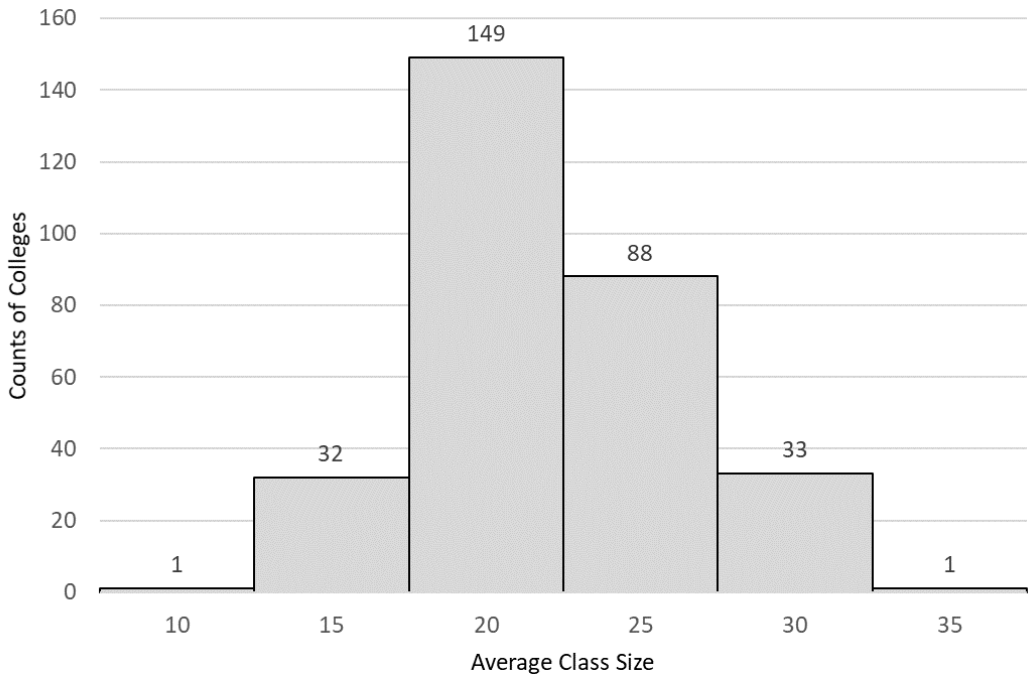


Figure 17. Distribution of Community Colleges by Average Class Size

Student Services Spending

Student services spending was measured by the amount of money spent per FTE student for the 2017 fiscal year on student services salaries and other budgeted activities for student services departments. Student services vary by institution and include functions such as admissions, financial aid, student organizations, advising, and mental health services. Student services spending includes the amount of spending for all instructional and non-instructional support services to students. FTEs for students are calculated in the same way as described in instructional spending.

In the study's sample of 304 community colleges, the average amount spent per FTE on student services was $1,441, *SD* = 524. The minimum was $284, and the maximum was $3,674. The frequency distribution of student services spending per FTE is shown in Figure 18.

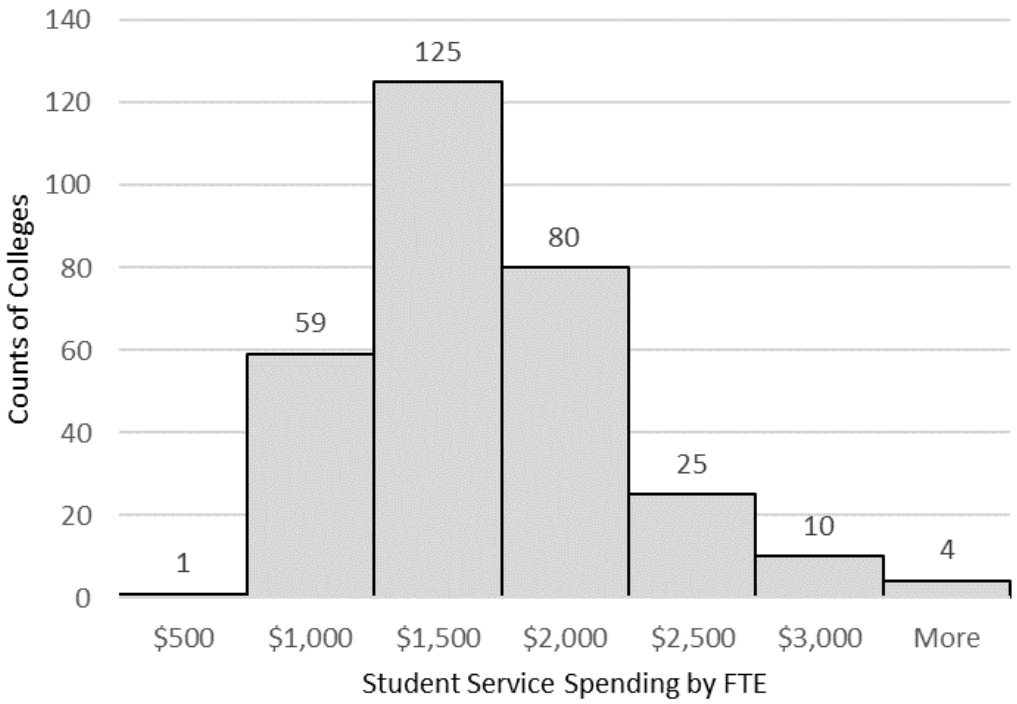


Figure 18. Distribution of Community Colleges by Student Service Spending

Tuition Costs

The cost of college was determined using each institution's cost of annual tuition and fees for the fall 2017 and spring 2018 semesters. Fees are defined as those mandatory for attendance and assessed at the time of registration. Fees include instructional support fees, technology fees, special course fees, student activities fees, and health fees, among others. Other costs, such as living, food, daycare, and other expenses, were not included. Figure 19 shows the distribution of colleges by tuition costs.

In the study's sample of 304 community colleges, the average cost of attendance was $3,796, *SD* = $1,299. The minimum cost of tuition and fees was $1,104, and the maximum cost was $7,830. The median for the sample was $4,084.

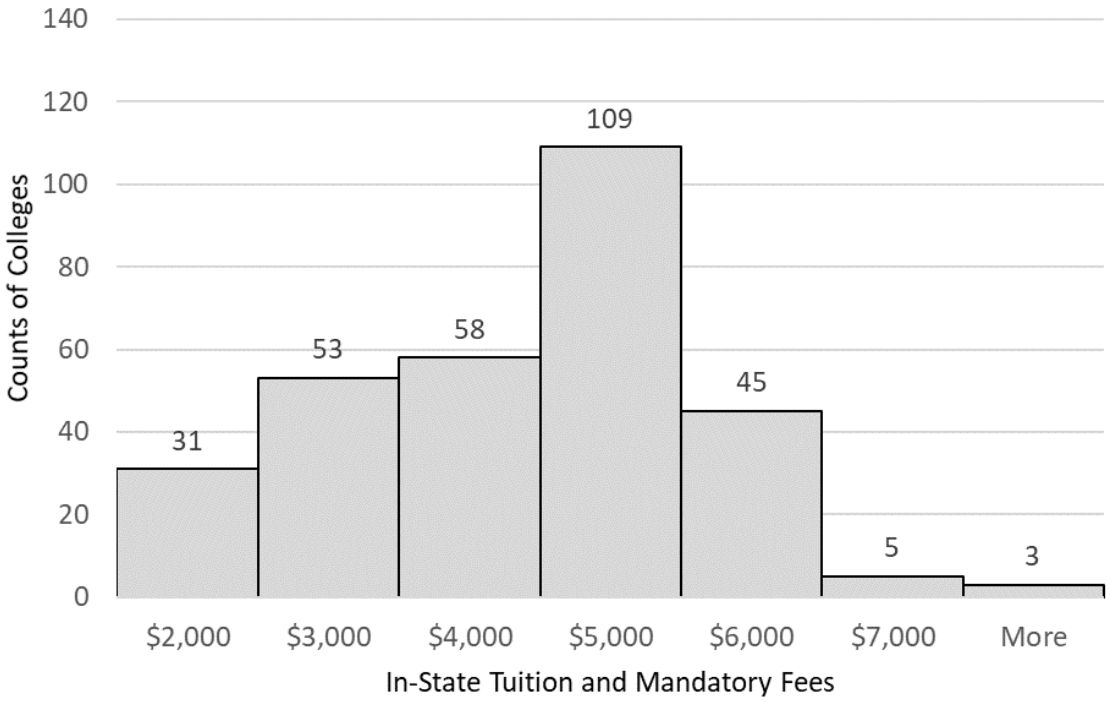


Figure 19. Distribution of Community Colleges by In-State Tuition and Fees

Research Objective 3

Investigate institutional data and determine predictive factors positively influencing equity gaps in community college student success.

Research objective 3 involved investigating institutional data to determine predictive factors positively influencing equity gaps in community college student success. Ordinary linear regression modeling was used to investigate the level of impact that the nine explainer variables have on closing the gap between Black and White completion rates among community colleges in the sample. These nine variables were selected based on findings from previous studies on community college completion rates.

Satisfying the Assumptions of Linear Regression

This section investigates the four assumptions of linear regression: linear relationship, collinearity, independence, and homoscedasticity. Each assumption is enumerated below, along with a brief definition and explanation of how it was met.

1. Linear Relationship assumes that the relationship between the independent and dependent variables is linear. Scatterplots were used to visually check this assumption (Mendenhall & Sincich, 2011). The assumption of linear relationships between each of the nine IVs and the DV was investigated, with the most linear scatterplots being the percent of students receiving a Pell grant and the percent of Black faculty members. All other IVs appeared linear in appearance but weaker in terms of the strength of the relationship. The plots did not appear logarithmic or curvature.
2. Collinearity assumes that the predictors are not too highly correlated with one another. To test this assumption, SPSS provides a variance inflation factor (VIF) for each regression variable. If VIF statistics fall between 0 and 5, collinearity may be assumed (Frost, 2019). The collinearity assumption was investigated, and all VIF statistics were less than 5; the assumption of collinearity was satisfied.
3. Independence assumes that the data points are independent of each other. To determine this, the assumption was tested using the Durbin-Watson statistic. The Durbin-Watson must be between 1 and 3 to satisfy the assumption of independence (Mendenhall & Sincich, 2011). The model's Dubin-Watson statistic was 2.1 and thus the assumption of independence was satisfied.

4. Homoscedasticity assumes that the variation in residuals is similar across the model. This can be verified by examining a special scatter plot of the entire linear model, rather than the individual variable scatter plots used in the test for linearity. The scatter plot must be void of any pattern to meet the assumption of homoscedasticity (Mendenhall & Sincich, 2011). This scatterplot is shown in Figure 20 and has no observable pattern. Additionally, a correlation between the standardized predicted values and the absolute value of the standardized residual values showed no significant correlation, $p = .078$, $p > 05$. Based on these findings, the assumption of homoscedasticity was satisfied.

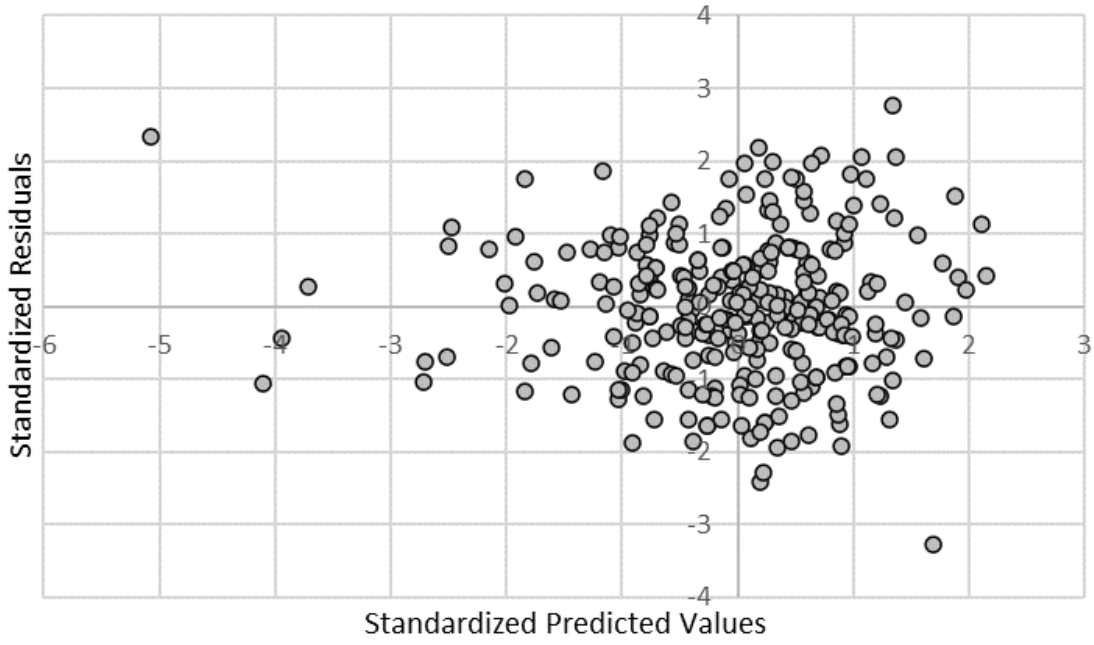


Figure 20. Graph of Standardized Predicted Values and Standardized Residual Values

Linear Regression Outcomes

With all four assumptions of linear regression satisfied, reliability and validity increase and inferences may therefore be drawn from the statistical results with

confidence. Satisfying these assumptions also indicates that using ordinary linear regression as a method to study this problem is sound. Linear regression was used to determine the predictive nature of each of the nine institutional variables on the gaps in completion rates between Black and White students. The theoretical model is given by:

$$D = a_0 + a_i I_j + e,$$

where:

D is the theoretical difference between Black and White college completion rates,

a_0 is the intercept,

I are institutional factors for j = 0, 1, 2, 3, 4, 5, 6, 7, 8, 9; and

e is the error term.

SPSS was used to solve the regression equation using the enter method, where all variables were entered into the model at one time. The regression model was significant and was found to predict a significant proportion of the variance for the gap between Black and White students, $R^2 = .15$, $F(9, 294) = 5.94$, $p < .001$.

While the variables in this study were previously shown as responsive to degree completion rates, many were not responsive to the closing of gaps between Black and White students. Most of the explainer variables had standardized coefficients very near zero. They were also not found as significant predictors of equity gaps in Black and White community college student completion rates. Only the percent of Black instructional staff was found to be a significant predictor of closing completion gaps between Black and White students. Table 7 shows the model's standardized coefficients, the results of a two-tailed t-test for each coefficient, and the corresponding level of

significance for each variable. The percent of Black instructional staff was a significant predictor of closing the gap in completion between Black and White students< $p < .05$.

Table 7

Linear Regression Model Standardized Coefficients (Beta)

Independent Variables	Beta	*T*	Sig
Black Instructional Staff	-0.209	-2.109	0.036*
Black Student Enrollment	-0.135	-1.245	0.214
Degree of Urbanization	-0.065	-1.050	0.295
Federal Financial Aid	0.049	-0.058	-0.843
Instructional Spending	0.041	0.599	0.550
Size of College	-0.069	-1.023	0.307
Student to Faculty Ratio	0.040	0.655	0.513
Student Service Spending	0.049	0.791	0.429
Tuition Costs	0.074	1.248	0.213

Unusual Observations

Highly unusual observations, or outliers, cause many problems when using multiple linear regression. An outlier is an observation that does not fit the linear regression model well (Frost, 2019). Outliers were identified by examining the distribution of standardized residuals. Any standardized residual greater than +3.0 or less than -3.0 is considered a highly unusual occurrence and should be inspected further for consideration as part of the sample (Frost, 2019). The sample of 304 community colleges

was evaluated for the existence of outlier observations by calculating the z-scores of the distribution of residuals, the differences in the observed completion gap, and the predicted completion gap between Black and White students. The residual z-scores ranged from -2.99 to 3.37, indicating the presence of at least one outlier case. Inspection of the data found one outlier observation, for only one community college in the sample.

The outlier was removed from the dataset, and the model was reexamined. The results determined the presence of the outlier had no impact on the strength and significance of the model, $R^2 = .15$, $F(9, 293) = 5.94$, $p < .001$. Table 8 shows the revised model's standardized coefficients and level of significance.

Table 8

Linear Regression Standardized Coefficients Outlier Removed

Independent Variables	Beta	*T*	Sig
Black Instructional Staff	-0.242	-2.431	0.016*
Black Student Enrollment	-0.090	-0.820	0.413
Degree of Urbanization	-0.070	-1.120	0.264
Federal Financial Aid	-0.084	-1.219	0.224
Instructional Spending	0.040	0.597	0.551
Size of College	-0.067	-0.992	0.322
Student to Faculty Ratio	0.046	0.752	0.453
Student Service Spending	0.043	0.708	0.480
Tuition Costs	0.044	0.738	0.461

Additionally, the inspection and removal of the outlier data did not alter the strength and direction of the model's IVs. The percentage of Black instructional staff was slightly more significant. It remained the only variable with predictive value ($p < .05$), accounting for 15% of the variance in a college's ability to close the gap in completion rates between Black and White students. The next section builds on the results of the quantitative data analysis and presents the qualitative results of the interview data.

Qualitative Results

The qualitative strand of this research aimed to supplement and validate institutional characteristics found by quantitative methods, and yield insights regarding previously unmeasured institutional behaviors that may be responsible for closing the completion rate gap between Black and White community students. This was accomplished via a series of interviews, targeting community colleges with the most knowledge and information relevant to closing these gaps. The interview instrument, based on Mara Bensimon's equity-mindedness theory (2005), provided an equity lens to examine the culture, programs, and initiatives within community colleges. Research objectives 4, 5, and 6 align with the exploration of the qualitative research strand, and results for each are presented in this section.

Research Objective 4

Describe interview participant demographics.

Research objective 4 involved describing the interview participant demographics. The NCES IPEDS dataset identified community colleges with zero or near zero differences in completion rates. These colleges, identified in Appendix M, were invited to

participate in interviews, with interviews continuing until the researcher reached saturation.

A full understanding of the interview selection process requires a brief review of this study's overall research and data selection trajectory. This study began with a sample of 722 community colleges at which associate degrees were the highest degree offered. Further analysis determined that 418 community colleges had cohorts too small for a reliable comparison of completion rates between Black and White students. These colleges were eliminated from further analysis, and the revised sample of community colleges totaled 304. Of these, 39 colleges fell within ±5% gaps in completion rates between Black and White students and were selected for the interview sample, with 8 interviews conducted before reaching saturation. Once reaching saturation, three additional interviews were conducted, bringing the total to 11 interviews and an additional interview for triangulation purposes. Figure 21 details the reduction of the original sample during each phase of the research investigation.

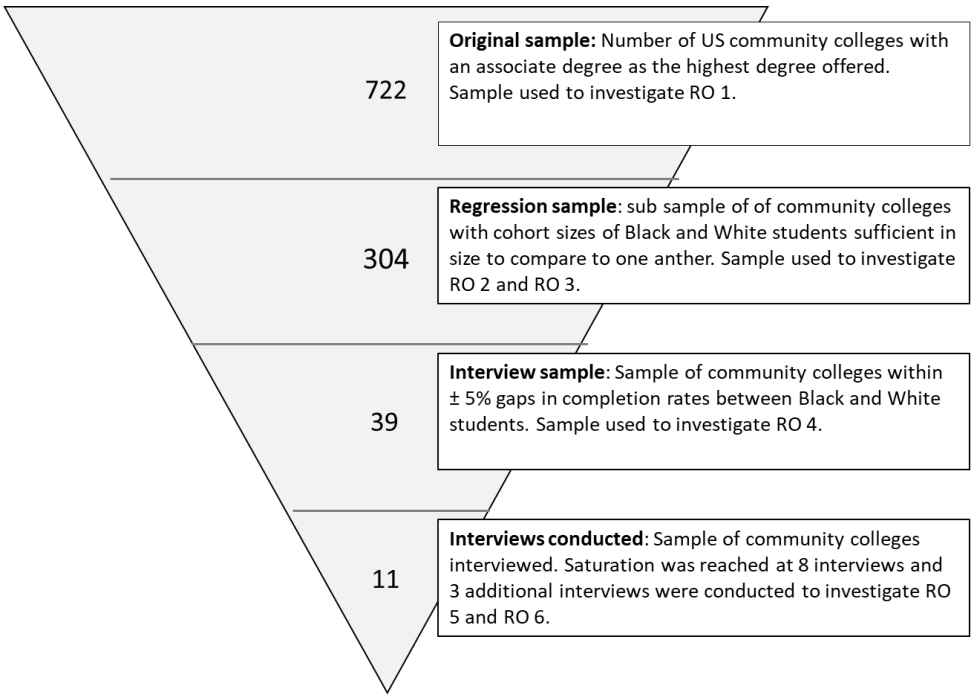


Figure 21. Description of Sample Sizes for each Research Objective

Interviews were conducted with community college presidents and other executive leaders. The researcher reached saturation after eight interviews and conducted three additional interviews to ensure no new information emerged. Altogether, the colleges interviewed evinced a wide geographic distribution, spanning eight states. Interview participants were representative of the interview sample. The average completion rate gap between Black and White students within the interview sample and within the colleges interviewed was 2.4% and 2.2%, respectively. The average percent of Black instructional staff was 13% for both groups. Table 9 shows the demographics of the colleges in the study, the interview sample, and the interview participants. The interview participants are reported in aggregate to preserve the anonymity of the colleges.

Table 9

Averages of Sample, Interview Sample, and Interviewed Institutions

Demographic Variable	Regression Sample n = 304	Interview Sample n = 39	Interview Participants n = 11
Gap in Black and White Completion Rate	14.7%	2.4%	2.2%
Black Instructional Staff	8.5%	13%	13%
Black Student Enrollment	18%	26%	25%
Degree of Urbanization (0-12 scale)	8.2	8.0	8.7
Federal Financial Aid	37%	42%	40%
Instructional Spending (per FTE)	$5,784	$5,413	$4,935
Size of College (fall enrollment)	10,121	10,496	14,662
Student to Faculty Ratio	20:1	21:1	22:1
Student Service Spending	$1,441	$1,288	$1,044
Annual Tuition Costs	$3,796	$3,563	$3,420

Research Objective 5

Explore institutional alignment with equity-mindedness indicators.

Research objective 5 involved exploring institutional alignment with equity-mindedness indicators. The 10-question instrument explored four domains of interest: intent, strategy, culture, and support. Thematic coding of the interviews was based on these four pre-established code categories and, within each domain, interview segments were coded to capture specific institutional behaviors related to each survey question.

These codes were later aggregated into themes. Figure 22 shows the relative frequency of codes related to each domain of interest for the 11 interviews.

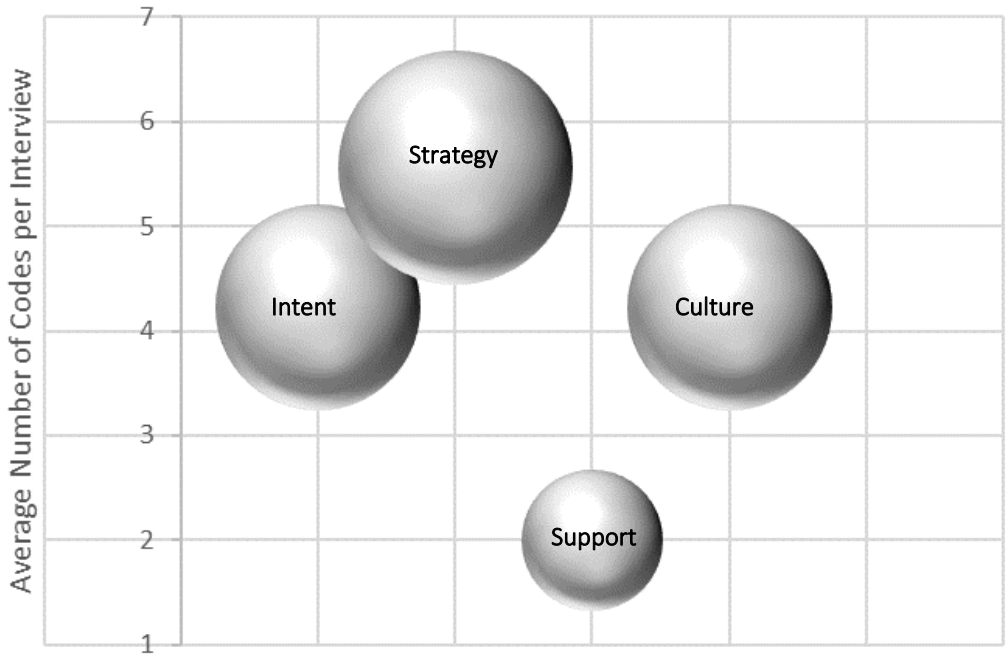


Figure 22. Relative Frequency of Coding by Domains of Interest

The intent domain explored how colleges took purposeful steps to close achievement gaps between Black and White students. Table 10 shows the specific interview questions exploring the intent domain.

Table 10 *List of Interview Questions Targeting Institutional Intent*

Question	Description
3 & 4	Explore the use of data to monitor completion and assessment by race
5	Campus leadership dialogue about racial inequality
7	Strategic planning / initiatives to increase retention/completion by race

A select number of colleges displayed well-developed frameworks governing their efforts to achieve equitable completion outcomes. Still, all interview participants

articulated an awareness of the importance of mitigating completion rate gaps for students of all races, alongside some forms of intentional gap-reduction. Fifty-two of the 203 coding interview segments, or 26%, referenced the college's intent to raise completion rates by race. Figure 23 shows a bubble chart of this data, with each bubble representing an interview. The size of each bubble captures the number coded in each domain; bubbles with larger areas represent higher numbers. The completion rate gap for each college is shown on the *y*-axis.

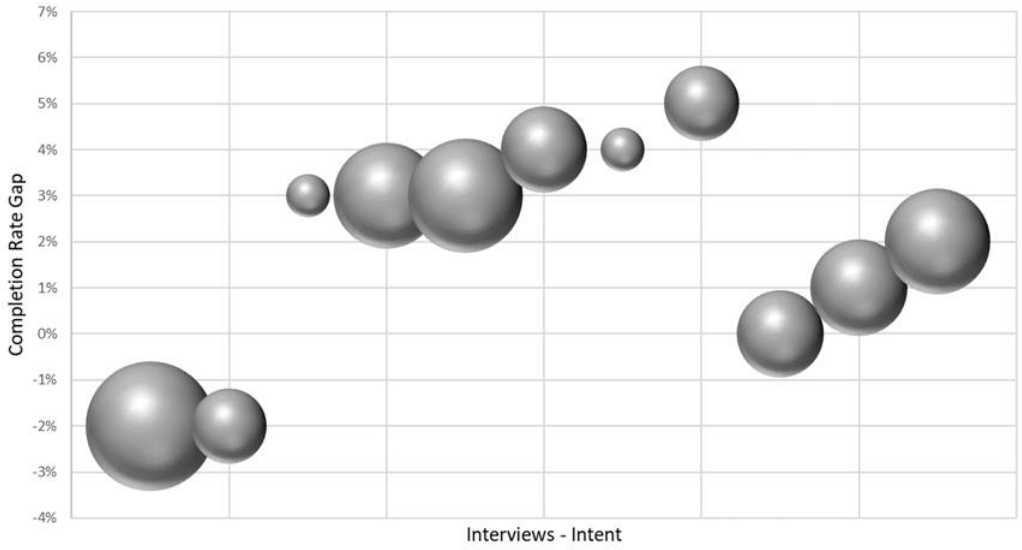


Figure 23. Bubble Chart of Coding for Intent by Interview

The strategies and tactics domain encompassed all initiatives to close gaps in completion between Black and White students. These strategies included new and changed policies, modifications to the instructional pedagogy, and expanding or changing student services. Interviews sought to uncover high-impact strategies and institutional behaviors aimed at closing achievement gaps. Table 11 lists three questions employed to specifically explore this domain.

Table 11

List of Interview Questions Targeting Institutional Strategies and Tactics

Question	Description
1	Reflect on quantitative findings at your own institution
2	Top reason for closing completion gap
11	Other reasons for success in closing completion gaps

Strategies and tactics to close completion gaps were the most frequently discussed portions of the interviews, accounting for nearly one-third of all interview segments. Sixty-two out of 203 interview segments, or 31%, referenced multiple initiatives to raise completion by race. Figure 24 shows coded data for strategies for each interview.

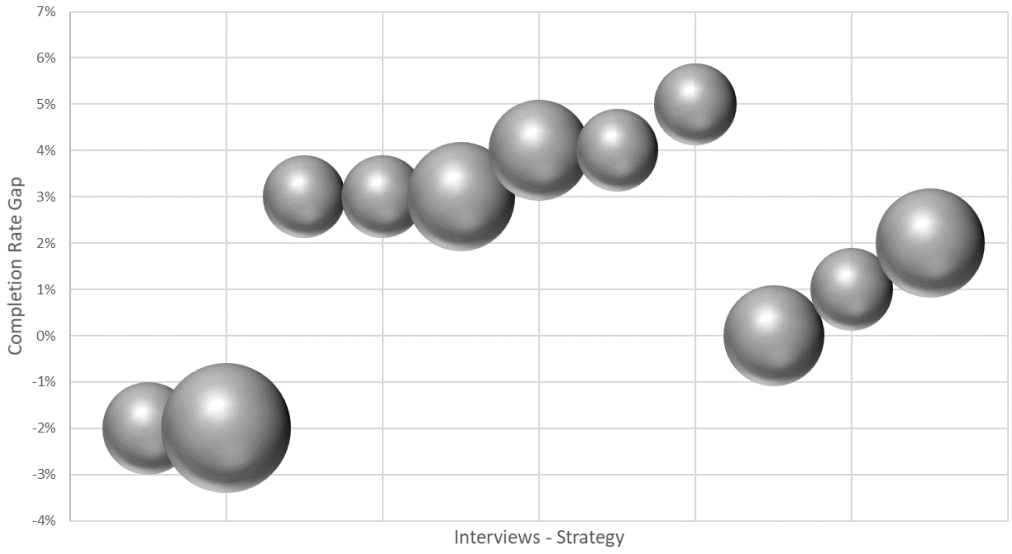


Figure 24. Bubble Chart of Coding for Strategy by Interview

The culture domain explored the daily work of faculty, staff, and administration related to promoting equitable outcomes. It also explored students' sense of belonging

and identity while attending the institution. Table 12 lists the specific interview questions designed to explore the culture domain.

Table 12

List of Interview Questions Targeting Culture of the Institution

Question	Description
6	Describe culture at your institution
8	Diversity of faculty as it relates to the diversity of students

Out of 203 coding interview segments, 52, or 28%, reference college culture in efforts to close gaps in completion rates. Figure 25 shows the relative concentration of strategies for each interview.

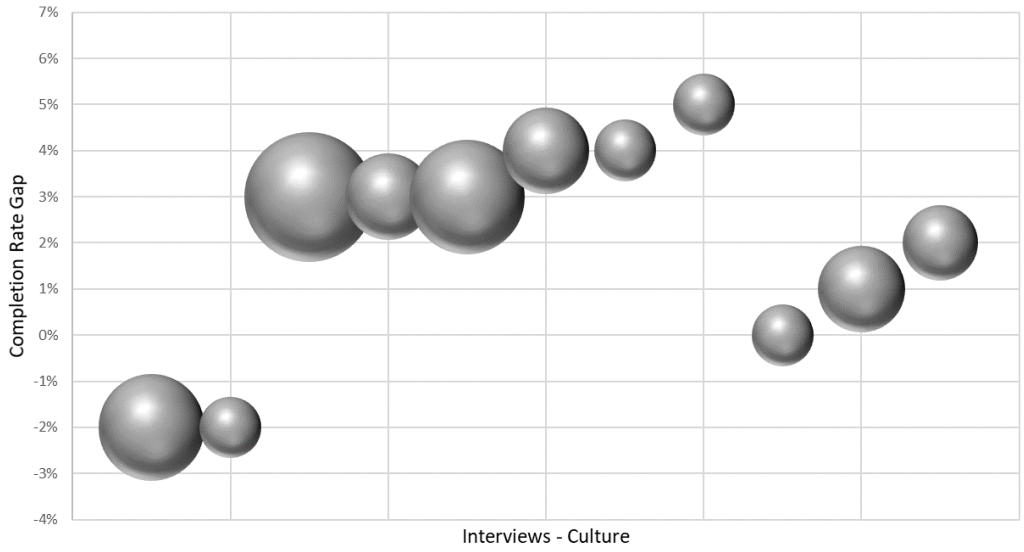


Figure 25. Bubble Chart for the Coding of Culture by Interview

Finally, the support domain investigated the levels of institutional support for effort to create equitable completion outcomes, focusing on support from each college's

primary stakeholders, community, and governing board. Table 13 lists the specific interview questions designed to explore the support domain.

Table 13

List of Interview Questions Targeting Institutional Support

Question	Description
9	Support of institution's trustees to work in equity
10	Support from the community and philanthropy

Support from trustees and others to close completion rates between Black and White students was the least frequently discussed portion of the interview data. In general, colleges lacked support for the types of programs and services they needed to bring to scale the type of initiatives they knew would help students. Thirty-five out of 203 coding interview segments, or 18%, referenced support from external sources in efforts to raise completion by race. Figure 26 shows support data for each interview.

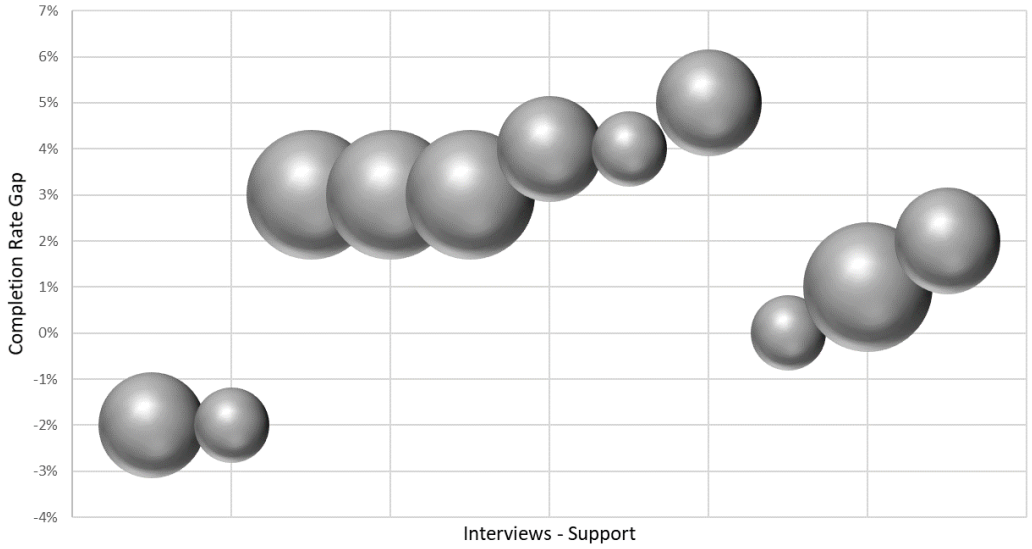


Figure 26. Bubble Chart for Coding of Support Data by Interview

Overall, Bensimon's equity-mindedness assessment tool appropriately collected data and framed conversations with colleges about their efforts to close degree achievement gaps. When interviewees were asked for additional comments on their equity work, little additional data was collected. This suggests that the tool provided a framework for understanding of gap-closing efforts. Most importantly, the interviews revealed several major institutional behavior themes that impact equity work and help colleges close degree completion gaps between Black and White students; these themes are analyzed in the following section.

Research Objective 6

Explore institutional behaviors that positively affect racial equity gaps in community college completion.

Research objective 6 used the interview data to explore institutional behaviors that positively affect racial equity gaps in community college completion. Within the four domains of intent, culture, strategy, and support; six themes emerged that provided novel insight into the behaviors and tactics used to close equity gaps: disrupt the status quo (theme 1), expand institutional research capacity (theme 2), promote staff diversity (theme 3), foster an equity-minded culture (theme 4), include opportunities for social interaction (theme 5), and build partnerships with community-based organizations (CBOs) and philanthropic sources (theme 6).

Theme 1: Disrupt the status quo

Disrupting the status quo regarding college-level policy and structures emerged as the first theme. The need to remove, create, or change existing policies and structures in order to facilitate success among diverse groups of students was a theme identified within

the domain of intent. In addition to attending to culture, instructional supports, services, social supports, and the basic needs of students, a key part of creating equitable outcomes included the implementation of equitable policies and structures. One interviewee stated:

> Our system [of education] is not built for Black and Brown students, and we don't really want to acknowledge that very much. So, we keep hiring navigators to help students get through, but a crooked river is still a crooked river. Part of this work is about straightening the river; it is about taking a hard look at policies and structures preventing or discouraging these students from success.

Many colleges interviewed had to change longtime college policies and simplify institutional structures, making it easier for students to persist. For example, several colleges eliminated developmental education classes and placement testing. One interviewee said:

> We found that placement test scores were not predictive of success in general, and it performed particularly poorly for certain groups, including our minority students. We took the high school GPA, and other soft-skills type data from an entrance survey and moved to a guided placement model. This has worked very well for our students. It puts them in control of their choices based on research-based recommendations for classes and for the types of support services, such as tutoring, that they likely need to be successful.

Colleges had very creative tactics to help students in the classroom. As an example, one college employed the use of a peer instructor class navigator:

> We use our very best students—students passing a class with a good command of the material and also having a good reputation for helping others. Upon recommendation from their instructor, we hire the student to essentially take the class again, and this time, help other students get through it. It is very effective.

Theme 2: Expand institutional research capacity.

Expanding institutional research capacity emerged as the second theme within the domain of intent. Institutional research (IR) refers to the quality, accuracy, timeliness, and sensibility of data provided to college stakeholders that can enhance their decision-making abilities (Knight, 2003). All colleges interviewed discussed using data to identify, inform, and assess efforts to close completion gaps for minority students at all levels of the institution. The college administration used data to direct policy decisions and engage faculty, staff, and students to find ways to increase student success. Faculty and staff disaggregated student success data by race to identify patterns in student achievement, create and assess pedagogical initiatives, and direct services to students. One interviewee stated, "How we use the data is at the center of everything we do, and it's a work in progress."

Some colleges invested heavily in institutional research by increasing the number of institutional research staff members. Others expanded their institutional research capacity through participation in Achieving the Dream (ATD). ATD's work specifically identifies equity as one of the seven areas of institutional capacity. One interviewee stated:

> We put a lot of programs to support high-risk students, but the biggest change happened with Achieving the Dream. We started looking at demographics of achievement. We also compared student demographics with our community demographics and to faculty and staff demographics. We found out where we were on all these comparisons; it was a real eye-opener.

For the colleges interviewed, the use of data was a cornerstone to increasing equitable outcomes for Black students; and, while colleges may have taken different paths to get there, they were mature in their ability to use data to examine problems, generate conversations with faculty and staff, and create systemic change in their support of equity across their campuses. Colleges also noted the work took time. A series of quotes from two interviews presented below demonstrate how campuses worked to effectively use data to improve outcomes for students:

> For the first two years everyone denied the data. They were scratching their heads and thinking—that can't be right. We learned a lot of things as we began to study the student experience from registration to graduation and particularly how to better treat students during that first year.

> We began measuring everything we do a few years back, but that is a minimum. Once we evolved past that, how we use the data is at the center of everything we do. It is a work in progress, but everyone is clear that we need to use the data to make things better.

Theme 3: Promote staff diversity.

Promoting staff diversity through equitable hiring practices emerged as the third theme, with this ongoing work standing as a dominant theme within the domain of culture. The quantitative analysis of top-performing schools revealed that colleges with lower gaps in completion between Black and White students tended to have higher proportions of Black instructional staff. When asked, colleges responded that they did not solely hire based on race; they hired for the best candidate. At the same time, they recognized a lack of diversity among instructional staff and reported making significant progress toward improving diversity of instructional and administrative positions. Some colleges were more intentional regarding increasing diversity. One interviewee stated: "We have had a very conservative effort to hire a faculty that reflect our student body."

In addition to maintaining strong levels of diversity on hiring committees, colleges invested resources in hiring activities that widened searches. These efforts resulted in a more diverse pool of candidates, making their faculty and administrative staff more reflective of the students they served. Looking towards the local or regional HBCUs for recruitment was a strategy used by several of the colleges in this study. One interviewee stated:

> We are strategic about our local job postings. We made certain our local HBCUs were made aware of job openings. This has been essential for connecting our education programs and especially our nursing programs to the type of instructors with the backgrounds we need in these roles.

The intent to diversify staff went beyond faculty, and social support personnel were also included in efforts to increase diversity. One interviewee reported: "We have Black and Brown professional male counselors for our Black and Brown male students."

For many colleges interviewed, administration and Boards of Trustees regularly reviewed metrics for diversity. The work resulted in setting expectations for increasing faculty and staff diversity.

Theme 4: Foster an equity-minded culture.

Fostering an equity-minded culture among employees and students emerged as theme four. Promoting equity across campus and across audiences was a dominant theme within the culture domain. Colleges indicated a strong connection between equitable outcomes among students and a culture of equity among faculty and staff. Colleges signaled the importance of diversity, equity, and inclusion (DEI) through organizational structure, introducing DEI administrative roles and DEI committees comprised of faculty, staff, and students. One interviewee stated, "When they saw me as an African American leader, they said wow, you know, this is the first time that we've seen representation from your college." Another interviewee stated:

> We have a DEI advisory committee. It is comprised of about 40 members and includes faculty, staff, students, and community members. The committee's charge is to develop to provide college-wide leadership and support around continuous improvement in all things DEI—they also advise me as the college president.

Many colleges have now dedicated professional staff to the development of DEI on campus. One interviewee stated: "Our college, along with many others, have hired a

director-level position for implementing diversity, equity, and inclusion on campus." These professionals are responsible for a wide range of DEI-related professional development and programming for faculty, staff, and students. While colleges had been working on a DEI culture for many years, study participants note the murder of George Floyd in May of 2020 ignited a Civil Rights renaissance and, as a result, efforts were accelerated in their colleges. One interviewee stated, "After George Floyd there was a heightened sense of awareness to look at supporting students through an equity lens, and not just throwing supports out there and hoping the right people take them."

For the institutions interviewed, the main goal of an equity-minded culture was to make certain all students feel a strong sense of belonging on campus. Student experiences outside the classroom were also important and were listed as a key driver of increasing outcomes among Black students. Colleges interviewed invested heavily in student organizations, and peer networks that suited everyone, both Black and White, were available. One interviewee stated:

> We do a lot to support student clubs and organizations on campus. We have a wonderful Hispanic club, and it is led by Hispanic leaders. We have two organizations for African American students, and one is centered on culture because we have a population of international students from Africa.

Theme 5: Include social supports.

Going beyond academic and student services support and including both social supports and interaction opportunities emerged as theme five. Having an arsenal of strategies to support at-risk students was a dominant theme within the domain of strategy.

Colleges' strategies and tactics to improve equitable completion outcomes were as diverse as the students they serve. The most highly effective programs for retaining and completing more Black students were grounded in strong academic and service supports but also tended to involve a third dimension of supports—social ones. When interview participants were asked about their most effective programs, they all indicated social activities and supports as part of the program. A series of quotes from three separate interviews are presented below, demonstrating how social supports integrate into highly effective programs for closing equity gaps and how to fund them:

> We have a program targeted at Black and Brown men where they have peer counselors and professional counselors who are all black and brown males. It is much more than academic support—it is social too, and they have dinners together. Expectations are high and they are tough on each other. They shepherd these students and within the first couple of semesters of data, we saw a double-digit retention.

> Our college offers a particular set of supports for some of our most at-risk students. We have academic advising and mentor coaching, and students receive financial stipends as they reach academic goals, and through our early alert system, we can know exactly when students have challenges. Academic supports are only part of it. Advisors of these students have very small caseloads so that they can be integrally involved with them. We bring students together and do field experiences such as Broadway plays, and they develop this intense sense of community. This group has a 95%

> retention rate, and their rates of completion are really going through the roof.
>
> We have a program where students can grab a meal—as many as they want and take it home. This past year we have created 10,000 refrigerated and frozen meals to give to our students.

Other supports included transportation, childcare, intrusive advisement practices, learning communities, instructional navigators, STEM supports for Black students, and tutoring services. Intrusive advisement practices are characterized by advisors proactively contacting students and providing academic interventions during initial signs of academic struggle (Varney, 2012). Some schools implemented payment plans to help students pay for college, with one college increasing the number of Pell disbursements to four payments to keep students retained until the end of each semester. Overall, when considering strategies to close completion gaps, colleges viewed efforts to remove barriers, such as application fees, placement testing, and multiple levels of developmental classes, as equally important as implementing support structures.

Theme 6: Engage community-based organizations and philanthropic sources.

Within the domain of support, building capacity to serve students by leveraging partnerships with CBOs and philanthropic sources emerged as theme six. Nearly half of all community college students nationwide struggle to meet basic needs (Goldrick-Rab et al., 2017). A large portion of colleges interviewed successfully connected with public and private nonprofit organizations, with such partnerships assisting in providing specific services to targeted populations within their colleges. Many of these services related to

mentorship, mental health, and social supports. For some colleges, CBOs provided financial support to students to meet basic needs while attending school.

Colleges interviewed recognized that their capacity to respond to the social service needs of their students lacked in meeting student demand. Working with other community organizations, as well as acquiring grants from organizations whose missions and expertise were more aligned with the social service needs of students, proved a game-changer for efforts to raise Black and Brown retention and completion rates. The two examples below emphasize the point:

> Mental health counseling and social counseling—we encourage students to come forward and tell us about those types of needs. We have worked with the Jed Foundation to develop a whole strategic plan around mental health support for our students. One of the interesting pieces of that work is partnering with colleges and universities with Master of Social Work (MSW) programs. We have MSW students spend 6 months to a year doing internships in our student centers. It has been such a win-win for our students and theirs.

> It is important to seek out additional funding to create the support system that meets the needs of all students. Social supports are primarily supported by grants, big and small right both federal and state and some from private foundations.

The results discussed in the next section are intended to validate the study's findings through investigator triangulation. Investigator triangulation uses more than one investigator to confirm the findings.

Triangulation

Investigator triangulation improved the strength and validity of this study. Dr. George R. Boggs, a community college expert, reflected on the study's topic and shared his experience and expertise as it relates to closing equity gaps between Black and White community college students. Dr. Boggs is considered one of the foremost experts on America's community colleges (Inside Higher Ed, 2016). He served as President of Palomar College in California from 1985 to 2000, and President and CEO of the American Association of Community Colleges from 2000 to 2011, during which he represented the presidents of more than 1,200 community colleges and 14 million students (Inside Higher Ed., 2016).

Dr. Boggs serves as an active consultant, teacher, and speaker. He has served on committees and national boards including the National Academy of Sciences Board on Science Education, the American Council on Education, the National Center for Postsecondary Research, and the Accrediting Board for Engineering and Technology (Inside Higher Ed., 2016). He has received numerous awards and is President and CEO Emeritus of the American Association for Community Colleges and President Emeritus of Palomar College (Inside Higher Ed., 2016). He has authored more than 100 articles and books on various aspects of higher education.

A primary outcome of the quantitative analysis portion of this research was the statistical significance of Black instructional staff on closing equity gaps in completion rates among the nation's community colleges. As the percent of Black instructional staff increased, the gaps in completion rates between Black and White students became

smaller. Dr. Boggs confirmed this was a new finding in the literature, but he was not surprised by it for the following reasons:

> There has been a lot of research that says students need to feel welcome on campus, and I believe students feel a lot more welcome and more comfortable when people look like them on the faculty. I think also that faculty influence each other. If you have a greater percentage of Black faculty, it has been my experience that they work to help educate other faculty about Black culture. They help other faculty better connect and teach students of color. I believe your findings to be accurate and that a higher percentage of Black faculty could provide an environment that allows more Black students to be successful.

With regards to the effects of a data-driven culture on closing equity gaps in completion at community colleges, Dr. Boggs recognized that the use of assessment data and the development of a culture of evidence had been part of the conversation since the late 1990s when community colleges, through the work of the League of Innovation, looked towards defining the role of the institution in improving student success.

> It used to be that colleges would enroll students and give them an opportunity, and if they make it, great. If they don't, too bad. But now colleges see it as we have a responsibility to not only admit them, but to help them be successful. Achieving the Dream was established to help colleges provide a culture of evidence, and the work of the Community College Center for Student Engagement came along also and began developing data related to student

engagement. We know the more engaged students are the more successful they are.

Dr. Boggs agreed with the strategy of intentionality of hiring diverse faculty, and he also emphasized that community colleges have a responsibility for creation of talent by encouraging Black students to earn their degrees and join the faculty ranks. His insights on how to accomplish this aligned with how interviewees explained they were diversifying teaching ranks. Dr. Boggs makes three important points to help college leaders achieve more diversity when hiring.

1. *Diversity before and after interviews*. Don't interview until you have diversity. There should be an expectation that search committees seek diversity in the applicant pool, interview pool, and the finalist pool.
2. *Review criteria for teaching positions.* Search committees should examine mandatory and desirable criteria for teaching positions and make certain we are not screening applicants out unnecessarily. For example, a person does not need a Ph.D. in mathematics to teach freshman college algebra, and other criteria such as five years of teaching experience is not necessarily going to lead to better candidates.
3. *Change the rhetoric around hiring*. By changing the conversation from the ill-defined concept of "best qualified candidate" to "hiring the best person to meet the needs of our students and college" much can be accomplished in the hiring process of faculty.

Dr. Boggs agrees that efforts to diversify faculty should be intentional and be a part of the college plan. He encourages leaders to have the strength to measure baselines,

set goals of faculty diversity, and measure progress towards the goals. Overall, Dr. Boggs confirmed the themes that emerged from the study.

Summary of Analysis

This study aimed to identify institutional practices that contribute to equity gaps between racial groups and thereby inform policies and practices that close them. Closing postsecondary completion gaps between Black and White students would lessen the human capital disparities among Black individuals, allowing for meaningful participation in the nation's current and future workforce.

This study examined community colleges that have demonstrated success in graduating Black students, using quantitative and qualitative data to identify and examine institutional policy characteristics promoting increased success rates among minority student groups. An initial quantitative analysis of NCES IPEDS data was used to investigate the first three research questions and to identify colleges eligible for participation in the qualitative research strand. The subsequent qualitative analysis examined the final three research objectives via interviews of colleges with demonstrated success in closing equity gaps.

In the quantitative analysis, the impact of nine explainer variables on the Black-White completion rate gap was investigated using ordinary linear regression. Only one of the explainer variables was found as a significant predictor of the DV, the percent of Black instructional staff. This finding revealed that the gap in completion between Black and White students tended to be smaller as the percentage of Black instructional staff increases. This single variable accounted for 15% of the variability in the completion rate gap between Black and White students.

The interview instrument questions in the qualitative analysis were divided into four domains: intent, culture, strategy, and support. Eleven interviews were conducted with community colleges having less than 5% differences in completion rates between Black and White students, uncovering insights the institutional qualities associated with gap closing. Six themes were discovered during the interview process, with two themes aligned with the domain of intent, two themes aligned with the domain of culture, one theme aligned with strategy, and one theme with external support for DEI. One interview with a community college expert was useful for triangulation. Figure 27 shows the relationship between the domains and themes identified during the qualitative analysis.

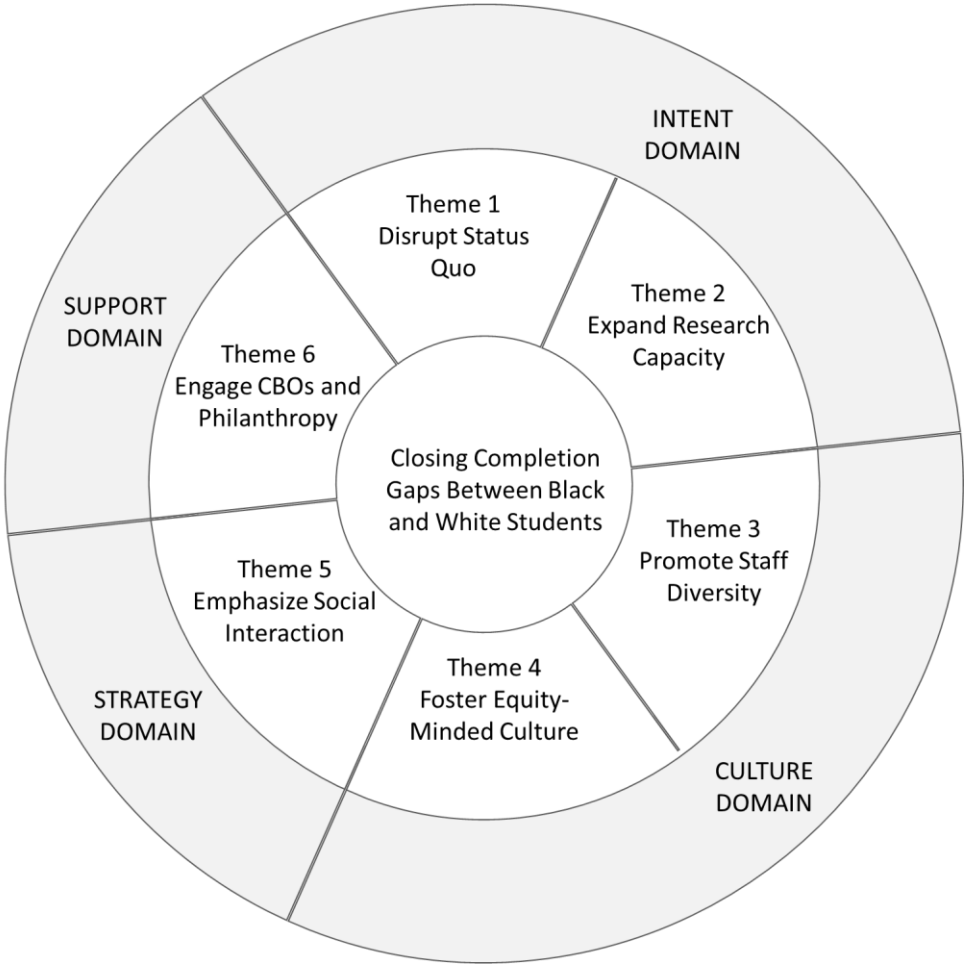


Figure 27. Thematic Coding of Results by Domain

These results make clear that the colleges interviewed in this study did not close completion rates by chance. Key trends included heavily investing in institutional research and working to change long-standing policies and practices negatively impacting particular student groups. Successful colleges also took steps to improve campus culture to increase the likelihood of success among Black and other minority students. These cultural initiatives were aimed at improving students' sense of belonging and validation on campus and involved expanding recruitment practices to develop more diverse job candidates and the professional training and development of current staff to be more culturally minded. These colleges also shared strategies and tactics explicitly enacted to close equity gaps in completion. Among these was affording close attention to the need for students to build stronger identities as college learners, with this augmented identity enabled by strengthening social bonds between peer groups, faculty, and mentors. Within the support domain, colleges interviewed had strong support from external groups to help tackle the tough problems of issues surrounding students' basic needs and mental health care.

In sum, this chapter presented the results of the both the quantitative and qualitative strands of this study's analysis examining gaps in completion rates between Black and White community college students, resulting in six themes that emerged within the four domains of interest examined. The final chapter will provide an interpretation of these findings, as well as draw conclusions and advance recommendations concerning the ongoing effort to close equity gaps between Black and White.

CHAPTER V FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

Black community college students complete college at a lower rate than other minority groups, and at a much lower rate than White students. This impacts their economic mobility and worsens the already limited supply of skilled workers needed for a strong U.S. economy. Given the importance of this issue for Black Americans, and for the U.S. as a whole, this study aimed to investigate predictors and behaviors of community colleges that have been meaningful in closing these gaps. The resulting findings can inform policy, procedures, and institutional behaviors geared toward increasing successful student outcomes for Black students and other student groups.

The population for this study included all American 2-year public colleges. Those selected for this study's sample met four criteria: 1) classified as a 2-year public institution by NCES; 2) offered associate-type degrees and certifications; 3) tracked and reported three-year completion rates by race; and 4) reported cohort sizes for Black and White completion rates that were large enough to enable statistical comparisons between the two groups. Applying these criteria, the sample of colleges eligible for analysis was $n = 304$.

This study's mixed-method sequential design was conducted in two phases, in which a quantitative data collection and analysis was followed by the collection and analysis of qualitative data. The quantitative phase involved analyzing pre-existing cohort-based data from NCES IPEDS for 304 community colleges to determine the effects of nine explainer variables on the dependent variable, the completion rate gap between Black and White students. The qualitative phase built on the findings from the earlier quantitative analysis; 39 colleges were selected as the interview sample,

comprised of colleges that demonstrated success in closing completion gaps between Black and White students. In all, 11 interviews were conducted. These interviews sought to discover and deeply explore institutional behaviors leading to successful gap closing. This study's quantitative and qualitative phases were thus mutually-supporting, with each phase contributing to the study's findings both independently and together.

Findings

This study's findings are based on its explanatory sequential design, allowing a detailed investigative analysis of its research objectives. The resulting conclusions were derived from a purposeful combination of statistical analysis and interview inquiry; they thus present a holistic explanatory account of efforts to close the Black-White equity gap in college completion. The following findings contribute to the literature on student success equity at the community college level by bringing forth new information and by confirming prior findings with the most up-to-date IPEDS NCES data available.

Finding 1

The percent of Black instructional staff is a predictor of closing gaps between Black and White student completion rates at community colleges. The percent of Black instructional staff was found to have a significant relationship in predicting the gap between Black and White completion rates.

Finding 1 Conclusion

As the percentage of Black instructional staff increased across colleges, the gap between Black and White completion rates decreased. This finding aligns with the literature when paired with the work of Gershenson and his colleagues (2018), who found

that Black teachers tended to have higher expectations and accountability for their Black students, with higher college participation and graduation rates for these same students.

Finding 1 Recommendations

This finding holds relevance to human resource policy discussions as it relates to increasing success for Black students. It is recommended that colleges, like those belonging to the ATD network, monitor and compare the proportion of faculty members and students by race and ethnicity and use these data to facilitate policy discussions and practice for recruitment and hiring processes.

Finding 2

The use of data is a key behavior that underpins the effective understanding of equity issues, while also engaging the campus community in changing individual and organizational behaviors to address them. Colleges successful at closing completion gaps were not just good at collecting data; they were skilled at using the data to create solutions that involved individual and organizational change.

Finding 2 Conclusion

Successful colleges in this study analyzed data to guide difficult conversations about race, promote institutional buy-in for changes to pedagogy, and instigate changes to longstanding policies and procedures. The use of data as a valuable tool in the assessment of equity-mindedness is well-documented in the work of Bensimon and Malcolm (2012) and as a strategy used by schools participating in the ATD (2020) network to increase equitable outcomes among community college students. Data was also used to inform progress towards creating more diversity among teaching staff. Data collection, use, and assessment formed the cornerstone of new initiatives and all DEI-related changes.

Finding 2 Recommendations

Colleges seeking more equitable student success outcomes are encouraged to review their capacity to collect, organize, and use data. Considerations should be given to investing in institutional research (IR) by increasing the number of IR staff members or expanding their research capacity through participation in the ATD network, which is underutilized, with roughly 300 (42%) community colleges participating.

Finding 3

Social supports are as important as academic and service supports for creating equitable outcomes between Black and White community college students. Student services such as academic advising, counseling, financial aid, career placement, and transfer counseling are essential services for any institution of higher learning.

Finding 3 Conclusion

The effectiveness of academic support services such as tutoring is well-supported in the literature (Dawson et al., 2014). More recently, the work of Sara Goldrick-Rab and her colleagues (2017) has provided a similar understanding of the importance of making basic needs supports a fundamental part of student success. This research confirms this insight while expanding the definition of social supports to include peer networks and mentorship. This is important because Black students, particularly males, have well-established issues identifying as college learners (Center for Community College Student Engagement, 2015).

Social supports were necessary to counterbalance external environmental factors not conducive to student success—Black students, particularly males, benefitted greatly from a heightened sense of community on campus.

Finding 3 Recommendation

This study strongly confirms that developing students' sense of belonging is important to retention and completion. Finding ways to create social spaces and networking opportunities opens up a new frontier of work. Colleges most successful in closing gaps between Black and White students demonstrated a range of holistic academic, social, and basic needs supports for students, including a broad spectrum of activities, clubs, and organizations meant to engage students and create a sense of belonging. Mentorship programs and college organizations and clubs have become more essential to the fabric of student success than once realized. When developing programs and initiatives to promote equitable outcomes, colleges should ensure they are also providing adequate social supports, not in place of, but alongside academic and student services support.

Limitations

Despite the above findings, this study retains some notable weaknesses that may have impacted its methods and interpretation of results. This study uses National Center for Education Statistics (NCES) data pertaining to all higher learning institutions' policies and operations, regardless of sector. Although these data provide a national perspective, the data are limited. While higher education leaders and policymakers use the NCES data for important decisions, the researcher assumes that gaps may exist in data relevant to the goals of this research which may, therefore, impact the study's validity. The qualitative investigation was intended to mitigate these gaps and provide information that could inform results.

Another limitation of this study is personal bias and its impact on study outcomes (Smith & Osborn, 2008). In an effort to avoid personal bias on the researcher's part, the researcher performed self-reflections (Creswell, 2009). The researcher holds a position at a college access organization whose primary mission is to increase educational outcomes among minority and Black students. An awareness of the potential of researcher bias, a commitment to practice self-reflection, and a predetermined interview script were all elements that worked to prevent the researcher from asking leading questions or inserting information based on the researcher's own experience.

Overall, this study's most notable limitation is the unit of analysis in the study itself—the institution. The NCES data used in this study is cohort-based, institutional-level data and not student-level data. Because of this, the resulting findings can only be interpreted in the realm of institutional behaviors, policies, and practices; while qualities of students, both as groups and individuals, may bear on student success outcomes, this study's data and research design cannot speak to such influences. Moreover, this study's findings and the recommendations drawn from them may provide applications relevant to institutional policy, but not directly relevant to student behavior.

Recommendations for Future Research

The topology of this study involved an explanatory sequential design. In the quantitative portion of this study, 15% of the variability in the completion rate gap between Black and White students was explained by a single variable, the percent of Black instructional staff. Additional research is needed to determine the "why" and the "how" this variable impacts the completion rates of Black students. Investigations could involve validating Gershenson's Role Model Effect (2018) at the college level or

determining if Black community college faculty members have higher standards of success for Black students than other faculty members. To find the remaining 85% of the variability in gaps between Black and White student completion rates, future research may also benefit from the use of frameworks that can provide alternate perspectives on the possible causal mechanisms involved, such as Ladson-Billings and Tate's (1995) critical race theory of education and Rendón's (1994) validation theory.

This study's confirmation that the percentage of Black instructional staff is positively associated with completion rates of Black community college students highlights the importance of further investigation to determine ways that colleges and the community college sector can increase the number of Black instructional staff. In addition to implementing equitable hiring practices, the community college sector could benefit from exploring long-term strategies centered around increasing the number of Black educators who choose to work within the community college sector.

As mentioned in the above limitations discussion, the institution was the unit of analysis for this study. One logical next step would be determining student behaviors and attributes that might bear on student success outcomes and thus on equity gaps. This warrants using the student as the unit of analysis in future studies, with an aim towards discovering differences or commonalities in the patterns in behaviors of Black and White students that may contribute to completion.

While Gershenson's work is an important backdrop to this finding, his study focused on 4-year college completion. Additional research is needed to understand the influence of Black instructors on the success behaviors of Black students in 2-year institutions. Helping to fill this research gap, this study finds the percentage of Black

instructional staff is a predictor of success for Black students by using the institution as the unit of analysis. Researchers are encouraged to study the effects of Black instructors on the short- and long-term success of Black students using the student as the unit of analysis.

The quantitative analysis in this study used annual NCES IPEDS data that includes student graduation rates of first-time, full-time students. Future studies should include the success of part-time students and increase time-to-degree to 6 years. Additionally, scholars are encouraged to look beyond graduation to study long-term outcomes, such as employment and wage earning, that differ between Black and White community college students.

Over the course of the qualitative inquiry, six themes within four domains of interest emerged. If implemented, policies related to several of these themes would require a significant financial investment for the institution. To effectively gauge impact, a return on investment analysis of specific themes and their associated practices would be helpful for the institutions interviewed. For example, expanding IR capacity might require the cost of an additional IR staff member or program costs associated with participation in the ATD network. A precise understanding of the costs of expanded IR capacity relative to increased graduation rates among Black students, as well as the associated cost benefit of improved student outcomes, is essential in determining the overall value of efforts to expand IR capacity.

Additionally, many social supports for students are high-touch and high-dollar, requiring dedicated staff members and a significant financial investment on the part of the college. Closely tracking student outcomes and measuring implementation costs

relative to these outcomes is necessary to determine the overall benefit of any social support program. Such a ROI analysis would also benefit other institutions seeking to implement practices known to increase completion among Black community college students. Finally, this study also determined that institutional culture was critical to moving the needle when it comes to Black student success, and future research can devote efforts to analyzing the necessary steps enabling the types of cultural transformation that ready a college for the work of equity.

Discussion

Currently, more jobs exist in the United States than qualified people to fill them creating a deficit in human capital relative to human capital demand. This problem is projected to worsen over the next decade, as an increasing number of jobs that pay family-sustaining earnings will require training or education beyond high school. Such "good jobs" pay a minimum of $35,000 annually for workers between the ages of 25 and 44, and at least $45,000 for workers between the ages of 45 and 64 (Carnevale et al., 2019b). Projections show that, by 2025, two out of three jobs in the United States will require an education beyond high school (Carnevale et al., 2019b). In other words, most of these future good jobs will require the kinds of degrees, certifications, or credentials offered in the nation's community colleges.

Currently, more than 30% of students begin their postsecondary education at a community college, but fewer than half complete a degree within 6 years (NCES, 2019). Black students are 16% less likely to complete a degree or credential than their White counterparts (Lumina, 2021a.). In short, White students are more likely to enroll and experience success in college. Given this ongoing disparity, addressing poor outcomes

for Black community college students must be seen as an integral part of the solution to the nation's human capital deficit.

The reasons Black students graduate at lower rates than White students include the rising cost of higher education, social issues that prevent minority students from enrolling or persisting in college, and historically under-resourced minority-serving K-12 schools that fail to adequately prepare students for postsecondary education. These disadvantages result in persistent problems for individuals who lack opportunity, industries that lack talent, and a nation that lacks an adequate supply of human capital. This research represents an effort to address the human capital crisis resulting from equity gaps between Black and White students in all areas of higher education, particularly in community colleges.

This study used a mixed-methods approach to investigate factors associated with the difference in outcomes between Black and White community college students. Through quantitative analysis, the study revealed a single variable of statistical significance: The proportion of Black community college instructional staff was found to positively impact completion outcomes for Black community college students.

While the proportion of Black staff was only one out of this study's initial nine variables, this factor demonstrated an outsize effect on Black completion and is thus of core interest for those studying equity gaps. The crucial role of Black faculty has been underlined by Bowman and Denson's (2022) concurrent study, which employed similar methods to examine the effects of same-race representation of faculty and students on 6-year completion rates at 4-year colleges and universities. Examining 2,800 4-year colleges and universities rather than community colleges, they also utilized IPEDS data

and applied a similar methodology adapted specifically to bachelor's degree completion. In line with this study, the researchers found that college graduation gaps between Black and White students tend to shrink when more Black faculty members are on campus (Bowman & Denson, 2022).

In addition to identifying the effect of Black faculty on success, the quantitative phase of analysis also allowed this study to identify and interview schools demonstrating notable success in closing equity gaps. During interviews with these community college leaders, one noted that, regardless of how much school administrators try to help students navigate higher education, "the river is still crooked." She explained further that implementing supports is only a small part of the solution and that, instead, educators and education leaders should be more focused on "straightening the river" by removing barriers hindering Black and other minority students from successful outcomes. Some of these barriers are financial, some social, and others relate to either school policy or practice. Over the course of this research new solutions to these barriers emerged; the interviews unlocked new perspectives on the many innovative solutions the nation's top community colleges are employing to improve Black student outcomes. Some colleges created robust social networks and supports for students, others removed placement testing, and many cleared the way for students to attend college regardless of their ability to pay. The results of these trailblazing efforts can be seen in the graduation rates of Black students, but they will undoubtedly also be evident in the longer-term outcomes for students, their families, their communities, and the nation. America needs the kind of talent that Black students have to offer in building the nation's human capital.

Appendix A – IRB Approval

Office *of*
Research Integrity

THE UNIVERSITY OF SOUTHERN MISSISSIPPI

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NOTICE OF INSTITUTIONAL REVIEW BOARD ACTION

The project below has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services regulations (45 CFR Part 46), and University Policy to ensure:

- The risks to subjects are minimized and reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered involving risks to subjects must be reported immediately. Problems should be reported to ORI via the Incident submission on InfoEd IRB.
- The period of approval is twelve months. An application for renewal must be submitted for projects exceeding twelve months.

PROTOCOL NUMBER:	22-233
PROJECT TITLE:	An Asset Model: Identifying Factors that Close Community College Completion Gaps Between Black and White Students
SCHOOL/PROGRAM	Human Capital Development
RESEARCHERS:	PI: courtney lange Investigators: lange, courtney~Annulis, Heather~
IRB COMMITTEE ACTION:	Approved
CATEGORY:	Expedited Category
PERIOD OF APPROVAL:	04-May-2022 to 03-May-2023

Donald Sacco, Ph.D.
Institutional Review Board Chairperson

Appendix B – Equity-Mindedness Theory Approval for Use

EB

Estela Bensimon <bensimon@rossier.usc.edu> | Courtney Lange | 7/7/2021

Re: Equity Minded Indicators

[EXTERNAL SENDER] DO NOT click links, or open attachments, if sender is unknown, or the message seems suspicious in any way. NEVER provide your user ID or password.

Yes you can use them with the appropriate attribution. Check the center for urban education website for new materials as well as From Equity Talk to Equity Walk available on Amazon

Sent from my iPhone

> On Jul 7, 2021, at 8:49 AM, Courtney Lange <clange@woodwardhines.org> wrote:
>
> Good morning, Dr. Bensimon.
> I am a PhD student in Mississippi. My research focuses on closing equity gaps in community college completion—specifically examining schools as the unit of analysis. I came across your Equity Minded Indicators and wanted to ask two questions:
>
> Is there an updated version from the one I see from 2012?
> May I have your permission to use these 12 indicators in my research?
>
> Thanks so much-
> Courtney Lange

Appendix C – Bensimon's Indicators for Practicing Equity-Mindedness

1. Do you routinely examine and report racial/ethnic participation in:
    a. Honors programs
    b. Institutional scholarships
    c. Participation in undergraduate research
    d. Study abroad
    e. Transfer from community college to 4-year college
    f. Transfer from community college to highly selective -yea4r colleges
    g. Internships and other forms of high-value experiences
    h. Student surveys
    i. Fields of study
    j. Graduation with honors
2. Do you have a set of racial equity indicators that you monitor annually? _ No _ Yes (describe)
3. Does your campus have goals that are explicitly stated by race and ethnicity to improve retention, graduation, STEM participation, and [Name other indicators that are important at your own institution]
4. Does your campus recruit community college transfer students and report on transfer access by race and ethnicity?
5. Does your campus publish an annual report on the state of racial equity? If it does not, who would need to make it happen?

6. Does your campus report on admissions applications, acceptance, and yield by race and ethnicity? Does your campus report on incomplete admissions applications by race and ethnicity?
7. Are you familiar with your campus recruitment and admissions practices? Is there a racial/ethnic map of the high schools where recruitment takes place?
8. Are faculty, administrators, and staff evaluated on meeting racial equity goals?
9. Does your campus report on faculty, administrator, and staff hiring outcomes by race/ethnicity for faculty, e.g., number of applicants, number interviewed, and number hired? Has your campus (or you) conducted a study of faculty search procedures to identify implicit bias in standard search procedures?
10. Would your campus leadership be open to routinely examine practices, policies, new initiatives, reports, etc., to determine if they meet criteria of equity-mindedness?
11. Would your department chairs be open to engaging faculty in the examination of course-level data disaggregated by race and ethnicity? To examine their syllabi? To conduct classroom observations to understand interracial relations between instructors and students?
12. How much support would you get from your president to do items 1-11? The academic senate? Trustees?

Appendix D – Researcher Developed Equity-Mindedness Questionnaire

1. In the analysis of data from IPEDS survey data for all community colleges, several variables were found to contribute to the closing of completion rates between Black and White students. For each variable, please give your thoughts on why this would contribute, and provide any evidence specifically related to your institution that would more strongly validate these findings.
    a. Variable 1
    b. Variable 2
    c. …
2. Your college has been successful in closing the gaps between the completion rates of Black and White students. What stands out to you as a top reason for this accomplishment? Are there additional reasons you could cite for the accomplishment?
3. I would like to know more about your assessment practices for equity at your institution. Do you routinely examine and report racial/ethnic participation in the following:
    a. Honors courses (y/n)
    b. Institutional merit-based scholarships (y/n)
    c. Extracurricular activities and other forms of high-value experiences (y/n)
    d. Fields of study (y/n)
    e. Graduation with honors (y/n)

f. Are there other drivers that your institution examines and reports related to racial/ethnic participation? If so, what are they and why do you believe these things are important to track?

If yes, what is the driver to report racial participation?

4. Do you regularly monitor other outcomes by race? If so, can you describe them? If no, can you provide me with more information on why you do not monitor outcomes by race?
5. Does your campus leadership discuss college access by race and ethnicity? If so, what college access barriers have you seen Black students in your community come up against? If no, can you describe why this is not discussed?
6. Describe the culture at your institution. Is it an expected behavior that faculty, staff, and administration work through an equity lens? If so, describe how your college accomplishes this.
7. Is the success of your institution based on specific organizational initiatives, strategic efforts, professional development activities and any other institutional behaviors that specifically impact retention and completion rates for students of all races? If so, how?
8. Does your campus report on faculty, administrator, and staff hiring outcomes by race/ethnicity for faculty, e.g., number of applicants, number interviewed, and number hired? If no, can you tell me why this is not reported? Has your campus (or you) conducted a study of faculty search procedures to identify implicit bias in standard search procedures? If so, do you feel like this has contributed to your

school's successful outcomes among Black students? If so, why? How does your school's faculty and staff racial makeup compare to that of your community?

9. Describe the support you receive from your institution's Trustees to do your work in equity. Is this supported at all levels of the institution? What signals you to believe this?
10. Describe the support you receive from the community or philanthropy to provide equitable academic outcomes for all students.
11. What other institutional factors, characteristics, or factors, if any, do you believe contribute to the college's success in closing racial equity gaps? Can you list them and explain why they are important?

Exit Statement:

Thank you for agreeing to participate in this research aimed at identifying factors that narrow completion gaps between Black and White community college students. I look forward to sharing the results of this study with you. What questions can I answer for you before we end this call? If you think of any additional questions following the call, feel free to reach out to me. Thank you, again.

Appendix E – Interview Protocol

This study focuses on identifying factors that close equity gaps between Black and White community college students. The interview will follow the following format:

- The researcher will explain the purpose of the research study.
- The participant will be informed that they can stop or end the interview at any time.
- The researcher obtains verbal consent to record the interview.
- The researcher will ask participants a list of predeveloped questions, created by the researcher, and based on Bensimon's equity-mindedness questionnaire. These questions are designed to identify factors contributing to narrow completion gaps between Black and White students at their community college.

1. Begin the interview:
    a. Explain the context of this research.
    b. Ask the participant for permission to begin recording.
    c. Begin recording.
    d. Ask interview questions, as listed.
    e. End the interview after 30 minutes, or when finished asking the predetermined set of questions.
2. Following the interview:
    a. Thank participant for their participation.
    b. Explain that the conversation will be transcribed and then shared with them to provide suggested revisions or approval (member checking). Request a three-day response to validate the accuracy of the transcribed

interview. If not returned within that time, the researcher will assume that there were no questions or discrepancies and move forward, assuming accuracy.

3. Before the meeting ends:
    a. Inform participants that a copy of the completed research project will be shared, once approved by the university.
    b. Offer to answer any questions.
    c. Thank the participant.

Appendix F – Interview Script

Before we get started, I want to thank you for your willingness to participate in this research. As I mentioned in my previous communications to you, I am on the final stretch of my journey as a Ph.D. candidate at the University of Southern Mississippi. Today's interview is a part of the data collection portion of my study.

My study centers around equity gaps—or gaps in completion—between Black and White community college students. I am talking to you today because the data show that your college is doing this work well. I do not anticipate that today's conversation will take more than 90 minutes. If you have questions, or would like to take a break or altogether, please let me know at any time. Today's interview will be recorded. Do I have your permission to begin recording?

As a part of this study, I am interviewing college officers who provide leadership and expertise within the institution's governance structure and transmit the culture at your institution. These include officers include highly-qualified, credentialed, executive-level officers who provide professional judgement and leadership centered around accomplishing the institution's mission. For these reasons, please provide me with your name, title, highest level of education, years of experience, and role at the college. Please also include the specific area you direct. Examples include student services, enrollment management, and other key areas of administration.

<Ask interview questions here>

Thank you again for your willingness to participate. That concludes today's interview.

Appendix G – Initial Email Invitation to Participate

Subject: Your Institution has been Identified as being among the Nation's Most

Successful in Closing Equity Gaps Between Black and White Students

Dear (Participant Name):

(Insert College Name) has been identified as one of the nation's most successful community colleges in closing equity gaps between Black and White students. This topic is the subject of my doctoral research.
In addition to the initial quantitative analysis of NCES IPEDS data, my hope is to further explore the institutions that were identified as having the smallest completion gaps between Black and White students by conducting interviews with college leaders. As a part of this study, you or an academic officer at your college will be asked to participate in a 30-minute Zoom interview to discuss the following:

- Equity-mindedness and your institution's strategic efforts to close equity gaps between Black and White students

Your participation will provide information needed to identify institutional policies and best practices needed to scale this work at other community colleges.
Please confirm your willingness to participate in this study, via email at c.lange@usm.edu or by calling (601) 896.3606.

Regards:
Courtney Lange
Doctoral Candidate
The University of Southern Mississippi
clange@usm.edu
(601) 896-3606

Participant's Assurance:

This project has been approved by the University of Southern Mississippi's Institutional Review Board (protocol # 22-233), which ensures that research projects involving human subjects follow federal regulations.

Any questions or concerns about rights as a research participant should be directed to the Chair of the IRB at 601-266-5997. Participation in this project is completely voluntary, and participants may withdraw from this study at any time without penalty, prejudice, or loss of benefits.

Any questions about the research should be directed to the Principal Investigator using the contact information provided in the Project Information Section above.

Appendix H – Interview Reminder Email

Subject: Upcoming Interview Reminder

Dear (Participant Name):

Thank you for your willingness to participate in a research study to explore ways to close community college equity gaps between Black and White students. Your institution was selected because of its success in this area. The interview details are below:

- Your interview is scheduled on (date) at (time) and will be held virtually via Zoom.
- Your Zoom login information is (insert Zoom link information).
- The interview will take approximately 30 minutes.

Please confirm your attendance by responding to the Zoom meeting request. If this date and time is not convenient for you, please suggest another date and time.

Attached, please find a consent and release of confidentiality form. Prior to the interview, please print the form, sign it, scan it, and return it to me as an email attachment.

Thank you for your willingness to participate in this study. I look forward to learning from your institution's success.

Regards:
Courtney Lange
Doctoral Candidate
The University of Southern Mississippi
clange@usm.edu
(601) 896-3606

Participant's Assurance:

This project has been approved by the University of Southern Mississippi's Institutional Review Board (protocol # 22-233), which ensures that research projects involving human subjects follow federal regulations.
Any questions or concerns about rights as a research participant should be directed to the Chair of the IRB at 601-266-5997. Participation in this project is completely voluntary, and participants may withdraw from this study at any time without penalty, prejudice, or loss of benefits.

Any questions about the research should be directed to the Principal Investigator using the contact information provided in the Project Information Section above.

Appendix I – Thank You Email to Participants

Subject: Thank You for Your Participation

Dear (Participant Name):

Thank you for your participation in my research study to explore ways to close community college equity gaps between Black and White students. As you know, this work is critical to, not only improving outcomes for individuals, but also to strengthening your community's and the nation's economy.

This work was approached from an anti-deficit model—meaning that, instead of looking at what does not work, the research sought to identify institutions who are doing the work well in order to learn from them. Attached, please find a transcription of our conversations. Within three days, please let me know what, if any, suggested revisions you have. If I do not hear from you, I will assume the information is accurate, and proceed.

I appreciate your willingness to share your best practices and to inform this work. Once completed, I look forward to sharing the outcomes of this work.

Regards:
Courtney Lange
Doctoral Candidate
The University of Southern Mississippi
clange@usm.edu
(601) 896-3606

Participant's Assurance:

This project has been approved by the University of Southern Mississippi's Institutional Review Board (protocol # 22-233), which ensures that research projects involving human subjects follow federal regulations.

Any questions or concerns about rights as a research participant should be directed to the Chair of the IRB at 601-266-5997. Participation in this project is completely voluntary, and participants may withdraw from this study at any time without penalty, prejudice, or loss of benefits.

Any questions about the research should be directed to the Principal Investigator using the contact information provided in the Project Information Section above.

Appendix J – Consent and Release of Confidentiality

[Date]

Project Title:

An Asset Model: Identifying Factors That Close Community College Completion Gaps Between Black and White Students
Principal Investigator: Courtney L. Lange

Phone: 601.896.3606
Email: clange@usm.edu
College: Business and Economic Development and the School of Interdisciplinary Studies and Professional Development
Department: Human Capital Development

Purpose:

The purpose of this study is to investigate factors associated with differences in completion rates between Black and White community college students.

Description of Study:

This mixed-methods study seeks to identify factors that close community college completion gaps between Black and White community college students. Factors may include the following variables of interest: average amount of financial aid awarded, geography of institution, class size, Black student enrollment, percent of Black instructors on campus, targeted student services, and other special programs or initiatives designed to improve outcomes among Black students. Each of these data points and others are available publicly through the National Center for Education Statistics.

During the quantitative phase of the study, the researcher will use publicly-available, institution-level data available through the National Center for Education Statistics Integrated Postsecondary Education System to identify institutions with the smallest gaps in completion among Black and White students. Institutions demonstrating a near zero gap in completion between Black and White students will be eligible to participate in the qualitative phase of the research.

During the qualitative phase of the study, the researcher will conduct interviews with community college administrative officers representing institutions that were identified during the quantitative portion of the research as having success in graduating Black and

White students at similar rates. Interviews will be based on Bensimon's equity-minded questionnaire.
These results of the study may be used to inform institutional planning towards helping community colleges improve outcomes among Black students. Results will also be useful for building policies that promote equitable outcomes.

Benefits:

This study intends to inform community college practice and policy in order to narrow completion gaps between Black and White community college students. By closing these gaps, the United States will be better able to supply a skilled, trained workforce to meet current and future needs.

Interview participants will receive a copy of this study, once completed. There are no additional tangible benefits associated with participation in this study.

Risks: There are no known or expected risks associated with participation in this study.

Confidentiality:

By signing this form, I understand that I am providing my consent to participate in this project and release confidentiality for my institution. This confidentiality release includes permission for the researcher to identify specific data, strategies, policies, and procedures associated with my institution. Although my name will not be reported in the study results, the name of my institution will be reported. Research findings, including institutional characteristics, policies, practices, programs, and initiatives, will not be kept confidential. These findings will be reported and associated with my institution, and I have the authority to consent to this release.

Initial Here _____

Alternative Procedures:

No alternative procedures are available. The participant may withdraw from participation in this study at any time and without providing a reason.

Participant's Assurance:

This project has been approved by the University of Southern Mississippi's Institutional Review Board (protocol # 22-233), which ensures that research projects involving human subjects follow federal regulations.

Appendix K – Lumina Permission to Cite

KC

Kevin Corcoran <kcorcoran@luminafoundation.org> | Courtney Lange

Re: May I cite this report

Click here to download pictures. To help protect your privacy, Outlook prevented automatic download of some pictures in this message.

[EXTERNAL SENDER] DO NOT click links, or open attachments, if sender is unknown, or the message seems suspicious in a

Permission granted!

Sent from my iPhone

Kevin Corcoran
Strategy Director for Communications
30 S. Meridian St., Suite 700
Indianapolis, IN 46204
Office: (317) 951-5493
Cell: (317) 220-2582
Twitter: @LuminaFound

On Jun 21, 2021, at 11:11 AM, Courtney Lange <clange@woodwardhines.org> wrote:

Hey Kevin,
I am working on my dissertation and came across this report as a source—it says to ask for permission in order to cite and I saw your name!

https://www.luminafoundation.org/files/resources/hearn-obf-full.pdf

Courtney Lange
Director of Communications & Impact
Phone: 601.321.5527
woodwardhines.org

<image001.jpg>

Helping more Mississippians obtain postsecondary credentials, college certificates, and degrees that lead to meaningful employment.

Appendix L – Results Email to Participants

Subject: Research Results

Dear (Participant Name):

Thank you for your participation in my research study to explore ways to close community college equity gaps between Black and White students.

Attached, please find the findings of my study.

I appreciate your willingness to share your best practices and to inform this work and welcome any feedback you have on the outcomes of this study.

Regards:
Courtney Lange
Doctoral Candidate
The University of Southern Mississippi
clange@usm.edu
(601) 896-3606

Participant's Assurance:

This project has been approved by the University of Southern Mississippi's Institutional Review Board (protocol # 22-233), which ensures that research projects involving human subjects follow federal regulations.
Any questions or concerns about rights as a research participant should be directed to the Chair of the IRB at 601-266-5997. Participation in this project is completely voluntary, and participants may withdraw from this study at any time without penalty, prejudice, or loss of benefits.

Any questions about the research should be directed to the Principal Investigator using the contact information provided in the Project Information Section above.

Appendix M – Calculations to Compare Two Proportions with Unequal Sample Sizes

Table A1. *Values to Determine Minimum Cohort Sizes for Black and White Students*

Institution Name	State	Cohort Black	Cohort White	k	n_B	n_W	Revised Cohort
Aiken Technical College	SC	50	151	3.020	60	183	N
Alamance Community College	NC	74	269	3.635	57	207	Y
Albany Technical College	GA	217	66	0.304	243	74	N
Allan Hancock College	CA	34	152	4.471	54	241	N
Allegany College of Maryland	MD	113	247	2.186	68	149	Y
Allen County Community College	KS	34	232	6.824	49	335	N
Alvin Community College	TX	65	238	3.662	57	208	Y
Amarillo College	TX	31	302	9.742	46	452	N
American River College	CA	100	542	5.420	51	279	Y
Angelina College	TX	95	321	3.379	58	197	Y
Anne Arundel Community College	MD	186	731	3.930	56	219	Y
Anoka Technical College	MN	9	160	17.778	44	774	N
Anoka-Ramsey Community College	MN	84	556	6.619	49	327	Y
Arizona Western College	AZ	35	54	1.543	80	123	N
Arkansas Northeastern College	AR	51	127	2.490	65	161	N
Arkansas State University Mid-South	AR	73	30	0.411	190	78	N
Arkansas State University Three Rivers	AR	18	83	4.611	53	246	N
Arkansas State University-Beebe	AR	53	573	10.811	46	495	Y
Arkansas State University-Newport	AR	53	240	4.528	54	243	N
Asheville-Buncombe Technical CC	NC	20	365	18.250	43	792	N
Asnuntuck Community College	CT	35	121	3.457	58	200	N
Athens Technical College	GA	45	189	4.200	55	230	N
Atlanta Technical College	GA	313	7	0.022	2800	63	N
Atlantic Cape Community College	NJ	127	361	2.843	62	176	Y
Augusta Technical College	GA	259	195	0.753	122	92	Y
Baltimore City Community College	MD	256	9	0.035	1796	63	N
Barstow Community College	CA	37	65	1.757	75	132	N
Barton County Community College	KS	55	230	4.182	55	229	Y
Bates Technical College	WA	11	72	6.545	49	324	N
Baton Rouge Community College	LA	558	473	0.848	113	96	Y
Beaufort County Community College	NC	7	42	6.000	50	302	N
Bergen Community College	NJ	174	831	4.776	53	253	Y
Berkeley City College	CA	42	57	1.357	86	116	N
Berkshire Community College	MA	16	158	9.875	46	457	N
Bevill State Community College	AL	72	547	7.597	48	366	Y
Big Bend Community College	WA	1	159	159.0	40	6428	N
Bishop State Community College	AL	479	133	0.278	262	73	Y
Black Hawk College	IL	35	379	10.829	46	495	N

Black River Technical College	AR	7	288	41.143	42	1709	N
Blackhawk Technical College	WI	10	152	15.200	44	670	N
Bladen Community College	NC	15	37	2.467	65	160	N
Blinn College	TX	686	2233	3.255	59	192	Y
Blue Ridge Community Technical College	WV	9	191	21.222	43	911	N
Blue Ridge Community College	NC	17	333	19.588	43	846	N
Blue Ridge Community College	VA	17	333	19.588	43	846	N
Bluegrass Community Technical College	KY	146	938	6.425	50	319	Y
Bossier Parish Community College	LA	384	429	1.117	95	106	Y
BridgeValley Community Technical	WV	16	288	18.000	43	782	N
Bristol Community College	MA	80	702	8.775	47	413	Y
Brookdale Community College	NJ	157	1201	7.650	48	368	Y
Brunswick Community College	NC	23	122	5.304	52	274	N
Bucks County Community College	PA	43	803	18.674	43	809	N
Bunker Hill Community College	MA	323	191	0.591	144	85	Y
Butler Community College	KS	140	796	5.686	51	289	Y
Butler County Community College	PA	20	509	25.450	42	1081	N
Butte College	CA	27	621	23.000	43	983	N
Cabrillo College	CA	22	297	13.500	45	602	N
Caldwell Community College Technical	NC	18	222	12.333	45	556	N
Camden County College	NJ	324	591	1.824	74	135	Y
Canada College	CA	4	48	12.000	45	542	N
Cape Cod Community College	MA	18	260	14.444	44	640	N
Cape Fear Community College	NC	92	641	6.967	49	341	Y
Capital Community College	CT	96	19	0.198	352	70	N
Carl Albert State College	OK	4	140	35.000	42	1463	N
Carl Sandburg College	IL	24	174	7.250	49	352	N
Carroll Community College	MD	10	326	32.600	42	1367	N
Carteret Community College	NC	4	72	18.000	43	782	N
Carver Career Center	WV	12	158	13.167	45	589	N
Casper College	WY	7	427	61.000	41	2504	N
Catawba Valley Community College	NC	48	321	6.688	49	329	N
Cayuga County Community College	NY	53	391	7.377	48	357	Y
Cecil College	MD	22	148	6.727	49	331	N
Central Alabama Community College	AL	79	255	3.228	59	191	Y
Central Arizona College	AZ	46	183	3.978	56	221	N
Central Carolina Community College	NC	100	254	2.540	64	163	Y
Central Carolina Technical College	SC	231	274	1.186	92	109	Y
Central Community College	NE	20	363	18.150	43	788	N
Central Georgia Technical College	GA	269	228	0.848	113	96	Y
Central Lakes College-Brainerd	MN	35	373	10.657	46	488	N
Central Louisiana Technical	LA	161	248	1.540	80	123	Y
Central Maine Community College	ME	53	351	6.623	49	327	Y
Central New Mexico Community College	NM	53	511	9.642	46	448	Y

Central Ohio Technical College	OH	15	143	9.533	47	443	N
Central Pennsylvania Institute	PA	5	193	38.600	42	1607	N
Central Piedmont Community College	NC	289	575	1.990	71	141	Y
Central Texas College	TX	185	176	0.951	105	100	Y
Central Virginia Community College	VA	69	235	3.406	58	198	Y
Century College	MN	79	372	4.709	53	250	Y
Chabot College	CA	76	108	1.421	83	119	N
Chaffey College	CA	101	202	2.000	71	142	Y
Chandler-Gilbert Community College	AZ	35	356	10.171	46	469	N
Chattahoochee Technical College	GA	192	334	1.740	76	131	Y
Chattahoochee Valley Community College	AL	120	130	1.083	97	105	Y
Chattanooga State Community College	TN	212	1150	5.425	51	279	Y
Chemeketa Community College	OR	15	574	38.267	42	1594	N
Chesapeake College	MD	23	176	7.652	48	368	N
Chippewa Valley Technical College	WI	13	520	40.000	42	1663	N
Cisco College	TX	62	160	2.581	64	165	N
Citrus College	CA	41	183	4.463	54	240	N
City College of San Francisco	CA	81	190	2.346	66	156	Y
City Colleges of Chicago-Harold	IL	352	50	0.142	475	67	N
City Colleges of Chicago-Harry S Truman	IL	108	36	0.333	225	75	N
City Colleges of Chicago-Kennedy-King	IL	269	11	0.041	1549	63	N
City Colleges of Chicago-Malcolm X	IL	247	18	0.073	887	65	N
City Colleges of Chicago-Olive-Harvey	IL	152	3	0.020	3167	63	N
City Colleges of Chicago-Richard J Daley	IL	72	63	0.875	111	97	N
City Colleges of Chicago-Wilbur Wright	IL	67	174	2.597	64	166	Y
Clackamas Community College	OR	22	522	23.727	43	1012	N
Clarendon College	TX	22	131	5.955	50	300	N
Cleveland Community College	NC	45	165	3.667	57	209	N
Cleveland State Community College	TN	53	565	10.660	46	489	Y
Cloud County Community College	KS	17	193	11.353	45	516	N
Clovis Community College	CA	12	87	7.250	49	352	N
Clovis Community College	NM	12	87	7.250	49	352	N
Coahoma Community College	MS	404	18	0.045	1425	64	N
Coastal Alabama Community College	AL	258	574	2.225	68	151	Y
Coastal Bend College	TX	15	83	5.533	51	283	N
Coastal Carolina Community College	NC	63	323	5.127	52	267	Y
Coastal Pines Technical College	GA	33	90	2.727	63	171	N
Coastline Community College	CA	14	30	2.143	69	148	N
Cochise County Community College	AZ	17	123	7.235	49	351	N
Coffeyville Community College	KS	152	210	1.382	85	117	Y
Colby Community College	KS	9	106	11.778	45	533	N
College of Alameda	CA	30	25	0.833	114	95	N
College of DuPage	IL	163	1052	6.454	50	320	Y
College of Lake County	IL	46	492	10.696	46	490	Y

College of Marin	CA	14	83	5.929	50	299	N
College of San Mateo	CA	25	142	5.680	51	289	N
College of Southern Maryland	MD	270	530	1.963	71	140	Y
College of the Albemarle	NC	31	147	4.742	53	252	N
College of the Canyons	CA	76	417	5.487	51	281	Y
College of the Desert	CA	34	177	5.206	52	270	N
College of the Mainland	TX	54	155	2.870	62	177	N
College of the Redwoods	CA	23	181	7.870	48	377	N
College of the Sequoias	CA	38	316	8.316	47	395	N
College of the Siskiyous	CA	20	110	5.500	51	282	N
College of Western Idaho	ID	25	537	21.480	43	922	N
Colorado Northwestern Community	CO	5	84	16.800	44	734	N
Columbia College	CA	5	117	23.400	43	999	N
Columbia State Community College	TN	106	1107	10.443	46	480	Y
Columbia-Greene Community College	NY	22	164	7.455	48	360	N
Columbus State Community College	OH	363	1044	2.876	61	177	Y
Columbus Technical College	GA	107	97	0.907	108	98	N
Community College of Allegheny County	PA	365	1275	3.493	58	202	Y
Community College of Aurora	CO	54	124	2.296	67	154	N
Community College of Baltimore County	MD	713	564	0.791	118	93	Y
Community College of Beaver County	PA	42	272	6.476	50	321	N
Community College of Philadelphia	PA	643	314	0.488	166	81	Y
Community College of Rhode Island	RI	115	990	8.609	47	406	Y
Community College of Vermont	VT	3	174	58.000	41	2384	N
Compton College	CA	78	2	0.026	2447	63	N
Connors State College	OK	50	284	5.680	51	289	N
Contra Costa College	CA	47	14	0.298	247	74	N
Copiah-Lincoln Community College	MS	328	391	1.192	92	109	Y
Copper Mountain Community College	CA	17	50	2.941	61	179	N
Cossatot Community College of the UA	AR	23	118	5.130	52	267	N
Cosumnes River College	CA	85	201	2.365	66	156	Y
County College of Morris	NJ	52	649	12.481	45	561	Y
Cowley County Community College	KS	44	370	8.409	47	398	N
Crafton Hills College	CA	13	168	12.923	45	579	N
Craven Community College	NC	24	71	2.958	61	180	N
Crowder College	MO	12	659	54.917	41	2261	N
Cuesta College	CA	6	394	65.667	41	2691	N
CUNY Borough of Manhattan Community	NY	1456	387	0.266	272	72	Y
CUNY Bronx Community College	NY	463	29	0.063	1025	64	N
CUNY Hostos Community College	NY	285	7	0.025	2553	63	N
CUNY Kingsborough Community College	NY	509	531	1.043	99	103	Y
CUNY LaGuardia Community College	NY	475	201	0.423	186	79	Y
CUNY Queensborough Community Col	NY	659	371	0.563	150	84	Y
CUNY Stella and Charles Guttman	NY	109	31	0.284	257	73	N

Cuyahoga Community College District	OH	379	790	2.084	70	145	Y
Cuyamaca College	CA	23	206	8.957	47	420	N
Dabney S Lancaster Community College	VA	12	113	9.417	47	439	N
Dakota College at Bottineau	ND	30	47	1.567	79	124	N
Dakota County Technical College	MN	22	273	12.409	45	559	N
Danville Area Community College	IL	28	233	8.321	47	395	N
Danville Community College	VA	73	205	2.808	62	174	Y
Davidson County Community College	NC	37	213	5.757	51	292	N
Dawson Community College	MT	10	76	7.600	48	366	N
De Anza College	CA	60	316	5.267	52	273	Y
Del Mar College	TX	8	108	13.500	45	602	N
Delaware County Community College	PA	217	520	2.396	66	158	Y
Delgado Community College	LA	619	326	0.527	157	83	Y
Delta College	MI	65	794	12.215	45	551	Y
Denmark Technical College	SC	102	3	0.029	2138	63	N
Des Moines Area Community College	IA	134	1399	10.440	46	480	Y
Diablo Valley College	CA	55	361	6.564	49	325	Y
Dodge City Community College	KS	74	164	2.216	68	150	Y
Durham Technical Community College	NC	72	66	0.917	107	98	N
Dutchess Community College	NY	239	804	3.364	58	196	Y
Dyersburg State Community College	TN	105	370	3.524	58	203	Y
East Arkansas Community College	AR	49	78	1.592	79	125	N
East Central College	MO	5	459	91.800	41	3737	N
East Central Community College	MS	298	392	1.315	87	114	Y
East Los Angeles College	CA	36	71	1.972	71	141	N
East Mississippi Community College	MS	356	350	0.983	103	101	Y
Eastern Arizona College	AZ	41	177	4.317	54	235	N
Eastern Gateway Community College	OH	64	228	3.563	57	204	Y
Eastern Iowa Community College District	IA	37	321	8.676	47	409	N
Eastern Maine Community College	ME	5	348	69.600	41	2849	N
Eastern New Mexico University-Roswell	NM	5	111	22.200	43	951	N
Eastern Oklahoma State College	OK	4	95	23.750	43	1013	N
Eastern Shore Community College	VA	12	26	2.167	69	148	N
Edgecombe Community College	NC	66	56	0.848	113	96	N
Edison State Community College	OH	22	201	9.136	47	428	N
El Camino Community College District	CA	221	325	1.471	82	121	Y
El Paso Community College	TX	39	156	4.000	55	222	N
Elgin Community College	IL	27	452	16.741	44	732	N
Elizabethtown Community and Technical	KY	36	619	17.194	44	750	N
Ellsworth Community College	IA	74	159	2.149	69	148	Y
Enterprise State Community College	AL	45	227	5.044	52	264	N
Erie Community College	NY	412	1206	2.927	61	179	Y
Essex County College	NJ	545	88	0.161	422	68	Y
Estrella Mountain Community College	AZ	38	212	5.579	51	285	N

Everett Community College	WA	17	417	24.529	43	1044	N
Evergreen Valley College	CA	8	31	3.875	56	217	N
Fayetteville Technical Community College	NC	424	349	0.823	115	95	Y
Finger Lakes Community College	NY	83	779	9.386	47	438	Y
Fletcher Technical Community College	LA	63	195	3.095	60	186	Y
Flint Hills Technical College	KS	2	54	27.000	42	1143	N
Florence-Darlington Technical College	SC	191	173	0.906	108	98	Y
Folsom Lake College	CA	10	378	37.800	42	1575	N
Fond du Lac Tribal and Community Col	MN	13	48	3.692	57	210	N
Forsyth Technical Community College	NC	144	407	2.826	62	175	Y
Fort Scott Community College	KS	36	218	6.056	50	304	N
Frank Phillips College	TX	17	89	5.235	52	271	N
Frederick Community College	MD	114	455	3.991	56	222	Y
Fresno City College	CA	119	279	2.345	66	156	Y
Frontier Community College	IL	2	101	50.500	41	2084	N
Fullerton College	CA	79	301	3.810	56	214	Y
Fulton-Montgomery Community College	NY	58	281	4.845	53	256	Y
Gadsden State Community College	AL	184	601	3.266	59	193	Y
Garden City Community College	KS	80	181	2.263	67	152	Y
Garrett College	MD	68	138	2.029	70	143	N
Gaston College	NC	34	172	5.059	52	264	N
Gateway Community and Technical	KY	15	317	21.133	43	908	N
GateWay Community College	AZ	184	213	1.158	93	108	Y
Gateway Community College	CT	184	213	1.158	93	108	Y
Gateway Technical College	WI	50	265	5.300	52	274	N
Gavilan College	CA	20	88	4.400	54	238	N
Genesee Community College	NY	81	588	7.259	49	352	Y
George C Wallace Community College-	AL	230	434	1.887	73	137	Y
George C Wallace State -Hanceville	AL	74	805	10.878	46	497	Y
George C Wallace State -Selma	AL	206	53	0.257	280	72	N
Georgia Northwestern Technical College	GA	22	222	10.091	46	466	N
Georgia Piedmont Technical College	GA	155	26	0.168	408	68	N
Georgia State University-Perimeter College	GA	989	433	0.438	181	79	Y
Germanna Community College	VA	80	399	4.988	52	261	Y
Glen Oaks Community College	MI	21	108	5.143	52	268	N
Glendale Community College	CA	117	560	4.786	53	253	Y
Glendale Community College	AZ	117	560	4.786	53	253	Y
Golden West College	CA	18	277	15.389	44	678	N
Grand Rapids Community College	MI	117	974	8.325	47	395	Y
Great Bay Community College	NH	1	181	181.00	40	7309	N
Greenfield Community College	MA	4	100	25.000	43	1063	N
Grossmont College	CA	89	473	5.315	52	275	Y
Guilford Technical Community College	NC	277	335	1.209	91	110	Y
Gwinnett Technical College	GA	91	92	1.011	101	102	N

H Councill Trenholm State Community	AL	199	81	0.407	192	78	Y
Hacienda La Puente Adult Education	CA	32	551	17.219	44	751	N
Hagerstown Community College	MD	50	285	5.700	51	290	N
Halifax Community College	NC	74	45	0.608	142	86	N
Harford Community College	MD	133	592	4.451	54	240	Y
Harrisburg Area Community College	PA	144	1023	7.104	49	346	Y
Hartnell College	CA	9	48	5.333	52	275	N
Hawkeye Community College	IA	52	724	13.923	44	619	Y
Hazard Community and Technical College	KY	6	327	54.500	41	2244	N
Heartland Community College	IL	50	461	9.220	47	431	Y
Henderson Community College	KY	21	148	7.048	49	344	N
Hennepin Technical College	MN	53	198	3.736	57	211	N
Herkimer County Community College	NY	92	314	3.413	58	198	Y
Hibbing Community College	MN	7	139	19.857	43	857	N
Highland Community College	KS	17	162	9.529	47	443	N
Highland Community College	IL	17	162	9.529	47	443	N
Hill College	TX	38	295	7.763	48	373	N
Hillsborough Community College	FL	669	1132	1.692	77	129	Y
Hinds Community College	MS	1403	692	0.493	165	81	Y
Hocking College	OH	129	514	3.984	56	221	Y
Holmes Community College	MS	490	530	1.082	97	105	Y
Holyoke Community College	MA	45	496	11.022	46	503	N
Honolulu Community College	HI	5	18	3.600	57	206	N
Hopkinsville Community College	KY	17	115	6.765	49	333	N
Horry-Georgetown Technical College	SC	195	653	3.349	58	196	Y
Housatonic Community College	CT	187	158	0.845	113	96	Y
Houston Community College	TX	789	422	0.535	155	83	Y
Howard College	TX	22	164	7.455	48	360	N
Howard Community College	MD	284	322	1.134	94	107	Y
Hudson County Community College	NJ	206	175	0.850	113	96	Y
Hudson Valley Community College	NY	284	1382	4.866	53	257	Y
Hutchinson Community College	KS	98	547	5.582	51	285	Y
Illinois Central College	IL	93	794	8.538	47	404	Y
Illinois Valley Community College	IL	6	298	49.667	41	2050	N
Imperial Valley College	CA	12	25	2.083	70	145	N
Independence Community College	KS	63	111	1.762	75	132	N
Indian Hills Community College	IA	64	431	6.734	49	331	Y
Inver Hills Community College	MN	37	255	6.892	49	338	N
Iowa Central Community College	IA	204	741	3.632	57	207	Y
Iowa Lakes Community College	IA	24	256	10.667	46	489	N
Iowa Western Community College	IA	182	541	2.973	61	181	Y
Irvine Valley College	CA	18	473	26.278	42	1114	N
Isothermal Community College	NC	25	170	6.800	49	334	N
Itasca Community College	MN	23	165	7.174	49	349	N

Itawamba Community College	MS	409	873	2.134	69	147	Y
Ivy Tech Community College	IN	471	3558	7.554	48	364	Y
J F Ingram State Technical College	AL	116	83	0.716	126	90	N
J Sargeant Reynolds Community College	VA	112	259	2.313	67	154	Y
J. F. Drake State Community and Technical	AL	51	29	0.569	149	84	N
Jackson State Community College	TN	221	684	3.095	60	186	Y
James A Rhodes State College	OH	15	271	18.067	43	785	N
James Sprunt Community College	NC	32	51	1.594	79	126	N
Jamestown Community College	NY	51	597	11.706	45	530	Y
Jefferson College	MO	17	702	41.294	42	1715	N
Jefferson Community and Technical Col	KY	185	596	3.222	59	191	Y
Jefferson Community College	NY	85	508	5.976	50	301	Y
Jefferson State Community College	AL	230	612	2.661	63	168	Y
John A Logan College	IL	99	315	3.182	59	189	Y
John C Calhoun State Community College	AL	177	715	4.040	55	223	Y
John Tyler Community College	VA	186	552	2.968	61	181	Y
John Wood Community College	IL	14	301	21.500	43	923	N
Johnson County Community College	KS	140	934	6.671	49	329	Y
Johnston Community College	NC	73	242	3.315	59	194	Y
Joliet Junior College	IL	119	558	4.689	53	249	Y
Jones County Junior College	MS	446	582	1.305	87	114	Y
Kalamazoo Valley Community College	MI	69	549	7.957	48	380	Y
Kankakee Community College	IL	26	139	5.346	52	276	N
Kansas City Kansas Community College	KS	102	252	2.471	65	161	Y
Kapiolani Community College	HI	6	37	6.167	50	309	N
Kaskaskia College	IL	12	123	10.250	46	472	N
Kilgore College	TX	177	388	2.192	68	149	Y
Kirkwood Community College	IA	196	1513	7.719	48	371	Y
Kishwaukee College	IL	64	279	4.359	54	236	Y
Klamath Community College	OR	3	137	45.667	41	1890	N
Labette Community College	KS	28	163	5.821	51	295	N
Lake Area Technical College	SD	4	577	144.25	40	5838	N
Lake Land College	IL	30	817	27.233	42	1152	N
Lake Michigan College	MI	36	200	5.556	51	284	N
Lake Region State College	ND	5	147	29.400	42	1239	N
Lake Superior College	MN	5	366	73.200	41	2993	N
Lakeland Community College	OH	88	286	3.250	59	192	Y
Lamar Community College	CO	17	96	5.647	51	288	N
Lamar Institute of Technology	TX	167	232	1.389	84	117	Y
Lamar State College-Orange	TX	36	219	6.083	50	305	N
Lamar State College-Port Arthur	TX	68	88	1.294	88	114	N
Lancaster County Career and Technology	PA	7	42	6.000	50	302	N
Lane Community College	OR	28	588	21.000	43	903	N
Laney College	CA	78	20	0.256	281	72	N

Lanier Technical College	GA	22	180	8.182	48	389	N
Lansing Community College	MI	149	865	5.805	51	294	Y
Las Positas College	CA	19	271	14.263	44	633	N
Lassen Community College	CA	11	97	8.818	47	415	N
Lawson State Community College	AL	566	109	0.193	361	69	Y
Lee College	TX	46	148	3.217	59	191	N
Leeward Community College	HI	14	44	3.143	60	188	N
Lehigh Carbon Community College	PA	61	533	8.738	47	412	Y
Lenoir Community College	NC	62	140	2.258	67	152	N
Lewis and Clark Community College	NY	39	399	10.231	46	471	N
Lincoln Land Community College	IL	65	576	8.862	47	417	Y
Lincoln Trail College	IL	15	136	9.067	47	425	N
Linn-Benton Community College	OR	11	652	59.273	41	2435	N
Long Beach City College	CA	257	274	1.066	98	104	Y
Lord Fairfax Community College	VA	19	437	23.000	43	983	N
Los Angeles City College	CA	18	62	3.444	58	200	N
Los Angeles Harbor College	CA	72	56	0.778	119	93	N
Los Angeles Mission College	CA	7	39	5.571	51	285	N
Los Angeles Pierce College	CA	78	283	3.628	57	207	Y
Los Angeles Trade Technical College	CA	66	33	0.500	163	82	N
Los Angeles Valley College	CA	33	247	7.485	48	361	N
Los Medanos College	CA	74	177	2.392	66	157	Y
Louisiana Delta Community College	LA	270	287	1.063	98	104	Y
Louisiana State University-Eunice	LA	153	462	3.020	60	183	Y
Lurleen B Wallace Community College	AL	112	278	2.482	65	161	Y
Luzerne County Community College	PA	51	474	9.294	47	434	Y
Macomb Community College	MI	200	999	4.995	52	262	Y
Madisonville Community College	KY	15	287	19.133	43	828	N
Manchester Community College	NH	119	271	2.277	67	153	Y
Manchester Community College	CT	119	271	2.277	67	153	Y
Manhattan Area Technical College	KS	3	40	13.333	45	596	N
Marion Military Institute	AL	36	197	5.472	51	281	N
Martin Community College	NC	10	19	1.900	73	138	N
Massachusetts Bay Community College	MA	84	253	3.012	61	182	Y
Massasoit Community College	MA	257	461	1.794	74	134	Y
Maysville Community and Technical Col	KY	5	406	81.200	41	3313	N
McHenry County College	IL	21	432	20.571	43	885	N
McLennan Community College	TX	131	451	3.443	58	200	Y
Merced College	CA	25	210	8.400	47	398	N
Mercer County Community College	NJ	192	382	1.990	71	141	Y
Meridian Community College	MS	297	286	0.963	104	100	Y
Merritt College	CA	57	18	0.316	235	74	N
Mesa Community College	AZ	111	491	4.423	54	239	Y
Mesabi Range College	MN	39	125	3.205	59	190	N

Metropolitan Community College Area	NE	60	309	5.150	52	268	Y
Metropolitan Community College-Kansas	MO	311	1496	4.810	53	254	Y
Mid Michigan College	MI	27	290	10.741	46	492	N
Middlesex Community College	MA	33	205	6.212	50	310	N
Middlesex County College	NJ	240	563	2.346	66	156	Y
Midlands Technical College	SC	351	697	1.986	71	141	Y
Mid-Plains Community College	NE	11	248	22.545	43	964	N
Miles Community College	MT	4	109	27.250	42	1153	N
Milwaukee Area Technical College	WI	391	414	1.059	98	104	Y
Mineral Area College	MO	16	540	33.750	42	1413	N
Minneapolis Community and Technical	MN	167	174	1.042	99	103	Y
Minnesota State Community and Technical	MN	56	571	10.196	46	470	Y
Minnesota West Community and Technical	MN	34	175	5.147	52	268	N
Mississippi Delta Community College	MS	374	143	0.382	201	77	Y
Mississippi Gulf Coast Community College	MS	480	1021	2.127	69	147	Y
Missouri State University-West Plains	MO	35	286	8.171	48	389	N
Mitchell Community College	NC	29	180	6.207	50	310	N
Mitchell Technical College	SD	3	342	114.00	41	4626	N
Moberly Area Community College	MO	62	680	10.968	46	501	Y
Mohawk Valley Community College	NY	156	850	5.449	51	280	Y
Monroe Community College	NY	544	1357	2.494	65	162	Y
Monroe County Community College	MI	10	270	27.000	42	1143	N
Monterey Peninsula College	CA	35	138	3.943	56	220	N
Montgomery College	MD	543	401	0.738	124	91	Y
Montgomery Community College	NC	24	77	3.208	59	190	N
Montgomery County Community College	PA	135	644	4.770	53	253	Y
Moorpark College	CA	30	790	26.333	42	1116	N
Moraine Valley Community College	IL	124	821	6.621	49	327	Y
Moreno Valley College	CA	74	49	0.662	133	88	N
Morton College	IL	14	21	1.500	81	122	N
Motlow State Community College	TN	184	1259	6.842	49	336	Y
Mott Community College	MI	108	425	3.935	56	219	Y
Mount Wachusett Community College	MA	21	288	13.714	45	611	N
Mountain Empire Community College	VA	5	325	65.000	41	2664	N
Mountwest Community and Technical	WV	25	284	11.360	45	517	N
Mt Hood Community College	OR	33	396	12.000	45	542	N
Mt San Antonio College	CA	79	244	3.089	60	185	Y
Mt San Jacinto Community College District	CA	86	402	4.674	53	249	Y
Muskegon Community College	MI	47	398	8.468	47	401	N
Napa Valley College	CA	29	79	2.724	63	171	N
Nash Community College	NC	105	155	1.476	82	121	Y
Nashua Community College	NH	9	173	19.222	43	831	N
Nashville State Community College	TN	449	597	1.330	86	115	Y
Nassau Community College	NY	665	1192	1.792	74	133	Y

National Park College	AR	82	328	4.000	55	222	Y
Naugatuck Valley Community College	CT	101	350	3.465	58	200	Y
Navarro College	TX	378	483	1.278	88	113	Y
Neosho County Community College	KS	31	207	6.677	49	329	N
New Mexico Junior College	NM	24	119	4.958	52	260	N
New Mexico Military Institute	NM	43	69	1.605	79	126	N
New Mexico State University-Alamogordo	NM	5	43	8.600	47	406	N
New Mexico State University-Dona Ana	NM	18	115	6.389	50	318	N
New River Community College	VA	22	441	20.045	43	864	N
NHTI-Concord's Community College	NH	22	545	24.773	43	1054	N
Niagara County Community College	NY	133	758	5.699	51	290	Y
Norco College	CA	38	130	3.421	58	199	N
Normandale Community College	MN	175	442	2.526	64	163	Y
North Central Kansas Technical College	KS	1	179	179.00	40	7229	N
North Central Missouri College	MO	6	284	47.333	41	1957	N
North Central Texas College	TX	53	442	8.340	47	396	Y
North Country Community College	NY	9	164	18.222	43	791	N
North Dakota State College of Science	ND	67	513	7.657	48	368	Y
North Georgia Technical College	GA	35	294	8.400	47	398	N
North Hennepin Community College	MN	95	153	1.611	78	126	Y
North Idaho College	ID	12	492	41.000	42	1703	N
North Iowa Area Community College	IA	32	461	14.406	44	639	N
North Shore Community College	MA	58	382	6.586	49	325	Y
Northampton County Area Community	PA	260	682	2.623	64	167	Y
Northcentral Technical College	WI	4	231	57.750	41	2374	N
Northeast Alabama Community College	AL	11	415	37.727	42	1572	N
Northeast Community College	NE	9	683	75.889	41	3100	N
Northeast Lakeview College	TX	15	93	6.200	50	310	N
Northeast Mississippi Community College	MS	229	778	3.397	58	198	Y
Northeast State Community College	TN	28	1256	44.857	41	1858	N
Northeast Texas Community College	TX	39	211	5.410	51	278	N
Northeast Wisconsin Technical College	WI	20	328	16.400	44	718	N
Northeastern Junior College	CO	20	276	13.800	45	614	N
Northeastern Oklahoma A&M College	OK	95	287	3.021	60	183	Y
Northeastern Technical College	SC	52	76	1.462	82	120	N
Northern Essex Community College	MA	17	297	17.471	44	761	N
Northern Maine Community College	ME	2	131	65.500	41	2684	N
Northern Oklahoma College	OK	46	461	10.022	46	463	N
Northern Virginia Community College	VA	842	1685	2.001	71	142	Y
Northern Wyoming Community College	WY	9	446	49.556	41	2046	N
Northland Community and Technical	MN	38	234	6.158	50	308	N
Northshore Technical Community College	LA	180	207	1.150	94	108	Y
NorthWest Arkansas Community College	AR	20	596	29.800	42	1255	N
Northwest College	WY	5	283	56.600	41	2328	N

Northwest Kansas Technical College	KS	36	92	2.556	64	164	N
Northwest Louisiana Technical Community	LA	42	78	1.857	73	136	N
Northwest Mississippi Community College	MS	710	1035	1.458	82	120	Y
Northwest State Community College	OH	2	121	60.500	41	2484	N
Northwest Vista College	TX	61	258	4.230	55	231	Y
Northwest-Shoals Community College	AL	48	548	11.417	45	519	Y
Norwalk Community College	CT	122	160	1.311	87	114	Y
Nunez Community College	LA	71	79	1.113	96	106	N
Oakland Community College	MI	102	553	5.422	51	279	Y
Oakton Community College	IL	40	198	4.950	53	260	N
Ocean County College	NJ	99	1124	11.354	45	516	Y
Oconee Fall Line Technical College	GA	18	43	2.389	66	157	N
Ogeechee Technical College	GA	53	109	2.057	70	144	N
Ohlone College	CA	20	86	4.300	54	234	N
Oklahoma City Community College	OK	111	453	4.081	55	225	Y
Olney Central College	IL	13	192	14.769	44	653	N
Onondaga Community College	NY	364	1027	2.821	62	175	Y
Orange Coast College	CA	21	626	29.810	42	1255	N
Orange County Community College	NY	127	548	4.315	54	234	Y
Orangeburg Calhoun Technical College	SC	135	127	0.941	106	99	Y
Otero Junior College	CO	26	104	4.000	55	222	N
Owens Community College	OH	129	533	4.132	55	227	Y
Owensboro Community and Technical	KY	15	413	27.533	42	1164	N
Ozarka College	AR	3	182	60.667	41	2491	N
Ozarks Technical Community College	MO	47	1750	37.234	42	1553	Y
Palo Verde College	CA	4	17	4.250	55	232	N
Palomar College	CA	48	616	12.833	45	576	Y
Pamlico Community College	NC	12	21	1.750	75	132	N
Panola College	TX	93	214	2.301	67	154	Y
Paradise Valley Community College	AZ	23	224	9.739	46	452	N
Paris Junior College	TX	102	458	4.490	54	242	Y
Parkland College	IL	116	413	3.560	57	204	Y
Pasadena City College	CA	93	346	3.720	57	211	Y
Passaic County Community College	NJ	58	122	2.103	69	146	N
Patrick Henry Community College	VA	69	201	2.913	61	178	Y
Paul D Camp Community College	VA	30	51	1.700	76	130	N
Pearl River Community College	MS	276	481	1.743	75	131	Y
Pellissippi State Community College	TN	184	1857	10.092	46	466	Y
Pennsylvania Highlands Community	PA	15	180	12.000	45	542	N
Phillips Community College UA	AR	61	52	0.852	112	96	N
Phoenix College	AZ	66	83	1.258	89	112	N
Piedmont Community College	NC	25	64	2.560	64	164	N
Piedmont Technical College	SC	118	350	2.966	61	180	Y
Piedmont Virginia Community College	VA	51	263	5.157	52	268	N

Pierpont Community and Technical College	WV	14	263	18.786	43	814	N
Pima Community College	AZ	123	619	5.033	52	263	Y
Pitt Community College	NC	393	363	0.924	107	99	Y
Portland Community College	OR	87	1014	11.655	45	528	Y
Prairie State College	IL	186	39	0.210	334	70	N
Pratt Community College	KS	33	173	5.242	52	272	N
Prince George's Community College	MD	564	21	0.037	1698	63	N
Quincy College	MA	120	146	1.217	91	110	Y
Quinebaug Valley Community College	CT	2	142	71.000	41	2905	N
Quinsigamond Community College	MA	86	453	5.267	52	273	Y
Rainy River Community College	MN	11	29	2.636	63	167	N
Randolph Community College	NC	14	222	15.857	44	697	N
Ranger College	TX	46	179	3.891	56	218	N
Rappahannock Community College	VA	36	120	3.333	59	195	N
Raritan Valley Community College	NJ	109	605	5.550	51	284	Y
Reading Area Community College	PA	22	142	6.455	50	320	N
Redlands Community College	OK	12	146	12.167	45	549	N
Reedley College	CA	39	146	3.744	57	212	N
Reid State Technical College	AL	19	33	1.737	76	131	N
Rend Lake College	IL	26	467	17.962	43	781	N
Richard Bland College	VA	142	177	1.246	90	112	Y
Richland Community College	IL	29	207	7.138	49	348	N
Richmond Community College	NC	46	73	1.587	79	125	N
Ridgewater College	MN	37	400	10.811	46	495	N
River Parishes Community College	LA	94	223	2.372	66	157	Y
Riverland Community College	MN	19	188	9.895	46	458	N
Riverside City College	CA	129	360	2.791	62	173	Y
Roane State Community College	TN	36	1043	28.972	42	1222	N
Roanoke-Chowan Community College	NC	28	23	0.821	115	95	N
Robeson Community College	NC	32	26	0.813	116	94	N
Rochester Community and Technical	MN	101	442	4.376	54	237	Y
Rock Valley College	IL	46	505	10.978	46	501	Y
Rockingham Community College	NC	18	126	7.000	49	342	N
Rockland Community College	NY	224	437	1.951	72	140	Y
Rose State College	OK	182	562	3.088	60	185	Y
Rowan College at Burlington County	NJ	286	862	3.014	61	182	Y
Rowan College of South Jersey Gloucester	NJ	210	1088	5.181	52	269	Y
Rowan-Cabarrus Community College	NC	168	474	2.821	62	175	Y
Roxbury Community College	MA	66	8	0.121	549	67	N
Sacramento City College	CA	129	251	1.946	72	140	Y
Saddleback College	CA	21	782	37.238	42	1553	N
Saint Louis Community College	MO	751	1273	1.695	76	130	Y
Saint Paul College	MN	214	186	0.869	111	97	Y
Salem Community College	NJ	24	89	3.708	57	210	N

Salina Area Technical College	KS	3	54	18.000	43	782	N
Salt Lake Community College	UT	67	1182	17.642	44	768	Y
Sampson Community College	NC	16	36	2.250	67	152	N
San Antonio College	TX	32	182	5.688	51	289	N
San Bernardino Valley College	CA	88	95	1.080	97	105	N
San Diego City College	CA	80	96	1.200	91	110	N
San Diego Miramar College	CA	36	273	7.583	48	365	N
San Joaquin Delta College	CA	116	291	2.509	65	162	Y
San Jose City College	CA	34	45	1.324	87	115	N
Sandhills Community College	NC	85	280	3.294	59	194	Y
Santa Barbara City College	CA	37	608	16.432	44	720	N
Santa Fe Community College	NM	4	73	18.250	43	792	N
Santa Rosa Junior College	CA	22	452	20.545	43	884	N
Santiago Canyon College	CA	17	346	20.353	43	877	N
Sauk Valley Community College	IL	20	194	9.700	46	450	N
Savannah Technical College	GA	129	137	1.062	98	104	Y
Schenectady County Community College	NY	147	365	2.483	65	161	Y
Scottsdale Community College	AZ	40	244	6.100	50	306	N
Seminole State College	OK	30	142	4.733	53	251	N
Seward County Community College	KS	19	88	4.632	53	247	N
Shawnee Community College	IL	27	150	5.556	51	284	N
Shelton State Community College	AL	283	462	1.633	78	127	Y
Shoreline Community College	WA	32	142	4.438	54	239	N
Sierra College	CA	58	942	16.241	44	712	Y
Skyline College	CA	9	73	8.111	48	386	N
Snead State Community College	AL	44	377	8.568	47	405	N
South Arkansas Community College	AR	41	87	2.122	69	147	N
South Central College	MN	50	266	5.320	52	275	N
South Georgia Technical College	GA	165	154	0.933	106	99	Y
South Louisiana Community College	LA	392	595	1.518	81	122	Y
South Mountain Community College	AZ	67	34	0.507	162	82	N
South Piedmont Community College	NC	17	68	4.000	55	222	N
South Plains College	TX	110	433	3.936	56	219	Y
South Puget Sound Community College	WA	13	274	21.077	43	906	N
South Suburban College	IL	165	44	0.267	271	72	N
Southcentral Kentucky Community and	KY	10	160	16.000	44	702	N
Southeast Arkansas College	AR	92	72	0.783	119	93	N
Southeast Community College Area	NE	25	788	31.520	42	1324	N
Southeast Kentucky Community	KY	5	335	67.000	41	2744	N
Southeastern Community College	NC	18	99	5.500	51	282	N
Southeastern Community College	IA	18	99	5.500	51	282	N
Southeastern Illinois College	IL	18	217	12.056	45	544	N
Southeastern Technical College	GA	20	82	4.100	55	226	N
Southern Arkansas University Tech	AR	51	103	2.020	71	143	N

Southern Crescent Technical College	GA	134	145	1.082	97	105	Y
Southern Maine Community College	ME	61	673	11.033	46	503	Y
Southern Regional Technical College	GA	72	174	2.417	66	158	Y
Southern State Community College	OH	11	194	17.636	44	768	N
Southern Union State Community College	AL	245	689	2.812	62	174	Y
Southern University at Shreveport	LA	556	12	0.022	2900	63	N
Southern West Virginia Community and	WV	3	415	138.33	40	5601	N
Southside Virginia Community College	VA	78	136	1.744	75	132	Y
Southwest Collegiate Institute for the Deaf	TX	5	2	0.400	194	78	N
Southwest Mississippi Community College	MS	274	268	0.978	103	101	Y
Southwest Tennessee Community College	TN	1399	444	0.317	235	74	Y
Southwest Texas Junior College	TX	9	51	5.667	51	289	N
Southwest Wisconsin Technical College	WI	3	249	83.000	41	3385	N
Southwestern College	CA	64	106	1.656	77	128	N
Southwestern Community College	IA	21	221	10.524	46	483	N
Southwestern Illinois College	IL	137	552	4.029	55	223	Y
Southwestern Michigan College	MI	84	349	4.155	55	228	Y
SOWELA Technical Community College	LA	103	345	3.350	58	196	Y
Spartanburg Community College	SC	100	414	4.140	55	227	Y
Spoon River College	IL	31	122	3.935	56	219	N
Springfield Technical Community College	MA	115	245	2.130	69	147	Y
St Charles Community College	MO	62	972	15.677	44	689	Y
St Cloud Technical and Community Col	MN	83	413	4.976	52	261	Y
St Philip's College	TX	30	44	1.467	82	120	N
Stanly Community College	NC	38	161	4.237	55	231	N
Stark State College	OH	145	590	4.069	55	225	Y
State Fair Community College	MO	37	744	20.108	43	867	N
State Technical College of Missouri	MO	3	491	163.66	40	6615	N
Suffolk County Community College	NY	403	2094	5.196	52	270	Y
Sullivan County Community College	NY	82	109	1.329	86	115	N
SUNY Adirondack	NY	56	722	12.893	45	578	Y
SUNY Broome Community College	NY	256	921	3.598	57	206	Y
SUNY Corning Community College	NY	37	561	15.162	44	669	N
SUNY Westchester Community College	NY	479	501	1.046	99	104	Y
Sussex County Community College	NJ	9	280	31.111	42	1307	N
Tarrant County College District	TX	624	1432	2.295	67	154	Y
Technical College of the Lowcountry	SC	48	110	2.292	67	153	N
Temple College	TX	73	203	2.781	62	173	Y
Texarkana College	TX	108	260	2.407	66	158	Y
Texas State Technical College	TX	88	474	5.386	51	277	Y
Thaddeus Stevens College of Technology	PA	63	372	5.905	50	298	Y
Thomas Nelson Community College	VA	193	368	1.907	72	138	Y
Three Rivers College	MO	73	465	6.370	50	317	Y
Three Rivers Community College	CT	38	296	7.789	48	374	N

Tidewater Community College	VA	738	1095	1.484	82	121	Y
Tompkins Cortland Community College	NY	113	315	2.788	62	173	Y
Tri-County Technical College	SC	118	1522	12.898	45	578	Y
Trident Technical College	SC	381	823	2.160	69	148	Y
Trinidad State Junior College	CO	10	94	9.400	47	438	N
Trinity Valley Community College	TX	123	407	3.309	59	194	Y
Triton College	IL	125	239	1.912	72	138	Y
Tulsa Community College	OK	111	825	7.432	48	359	Y
Tunxis Community College	CT	51	307	6.020	50	303	Y
Ulster County Community College	NY	38	299	7.868	48	377	N
Union County College	NJ	301	195	0.648	135	88	Y
University of Arkansas -Batesville	AR	3	208	69.333	41	2838	N
University of Arkansas -Morrilton	AR	31	309	9.968	46	461	N
University of Arkansas Hope-Texarkana	AR	73	117	1.603	79	126	N
University of Arkansas-Pulaski Technical	AR	152	250	1.645	78	128	Y
University of Pittsburgh-Titusville	PA	27	57	2.111	69	146	N
University of South Carolina-Lancaster	SC	53	211	3.981	56	221	N
University of South Carolina-Salkehatchie	SC	86	95	1.105	96	106	N
University of South Carolina-Sumter	SC	73	149	2.041	70	143	Y
University of South Carolina-Union	SC	58	98	1.690	77	129	N
Vance-Granville Community College	NC	50	96	1.920	72	139	N
Ventura College	CA	22	220	10.000	46	462	N
Vermilion Community College	MN	38	146	3.842	56	216	N
Vernon College	TX	31	157	5.065	52	265	N
Victor Valley College	CA	110	231	2.100	69	146	Y
Victoria College	TX	21	137	6.524	50	323	N
Virginia Highlands Community College	VA	5	274	54.800	41	2256	N
Virginia Western Community College	VA	81	599	7.395	48	358	Y
Volunteer State Community College	TN	231	1671	7.234	49	351	Y
Wabash Valley College	IL	19	163	8.579	47	405	N
Wake Technical Community College	NC	284	1007	3.546	57	204	Y
Walters State Community College	TN	48	1414	29.458	42	1241	Y
Warren County Community College	NJ	14	154	11.000	46	502	N
Washington State Community College	OH	4	201	50.250	41	2074	N
Washtenaw Community College	MI	92	454	4.935	53	259	Y
Waubonsee Community College	IL	55	496	9.018	47	423	Y
Waukesha County Technical College	WI	17	172	10.118	46	467	N
Wayne Community College	NC	70	232	3.314	59	194	Y
Wayne County Community College District	MI	338	123	0.364	210	76	Y
West Georgia Technical College	GA	131	264	2.015	71	142	Y
West Hills College-Coalinga	CA	25	22	0.880	110	97	N
West Hills College-Lemoore	CA	7	82	11.714	45	531	N
West Kentucky Community and Technical	KY	33	585	17.727	44	772	N
West Valley College	CA	16	231	14.438	44	640	N

West Virginia Northern Community Coll	WV	9	197	21.889	43	938	N
Western Dakota Technical College	SD	4	139	34.750	42	1453	N
Western Iowa Tech Community College	IA	17	177	10.412	46	479	N
Western Nebraska Community College	NE	11	143	13.000	45	582	N
Western Oklahoma State College	OK	40	107	2.675	63	169	N
Western Piedmont Community College	NC	14	136	9.714	46	451	N
Western Technical College	WI	11	415	37.727	42	1572	N
Western Texas College	TX	26	102	3.923	56	219	N
Western Wyoming Community College	WY	8	329	41.125	42	1708	N
Westmoreland County Community College	PA	35	561	16.029	44	704	N
Wharton County Junior College	TX	154	371	2.409	66	158	Y
White Mountains Community College	NH	1	91	91.000	41	3705	N
Wichita State U-Campus of AS/tech	KS	54	229	4.241	55	232	N
William Rainey Harper College	IL	60	809	13.483	45	602	Y
Williamsburg Technical College	SC	34	17	0.500	163	82	N
Williston State College	ND	13	212	16.308	44	715	N
Wilson Community College	NC	50	48	0.960	104	100	N
Wiregrass Georgia Technical College	GA	55	99	1.800	74	134	N
Woodland Community College	CA	0	44				N
Wor-Wic Community College	MD	76	203	2.671	63	169	Y
Wytheville Community College	VA	7	274	39.143	42	1629	N
Yavapai College	AZ	5	162	32.400	42	1359	N
York Technical College	SC	146	516	3.534	58	203	Y
Yuba College	CA	8	111	13.875	44	617	N

APPENDIX N – Colleges Selected for Interviews

Table A2. *List of Colleges Selected for Interviews*

Community College	State	| Black - White |
Georgia State University-Perimeter College	GA	0
Gadsden State Community College	AL	0
Houston Community College	TX	0
Quincy College	MA	1
Essex County College	NJ	1
Chattahoochee Valley Community College	AL	1
Coastal Alabama Community College	AL	1
Bishop State Community College	AL	2
Hudson County Community College	NJ	2
Central Carolina Community College	NC	2
Hinds Community College	MS	2
Dodge City Community College	KS	2
Northwest Vista College	TX	2
Trinity Valley Community College	TX	2
Jefferson State Community College	AL	2
Pima Community College	AZ	2
Northwest Mississippi Community College	MS	2
Norwalk Community College	CT	3
Bunker Hill Community College	MA	3
Northshore Technical Community College	LA	3
Angelina College	TX	3
Central Texas College	TX	3
CUNY Borough of Manhattan Community College	NY	3
North Central Texas College	TX	3
Tarrant County College District	TX	3
H Councill Trenholm State Community College	AL	4
Southside Virginia Community College	VA	4
Temple College	TX	4
Ozarks Technical Community College	MO	4
Blinn College	TX	4
Orangeburg Calhoun Technical College	SC	5
Housatonic Community College	CT	5
Central Alabama Community College	AL	5
Louisiana Delta Community College	LA	5
National Park College	AR	5
Coastal Carolina Community College	NC	5
Holmes Community College	MS	5
South Louisiana Community College	LA	5
Southern Maine Community College	ME	5

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