

ABSTRACT

MOORE, CATHERINE COLGATE TAYLOR. Understanding the Path to College: The Impact of Habitus, School and Community, Higher Education, and Social, Economic, and Policy Contexts on College-Going Behaviors of North Carolina High School Graduates. (Under the direction of James E. Bartlett, II and Michelle E. Bartlett).

The purpose of this study was to examine, from an inclusive conceptual framework, the specific indicators that may be used to explore how, when, and for whom major educational initiatives to promote college enrollment may be most effective within the State of North Carolina. The question that guided the study examined whether habitus, the school and/or community context, including high school type, higher education context, and/or social, economic, and policy context predicted college attendance for graduates of North Carolina traditional and early college high schools.

The methodology implemented was a non-experimental research design, which incorporated secondary data analysis from multiple data sources, including: the North Carolina Education Data Research Center and the U.S. Census. Perna's (2006) Model for College Access and Choice was used. Data analysis techniques included computation of means, standard deviations, frequencies and other descriptives as well as logistic regression.

Findings indicated graduates of early college high schools in North Carolina were significantly more likely to attend a four-year institution of higher education following graduation than graduates from traditional public North Carolina high schools. While 45 percent of graduates of traditional high schools reported plans to attend college, 64 percent of early college high school graduates planned to enroll. Factors within the school context that positively predicted college going behaviors (regardless of type) were: being within nine miles of an institution of higher education, community support and involvement, instructional practice and support for teachers, and teacher leadership.

Early college high schools had significantly different post-secondary outcomes for students of different races than students in traditional high schools. Parental level of education was a strong predictor of college-going behaviors. There was a significant difference in college-going behaviors for students in different economic development regions, students living in rural and urban communities, and in areas with strong community support for the schools. Students' grade point average and ACT scores were predictors of college attendance.

Keywords: early college high schools, high schools, college choice, student success, logistic regression

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Understanding the Path to College: The Impact of Habitus, School and Community, Higher
Education, and Social, Economic, and Policy Contexts on College-Going Behaviors of
North Carolina High School Graduates

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DEDICATION

To my partner and best friend, Jason Whitfield Moore.

BIOGRAPHY

Catherine Colgate Taylor Moore was born August 27, 1980 in Augusta, Georgia to Dr. William James Taylor, Jr. and Lynne Allison Gourley Taylor. Her immediate family includes: her husband, Jason Whitfield Moore and son, William Colgate, sister, Mary Elizabeth Taylor Smith, who is married to Michael Lee Smith, niece, Logan Elizabeth, brother, William James Taylor, III, who is married to Kinley Cothran Taylor, parents-in-law Mr. Jerry Lee Moore and Mrs. Betty Whitfield Moore, and brother-in-law Kyle Lee Moore, who is married to Sutton Hardy Moore, and their children Olivia Sutton and Hardy Whitfield. She attended high school at Walter M. Williams High School in Burlington, North Carolina. Moore received a Bachelor of Arts Degree from East Carolina University in 2003 in Communication with a focus in public relations and a minor in art where she served as the president of her class and the Panhellenic Council. She held leadership positions in other student organizations, including: Student Pirate Club Board of Directors, Student Union Board of Directors, Student Media Board of Directors, Athletic Advisory Board and was the North Carolina Delegate to the South Eastern Panhellenic Conference. In college, she was named Greek Woman of the Year by both the Inter-Fraternity Council and the Panhellenic Association. She was a participant in the Chancellor's Leadership Conference and nominated for Homecoming Court. In 2003, she completed a Certificate in Meeting and Event Planning at the University of North Carolina-Charlotte. In 2007, Moore earned a Masters of Education in Higher Education Administration with a minor in public policy and focus in organization and administration. Upon beginning her doctoral course of study, she was named a Provost's Fellow. Other honors received include membership in Kappa Delta Pi, International Honor Society in Education, Rho Lambda Honor Society, Order of Omega and the East Carolina University Greek Hall of Fame.

Moore worked for the Academic Consortium 21 (AC21), an international partnership of research universities hosted by Nagoya University in Japan, as the Program Coordinator and the Department of Adult and Higher Education at North Carolina State University as a graduate assistant. She was a research and policy fellow for the Institute for Emerging Issues, served in the North Carolina Office of the Governor Education Policy Office, co-taught graduate level courses, and worked in student affairs as a Panhellenic and resident advisor at North Carolina State University. She also served as an advisor to student organizations and on strategic planning boards at East Carolina University. Moore worked in Student Affairs at Duke University as a graduate assistant, Manager of Program Assessment, Assistant Director of Assessment and Research, and Interim Assistant Dean of Students. She currently serves as the Assistant to the Vice President for Student Life and Director of Student Life Assessment and Planning at Elon University. She is a member of the Board of Directors for the Student Affairs Assessment Leaders (SAAL) and a Sustainer in the Junior League of Durham and Orange Counties. She serves on the planning committee for the North Carolina Independent Colleges and Universities Assessment Conference. She resides in rural Orange County, North Carolina with her husband, Jason Whitfield Moore, son William Colgate, horses, and a Labrador retriever named Drake.

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CHAPTER 1

Introduction and Nature of the Problem

There is no magic bullet. There is no panacea. The issues surrounding education in this country today are complex – some would say to the extent that, a solution is improbable. These are all statements heard around the table of discussion and discourse surrounding education in the United States. Today, people in-and-outside of education are debating what needs to happen to reform education.

However, these statements are all, at least in part, incorrect. Statements like these are often made by individuals and organizations who fail to engage in evidence-based practices. There are models commonly used in other industries (though not perfect) that are used to discern whether, for example, an individual should be insured, a good investment, or where and how strategies for increasing productivity and efficiency can/should be implemented. Why should it not be the same in educational policy decision-making?

Educational policymakers often ignore the actual amount of data, real information, and qualitative evidence that exists. There are, in fact, many indicators that could be employed in order to examine effective models of practice and policy implementation to lead us toward a better system of education. With a strong study of history, consideration of culture, psychology and economics, I believe we can begin to understand more about the places and people where varying modes of intervention and innovation will lead us toward goals of economic stability and a higher, more equitable quality of life for all.

As such, the goal of this dissertation is to build and test a conceptual model inclusive of multiple paradigms of academic research and policy analysis. In this study, I will review the ways in which single subject paradigms are insufficient to study the efficacy of educational

initiatives and implement a model that incorporates modes of inquiry from psychology, sociology, economics, and education/organization, inspired by recommendations from Perna, Thomas (2008) and Valentine, et. al. (2009).

In this first chapter, I will provide a brief history of the economy and culture in North Carolina, the role of globalization on the increasing importance of education, and North Carolina's recent efforts to respond to the demands brought forth, in part, by globalization. The development of the Early College High School model will be described. A statement of the problem will be presented, followed by the research questions for this study. The proposed conceptual framework will be outlined and a case for the significance of the study will be made. Finally, definitions used in this study will be provided.

A Brief History of North Carolina's Economy and Educational System

Before we can understand where we are, we must understand where we have been. For more than 200 years, North Carolina's economy has been based primarily on three manufacturing industries: tobacco, textiles, and furniture. In many cases, the decline of these industries literally crippled entire communities. For example, on July 30, 2003, nearly 7,000 workers were laid off upon the closing of textile manufacturing company in a town whose total population was 38,000 (City of Kannapolis, 2004). When one considers the amount of the population who were elderly, children, or otherwise non-working adults; 7,000 displaced workers becomes an even more devastating number. Having grown up in a similar mill town, I vividly remember watching as businesses crumbled and consequently, so did the community. Such a blow to these communities, along with the emergence of globalization, provided a unique challenge and opportunity that required leaders from all sectors to begin to collaborate in order to recover.

As globalization has emerged, governments have become increasingly interested in the productivity of higher education. With globalization and the changes in the economy that accompany it, the demand for postsecondary degree attainment has risen over the past 50 years (Lumina Foundation, 2007). “Increases in a country's overall level of educational attainment causes corresponding increases in their overall rate of economic growth” (Carnevale and Desrochers, 2002, 2; Topel, 1998; Krueger and Lindahl, 1999). Globalization is a term that has been historically associated with supranational trends in the market, which diminish governments’ control over international interaction and increase the ambiguity of borders (Teichler, 2004). Benjamin (2000) claims that the absence of war (which limits international trade without major government intervention) forces nations to emphasize the value of their workforce and quality of life to attract and retain multinational corporations, thereby leading to such focus and pressure on higher education to develop human capital. As such, in the United States, the political focus on disparities of opportunity for Americans (linked to education) has sharpened. Access to and post-secondary degree attainment has earned much attention from individuals, families, scholars, as well as civic and educational leaders. Even the World Trade Organization (WTO) is focusing on higher education (Altbach, 2006; and Personal Correspondence with Chief Learning Officer of the World Bank, July 2009).

This external competition has arisen as a time in North Carolina (and the United States) when migration has made a tremendous impact on the demographics and economy. Simultaneously, the face of the workforce in the U.S. has changed. Low-tech manufacturing jobs have moved abroad and the need for increased education has risen immensely. Today, high-skill jobs that require postsecondary education make up almost half of all job growth in the U.S. and

the U.S. may be producing too few graduates to keep up with global competition (Florida, 2006; Carnevale and Desrochers, 2002).

The State's Response and Timeline

Due to the current economic pressures, there has been an ever-increasing focus on choice to attend and attainment of college degrees. Whereas the United States transformed from a farm-based economy to an industrial economy in the twentieth century; it has transformed again into a “knowledge economy or “creative economy” (Florida, 2006). Where the economy was once based on “physical inputs – land, capital and labor”, the economy has become largely based on “intellectual inputs or human creativity” (Florida, 2006, 22). And so, there has been an emergence of the development of costly initiatives seeking to address such disparities.

As a result of such pressures, North Carolina Governor Michael F. Easley and other leaders across the state began aggressively recruiting new industries. In early 2003, Governor Easley was announcing new jobs at a floor manufacturing company when he learned high school diplomas were insufficient qualifications in emerging high-technology manufacturing plants. In other words, even though new jobs were coming to the state, North Carolinians would be ineligible for the jobs because of their lack of education and competencies in technology.

As a part of the response, in early 2004, the governor and leaders from K-20 education: the Chairman of the State Board of Education, the State Superintendent of Public Schools, the President of the University System, the President of the North Carolina Community College System (NCCCS), and leaders in the North Carolina General Assembly (NCGA) came together to begin the work of creating what would be called *Learn and Earn* high schools (ECHS), five-year high schools located on college and university campuses. To facilitate the early work, the NC New Schools project (NCNSP), a 501(c)(3) was created in to mastermind the redesign of

high schools with an \$11 million grant from the Bill and Melinda Gates Foundation. The NCNSP provided oversight to locate possible school sites and partners. Simultaneously, the N.C. General Assembly (NCGA) passed the Innovative Education Initiatives Act, waiving most state regulations for cooperative high schools that involve community college partners.

The different government education agencies worked through early policy implementation barriers such as restrictions allowing high school students on college campuses, differences in the coding of coursework among agencies and the use and licensing requirements of college and university staff for high school courses. They also addressed fire code differences and how to provide lunch to the high school students on college campuses. Local school systems and the NC Department of Public Instruction worked through many policy changes, including how to allow students to participate in local high school sports programs and busing needs.

In 2004, the North Carolina General Assembly provided funding for the first five Learn and Earn high schools and, as of the fall of 2008, 63 ECHS high schools were established across the state of North Carolina. In 2007, Learn and Earn Online was established where more than 350,000 high school students could take college courses online in high school. Furthermore, Education Access Rewards North Carolina (EARN) Grants (\$4,000 per student/per year) were established to aid low-income students during their last two years of college. The overall funding for ECHS supports the following the three programs: 1) Learn and Earn Early College High Schools 2) Learn and Earn Online and 3) EARN Grants.

In North Carolina's ECHSs, students attend a high school located on a college or university campus and can earn a high school diploma and two years of college credit or an associate degree in up to five years (See Appendix B). Today, NC Learn and Earn operates on a recurring state budget appropriation of 141.7 million dollars, a major financial commitment for

the state. North Carolina's new high school model is a part of a larger national movement, but the 76 ECHS high across the state of North Carolina account for more than a third of the 210 early colleges nationwide. Furthermore, the North Carolina Learn and Earn initiative won the Innovations in American Government Awards competition sponsored by the Ash Institute for Democratic Governance and Innovation at the Harvard Kennedy School (NCDPI, 2009). To date, this is the only time any North Carolina agency or program has ever won this award.

Statement of the Problem

The problem at hand is three-fold. There is: 1) a methodological problem, 2) a readiness problem and, 3) an achievement problem. Access to, and preparation for, higher education is a major current issue. However, research, program evaluation, and policies around this issue are often siloed. If piecemeal steps to assess the impact of educational initiatives continue to serve as the model in practice, findings will continue to be ignored by policy-makers. Decisions will be made, decisions that impact thousands of students and residents of North Carolina, based upon popular opinions, anecdotal evidence and partisan agendas. Ultimately the old saying, "educational initiatives don't change schools – schools change initiatives" will be perpetuated and the potential of initiatives will continue to be diminished by changes in political leadership, school leadership and incomplete assessments of initiatives' impact. If a holistic, quantitative, model is not employed to understand where and how various factors impact students' predispositions to succeed, then decisions made around educational initiatives – and ways and how's to disseminate resources effectively cannot be made. The outcome of such a chartered course will mean that underachieving students will continue to underachieve, gaps in attainment may widen, and individuals, schools and communities will continue to fail to meet their potential.

Methodological Problem

There are a number of issues that comprise the methodological problems that raise the need for this study. First, prior research fails to address success and experiences in dual enrollment programs for low- and moderate-achieving students. Additionally, prior to the current SERVE study and other recent dissertations, studies conducted on early colleges, middle colleges, and dual enrollment programs have historically been qualitative or on a small scale. There are also a limited number of experimental studies in educational research on underserved or at-risk populations.

In contrast to dual enrollment programs, Advanced Placement Courses (AP), and most other programs designed to expose students to the rigor and/or other aspects of college, participation in the early college high school is not limited to already high-achieving students. Many of the ECHS use a lottery for admission and are reflective of the community's population, so there is somewhat of a benchmark to compare outcomes of participation in different academic programs within communities. This benchmark which will help to understand variance in the unique communities of North Carolina. The inclusion of the variance in communities is particularly important in understanding how initiatives work in different communities. According to the 2010 Census, North Carolina has a population of more than 3.2 million people living in rural areas, making it the second largest rural population in the United States. (U.S. Census, 2012).

Furthermore, there is a problem of “who” has conducted research on the topic at-hand. Essentially, the methodological problem here is that “practitioners” primarily conduct program evaluation. They typically examine the outcomes of a particular program and its impact on participants. In contrast, educational “researchers” examine the issues at-hand in order to build

and test theory. A connection needs to be made through research that incorporates theory to understand the impact of different types of programs simultaneously.

Readiness

Access to higher education alone may not serve aspiring college-goers. If they enter higher education unprepared and fail, they may incur massive debt. Much research has been conducted in an attempt to address the access and success disparities for underserved and at-risk populations. Some researchers have examined degree aspirations for these populations, but as of late, the scholarship has found great disparities between at-risk students' expressed aspirations for college, their readiness, and ultimately, actual pursuit of a degree (Cabrera and Nasa, 2000; Wallace and Diekroger, 2000; Baskin, 2008; Karp, et. al, 2007).

Furthermore, prior studies (Johnson, 2007; Hunt and Carroll, 2006) have found that high school type may affect degree aspirations and persistence in college, especially for low-income and first-generation college students, but whether using dual enrollment courses to accelerate students through high school and college negatively influences students' educational experiences and outcomes is not yet known, so future research is needed to examine if and how the early college model may affect students.

The literature available does suggest that underserved students are likely to benefit from alternative pathways to college such as enrollment in early colleges because of the lower college costs, small courses and mentorship found in early colleges, and greater confidence and abilities to navigate the higher education system (Barnett and Bragg, 2006; Cabrera and La Nasa, 2001). However, There has been minimal research conducted that examines the effectiveness of individual outreach strategies to at-risk student populations (Kenyon, 2008).

Much of the literature on access and persistence in higher education links major barriers with available financial resources (Paulsen, St. John, Cabrera, Walpole). In the case of the early colleges, students do not pay for at least two years of their college education (or at all if only seeking the associate's degree). By removing the financial aspect of college attendance, it may be worthwhile to examine if there are other factors in the school context which strongly affect student persistence and academic goals.

The literature also notes that an additional barrier for underserved students to degree attainment in the transition period to college itself. The academic and social demands often make it difficult for those students to adjust to college life (Green, 2006, Clark, 2005, Ostrove and Long, 2007). In this case, the students are already a part of a college community, and in college courses, for five years under the supervision and structure of secondary school policies and teachers as well.

A handful of studies have been conducted to compare middle colleges with traditional high school education and other initiatives (Born) and recently, with early colleges in a five-year study that rigorously examined the impact of the early college high school model (Edmunds, et. al, 2009). However, because of the numerous variables that make up a students' academic portrait, a study needs to be conducted which examines these issues understanding the impact of the intersections of multiple factors to understand better where and how different populations are affected by varying factors in the high school experience.

For example, in research on student identity, methodological challenges have been found in the way research historically examined dimensions of identity independently and made inferences that ignored the importance of intersectionalities in identity. In 2008, Bowleg examined and later challenged the research methods used to understand student identity

development. Bowleg's article, "When Black + Lesbian + Woman ≠ Black Lesbian Woman: The Methodological Challenges of Qualitative and Quantitative Intersectionality Research" posited that a person's multiple identities must be examined and understood simultaneously, that Black + Lesbian + Woman ≠ Black Lesbian Woman. Rather, "being Black and Lesbian confers a unique experience, above and beyond being Black or lesbian" (p. 319).

In the same respect, the impact of the Early College High School needs to be examined in a way that accounts for the notion that the impact of the early college high school model may vary for X-Student Type + Y-Family Type + Z-Institutional Context + Q-Community to = a student's readiness and predisposition to succeed in college. While initial findings of the Longitudinal SERVE study and others have found positive impacts on student retention, promotion and aspirations, etc. and examined the variance by variables such as: race/ethnicity, poverty status, and first generation college status, etc. – there has not been a holistic approach to examining the variance of impact on student populations that account for the intersections of the factors that make up students' entire academic portrait. For example, the impact of the ECHS model on Black + Males who + live in a Metropolitan Area ≠ the impact of the ECHS model (Black + Males who + live in a Rural Area).

Simultaneously, the impact of the initiative on White + Females who + live in an isolated area could potentially be diminished by a smaller variance of impact on White + Females who + live in an area with access to many resources. A multidisciplinary approach study that accounts for the "multiple identities" that make up a student's experience "above and beyond" their gender, circumstance, family, school and community should be conducted to learn more about the impact on students' overall predisposition to successfully attain a college degree. The results

could then be used to make evidence-based decisions on enrollment, distribution of resources, and areas in the initiative that could be improved based on student outcomes.

Achievement

The problem of achievement lies in the interests of two main stakeholders, the economy and the individual. It is critical that today's young workers and youth seek out and obtain a college education because they must be able to replace the "aging, college-educated baby boomers" who will retire soon (Ficklen and Stone, 2002, p.3). And, due to the rising costs of higher education, individuals need to achieve in order to reap the benefits of a college degree and, eventually, be able to make up the opportunity costs from the time of their college attendance. The early college high school model may help to improve baccalaureate degree attainment and thereby promote individual success as well as economic productivity in society. As such, this study will seek to examine the ways in which both the public and private (individual) interests of stakeholders are best met through the understanding of the ways varying high school experiences affect different type of students.

Since the 1970s, middle colleges and other dual enrollment programs have been a part of the educational system, but were traditionally offered only to advanced students (Barnett and Bragg, 2006, p.102). Middle colleges in North Carolina are schools where college courses are offered to high school students, but without the guarantee of a two-year degree or two years of transferable credit (NCCCS). However, in 2006-2007, there were 33 Learn and Earn high schools with 2,900 total students, 63 percent of whom were first-generation college students. So, unlike previous studies on dual enrollment and middle colleges, this study will examine the effects of an alternative high school model on a different population and may potentially produce varied results. This study will also incorporate the comparative impacts of other educational

initiatives designed to prepare high school students for success in college such as, Advanced Placement (AP).

In summary, existing research has focused on particular programs and particular populations. In contrast, the approach utilized through this study is a focus on the degree of effectiveness of interventions in different student, school and community, higher education, and social, economic, and policy contexts across the State of North Carolina. This study does not aim to prove or disprove the effectiveness of one initiative, in this case the early college high schools, but to understand the elements that comprise the most impactful interventions. The theory that will drive this research is Perna's (2006) Model for College Access and Choice.

Purpose of the Study

There are two purposes for this study: 1) to understand the likelihood of students participating in the early college high school initiative to pursue a bachelor degree program; and 2) to discern whether and to what extent, elements of the school and/or community context affect different populations within early colleges to a varying degree compared to students in traditional high schools.

The first major purpose of this study is to examine whether there is a significant difference in the predisposition for college completion of students in North Carolina's early colleges versus students in North Carolina traditional high schools. Specifically, it will: examine if and how the early college model may affect students; provide information on the specific elements that were part of the intervention strategy and report details about resource utilization; link aspirations to evidence of their predisposition to degree completion (because of the unique early college model); examine college aspirations of at-risk students with the financial aspect minimized as much as possible; and study the effects of a unique program on a large scale,

through a quantitative paradigm. Because the population in this study included both students who had and had not taken college-level classes, there was a unique opportunity to measure the impact of existing achievement in college on college-going behaviors.

The second major purpose of this study is to examine, from an inclusive conceptual framework, the specific indicators that may be used to explore how, when, and for whom major educational initiatives, like the early college high school, may be most effective. Given the breadth and goals of the early college initiative, it is an ideal subject for the study of the variance in effectiveness of an initiative for different populations and different communities. It will consider environmental and cultural factors in order to glean whether its impact varies in different types of communities and different school cultures.

Research Question

The research question for this study is: Do Habitus, School and Community, Higher Education, Social, Economic, and Policy contexts affect North Carolina high school graduates' likelihood to attend four-year colleges and universities? To what extent?

Research Methodology

The research methodology for the study utilized a secondary data analysis from multiple sources. The primary source for data will be obtained from the North Carolina Education Data Research Center (NCERDC) holdings who partners with the North Carolina Department of Public Instruction (NCDPI) to store and manage the state's data, data from the North Carolina Teacher Working Conditions Survey (TWC) (SSRI, 2014), publicly available data from the 2012 U.S. Census was added to the data obtained from the NCERDC.

Theoretical Framework

Both the theoretical and conceptual frameworks for this study are built upon a compilation of theories first introduced by Perna, to understand college access and choice from an integrated model incorporating the four major types of capital: 1) social; 2) economic; 3) cultural and 4) human capital. The first theoretical assumptions for this study and Perna's Conceptual Model of College Access and Choice are based in Becker's Human Capital Theory (1975): that there are public and social benefits of higher education, low-income and first-generation students tend to underinvest in higher education, and that society may prefer a more equal distribution of income, and access to higher education is a means toward that end.

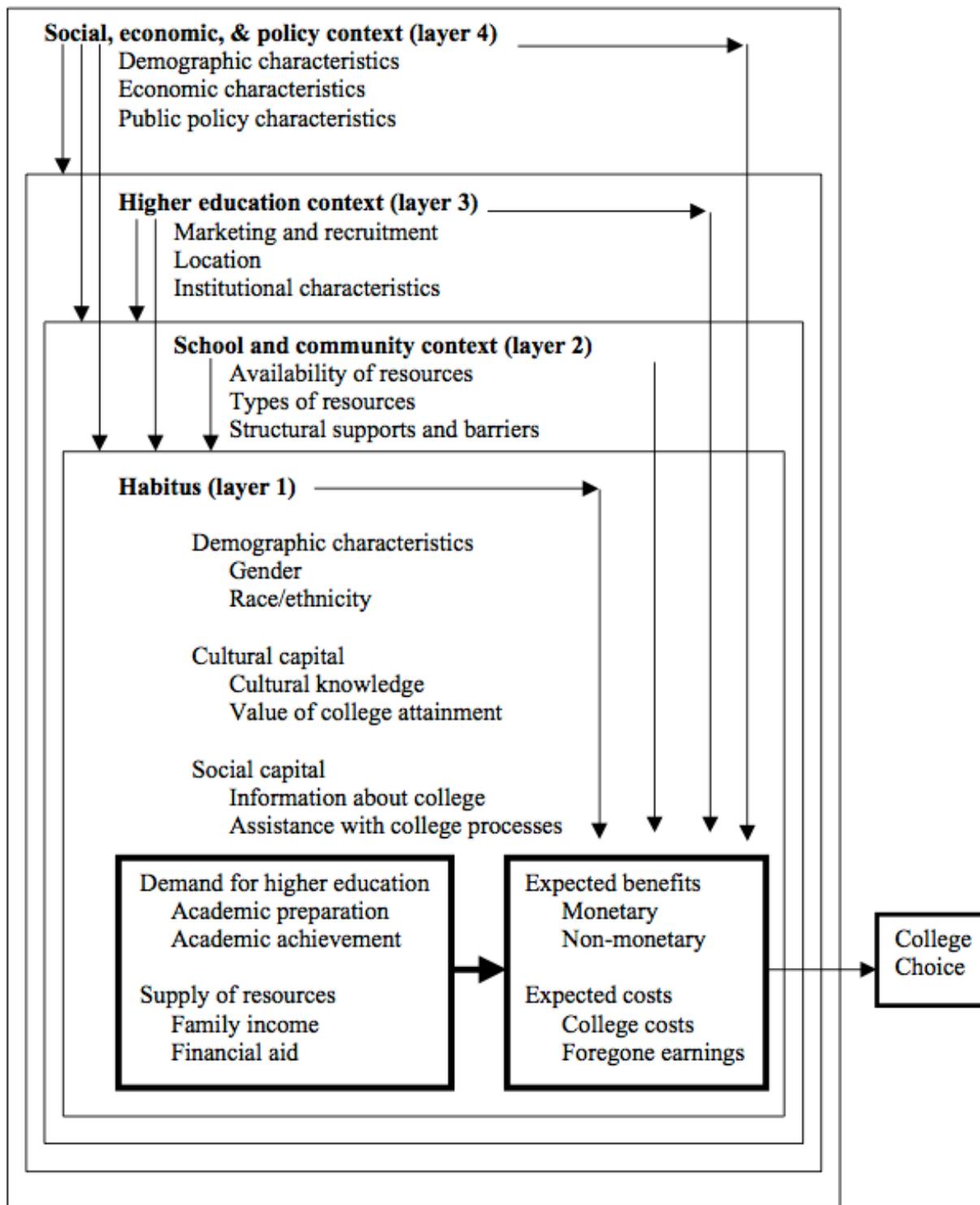


Figure 1.1 Perna's (2006) Proposed Model of Student College Choice and Access

Conceptual Framework

The aforementioned research question is based upon a conceptual framework which combines conceptual frameworks both proposed and incorporated into prior scholarship and adapted for this academic model. It employs existing models for both college choice and student persistence in high school and college. It also adapts previous models to fit the unique nature of the early college and the contextual factors of the state of North Carolina.

The conundrum of understanding college choice and preparedness, which both contribute to a student's likelihood to attend college is that "the college choice process is laden with class-based patterns characterized among students and parents by different senses of entitlement, different expectations and use of counselors, different behaviors regarding college application processes, differential access to resources that enhance the college choice process, and different school-based climates regarding academics and achievement orientations" (Hamrick and Stage, 2004, p. 152). One of the major limitations to prior research on student success and college choice was identified by Perna and Thomas (2008). Perna and Thomas (2008) posit that prior research has been too narrow in focus. The research has been historically limited by the discipline of the research. They identify four disciplines traditionally used and claim that the methodology used is usually consistent with and limited to the discipline as well. They are: 1) Psychology, 2) Sociology, 3) Economics, and 4) Education/Organization (Perna and Thomas, 2008; Valentine, et al., 2009). Both Perna and Thomas (2008) and Valentine, Hirschy, Bremer, Novillo, Castellano, and Banister (2009) used multiple perspectives to develop models for better understanding the decisions students make. However, neither has been extensively applied.

According to Perna (2008) and Valentine, et al., (2009), psychology research on student behaviors incorporates attitudes, motivation and goal theories and variables that describe

personality traits (e.g., Astin, 1984; Eaton and Bean, 1995). Sociology incorporates theories and questions around social issues of advantage versus disadvantage as well as the notion of *habitus* (e.g., Paulsen and St. John, 2002; Perna and Titus, 2005). Studies from the Organization, or Education, discipline/perspective tend to draw upon institutional characteristics as well as other disciplines (e.g., Bean, 1980, 1983). Finally, studies on student behaviors from the Economics perspective often examine students' willingness to invest, Human Capital Theory, and students' perceived returns of investing in higher education (e.g., Perna, 2006; Titus, 2006; Cabrera, Nora, and Castaneda, 1993; St. John, Paulsen, and Carter, 2005; Gigerenzer and Shelton, 2001; Monks, 1997; Leontaridi, 1998).

Table 1.1 Research Paradigms of Disciplines

	Psychology	Sociology	Organization/ Education	Economics
Research Question Focus	Attitudes Motivation	Social Issues: Advantage vs. Disadvantage	Institutional Characteristics Other Disciplines	Students' Willingness to Invest Perceived Returns of Investing in Higher Education Human Capital Theory
Example of Theories	Goal Theories	Social Issues The Notion of <i>Habitus</i>		
Variables	Personality Traits		Institutional Characteristics	

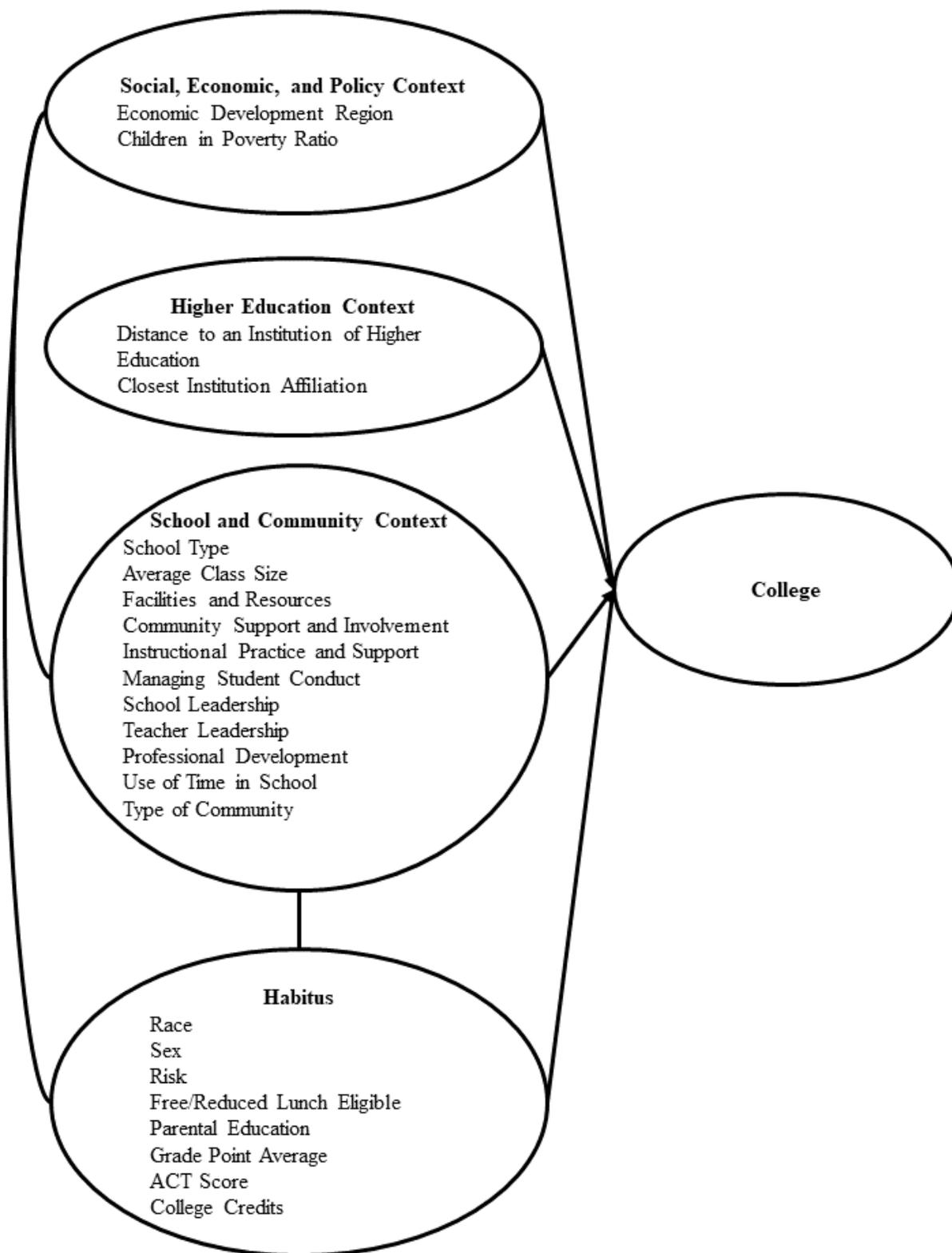


Figure 1.2 Moore's Conceptual Model

Significance of the Study

There are at least two unique aspects of this initiative from the perspective of an educational researcher. The first, primarily addressed through this study, is the effects of an alternative academic model on an individual or groups of individuals. The second is the way this initiative came about, the political process of the initiative. This study will not solely focus on either aspect because; the implementation and overall political process of this academic model (aspect two) may have an impact on the effectiveness of the academic model (aspect one).

A 2008 study by Perna, Rowan-Kenyon, Bell, Thomas, and Li examined the typology of federal and state programs designed to promote college enrollment and found that most government programs designed to promote access were mostly financial and often only afforded to already high-achieving students. It called for the need to couple the financial support with programmatic goals and objectives, a consistent curriculum, academic support, and especially access to the program itself. North Carolina's Early Colleges, as aforementioned, have received considerable funding, political support, an extensive marketing campaign, and a conceptualized model for curriculum on a large scale that many initiatives have not had historically.

While the changing economy, as well as the initiatives to combat emerging issues, may be exaggerated in North Carolina, the problems and opportunities are not unique to the state. This initiative emerges with greater significance as one considers the dramatically rising costs of higher education in recent decades and changing needs of the workforce across the country. Consequently, public interest in higher education has risen significantly. Simultaneously, in the absence of major wars between countries, corporations and organizations have reemerged as multinational entities, which elevates competition for secure employment. Additionally, many of the low-skill jobs, which require no post-secondary education, are now held by persons in

countries where the costs of employment are lower for corporations. The findings of this study may be used to inform education policymakers as they appropriate resources and seek to better understand the predictors of college-going behaviors. The findings may also inform educators and education administrators as they seek to improve school and community working conditions to promote student success. On some level, parents might also be informed by the findings of this study as they consider the type of high school for their student to attend based on their demographics, academic performance, and community where they live.

Definitions and Terms

Access to Higher Education

Access to higher education includes how low- and middle-income families pay college costs, how students traditionally underrepresented in higher education persist when faced with discrimination and/or social disadvantage, and the levels at which high school graduates are prepared for college-level work (Bragg, Kim, and Barnett, 2006). Educators and scholars often agree that there is a need for K-12 and higher education partnerships, but little has been done to say how that relationship would ideally look.

The Early College

The school model examined in this study, as aforementioned, is an *Early College High School (ECHS)*. An early college, synonymous for the purposes of this particular study with a *Learn and Earn (ECHS)*, is a high school located on a college or university campus in the state of North Carolina where a student enrolls in college courses and a unique high school curriculum and works toward a high school diploma and can earn either an associates degree or two years of college credit transferable to the University of North Carolina constituent institutions in up to 5 years (nclearnandearn.gov, 2009). “Early college high schools are small, autonomous schools

designed to increase the number of students who graduate from high school and are prepared for postsecondary education. Targeted at students who are underrepresented in college, these schools are most frequently located on college campuses and are intended to provide students with 2 years of college credit upon graduation from high school” (Edmunds, Bernstein, Glennie, Willse, Arshavsky, Unlu, Bartz, Silberman, Scales, and Dallas, 2010, p. 348).

NCNSP Design Principles

NC New Schools supports educators in innovative schools to:

- Believe in a common set of high standards and expectations that ensure every student graduates ready for college - schools maintain a common set of standards for all in order to eliminate the harmful consequences of tracking and sorting students.
- Uphold common standards for high quality, rigorous instruction that promote powerful teaching and learning.
- Demonstrate personalization - educators must know students well to help them achieve academically.
- Redefine professionalism, creating a shared vision so that all school staff take responsibility for the success of every student.
- Work from a purposeful design where the use of time, space and resources ensures that best practices become common practice.
- Empower shared leadership embedded in a culture of high expectations and a collaborative work environment to ensure the success of each student.

High schools.

High schools in the United States of America are secondary educational institutions, typically consisting of grades nine through 12 where traditionally-aged students are between 14

and 18-years old. Curricula offered through high schools range from foundational courses to college/career preparation, and/or specialized courses. Some high schools also offer high-achieving students opportunities to take college courses through Advanced Placement (AP) courses and International Baccalaureate (IB).

Costs.

The costs of attendance at a North Carolina ECHS are comparable with traditional high school enrollment. For example, transportation to and from school, the availability of free-reduced lunch, free textbooks, and the costs of tuition are included at no expense to the student or the student's family.

However, there are other costs of attendance of an ECHS that must be considered as a part of this study. A variance in the internalized cost of attendance for students may exist including, but not limited to: opportunity costs, the deferment of earnings (time cost) because of the extra year needed to complete high school. In contrast, there is a reduced cost of education for students who graduate from a Learn and Earn and would have pursued an associates or bachelors degree because the ECHS program reduces students' time to degree by two years. For students who plan to pursue a four-year (bachelors degree) or higher, their overall cost of attendance may be reduced by the equivalent of the monetary costs of attendance at a four-year institution for two years. The estimated amount in the state of North Carolina is \$26,000 in savings (nclearnandearn.gov, 2009).

Admission to an early college.

The North Carolina Learn and Earn initiative began with a focus on at-risk students. As a part of the North Carolina Department of Public Instruction (DPI) Priority Objectives and Strategies, all Early College High Schools have a student population that is composed of at least

95 percent of students who are either academically at-risk, first time college attendees or economically disadvantaged (North Carolina Department of Public Instruction, 2009). However, any high school student in North Carolina without record of school violence is eligible to attend an early college. For students who live in an area where there is not an accessible ECHS or who are not admitted to a ECHS, there is another facet of the initiative called Learn and Learn Online that students can take part in.

Curriculum.

The curriculum in ECHSs is somewhat different from the traditional North Carolina State mandated curriculum. As aforementioned, in August of 2003, former North Carolina Governor Easley established the North Carolina New Schools Project (NCNSP) with an \$11 million grant from the Bill and Melinda Gates Foundation. Simultaneously, the N.C. General Assembly (NCGA) passed the *Innovative Education Initiatives Act*, waiving most state regulations for cooperative high schools that involve community college partners.

While the exact plan of work and general curriculum varies both by school and by student, generally speaking, students begin taking college courses along with their high school courses in the ninth grade. Through grade promotion, students enroll in more college level courses. Furthermore, upon completion of the tenth grade, students choose a path to either pursue an associate's degree or a bachelor's degree. North Carolina ECHSs provide, according to the state, "an academically rigorous curriculum grounded in the skills needed to succeed in college and the 21st century workplace. They also focus on particular fields of interest to make learning more relevant to students or are based on a college campus so that students can earn college credits. Many schools have a focus in areas that are vital to the future of the state's economy, including science, technology, engineering and mathematics" (NCDPI, 2008).

The classroom experience in an ECHS.

The classroom experience is designed with the NCNSP design principles in mind. There is a cap of 100 students per grade (Jobs for the Future, 2014), so both the schools and class sizes are smaller and the student-to-administrator ratio is lower.

“At-Risk” Students

Through prior research and various state policies, many different characteristics have been used to identify what defines an *at-risk student*. There are many characteristics states, researchers, and educators use to deem a student at-risk— so many it seems, that the list is arguably endless. In my career, I have yet to meet a high school or college student without risk of failing to achieve their academic goals. Rather than using the negative term “at-risk”, this study seeks to examine the positive factors that correlate with a student’s predisposition to “perform at-promise”.

In consideration of the state demographics and the uses of definitions in prior research (Astin, 1982; Kaufman and Bradby, 1992; Tabb, 1991; Chen and Kaufman, 1997; Malnarich, 2005; McCabe, 2003; Walsh, 2003, Bulger and Watson, 2006), for the purposes of this study at-risk students are defined as those who may be or have one or more of the following characteristics: Low Socio-Economic Status (SES), from a Single Parent Family, have an Older Sibling who dropped out of high school, have two or more school transfers, from a Rural and/or economically disadvantaged community and/or possibly with Limited access to technology, who repeated a grade (Grades six to eight), Emotionally Impaired/Socially Withdrawn, Major Physical Limitations, history of Poor school Attendance, and/or a student whose second language is English (ESL) (Astin, 1982; Kaufman and Bradby, 1992; Tabb, 1991; Chen and Kaufman, 1997; Malnarich, 2005; McCabe, 2003; Walsh, 2003, Bulger and Watson, 2006).

According to the NCDPI, each “Learn and Earn early college high school serves a student population that is representative of the student population in the district, with an emphasis on recruiting and serving students who would not typically get an opportunity to go to college or who would otherwise have dropped out of school (first generation college-going students, underachieving students and low-income and minority students)” (NC Public Schools, 2009).

Success

Perna and Thomas (2008) identified ten indicators of student success within four categories of transitions for students. These indicators and categories were developed based upon traditional school and college attendance. However, because the population in this study is pursuing academic goals through an alternative school model which combines secondary and post-secondary education, the indicators used to define student success have been adapted accordingly. Success, and/or Predisposition to Succeed, is defined by two transition categories: Readiness and Achievement (excluding Enrollment and post-college attainment also identified by Perna and Thomas (2008)).

For the transition of Readiness, student aspirations for degree attainment and academic preparation for college will be used as the two indicators. For the transition of achievement, academic performance, transfer, and persistence to completion will be incorporated into this study. Academic performance will be operationalized as having a grade point average greater than a 2.0 or in good academic standing with the institution. Because many of the students in the sample population have not yet graduated from the ECHSs, transfer and persistence to completion will also include continuous enrollment by semester and variables about student

engagement and satisfaction with the ECHS experience as predictors of achievement (Perna and Thomas, 2008).

Predisposition to Succeed

A students' overall predisposition to succeed is a sum of characteristics within a student's environment: 1) family, 2) school and 3) community, demographics, their level of access to higher education, and existing indicators of achievement, including: grade point average, college courses completed, and the ACT score, one of the two tests used for admission to American colleges and universities (ACT, Inc., 2014).

Limitations

This study has a number of limitations. The first and foremost limitation of this study is the use of secondary data. The existing state-wide data available excluded a number of variables that may have been helpful in this study. The initial conceptual model for the study included variables for which available data failed to exist. Unavailable variables in Habitus included: (Cultural capital) cultural knowledge and value of college attainment; Social capital (information about college and assistance with college processes; financial aid, Expected benefits (monetary and non-monetary); expected costs (college costs and foregone earnings). In the higher education context there was no information available in regards to marketing and recruitment, nor detailed information about the institutions of higher education students planned to attend. In the final context, social, economic, and policy, information was unavailable proposed by Perna, including: unemployment rates by LEA, appropriations to IHE, and need-based grant programs.

Habitus

Potential risk factors for students unavailable through existing data are: two or more school transfers; whether a student has limited access to technology (no have access to a

computer at home), and whether the student had been an expectant parent. Indicators used in previous studies to describe a student's home life that may contribute to, or detract from, student success which are unavailable through existing data include parental occupation, a sibling(s) academic status, and the number of adults living in the home.

Academic Competitiveness and Sample

Second, a limited amount of research had previously been conducted on early colleges and/or specialized initiatives which were not limited by academic competitiveness, so there was not an existing framework to build upon. Unlike previous research on middle colleges, the impact of Advanced Placement Coursework, the International Baccalaureate Curriculum, etc., an examination of the early college model allowed this researcher to understand the impact of college credits earned on college-going behaviors for students regardless of academic competitiveness. Students were able to enroll in early college high schools and earn college credit regardless of whether they were an honors student. Therefore, the theoretical implications suggested by the findings of this study should be tested in future studies.

Another limitation of this study is in the sample population itself. Students often self-select which high school to attend and/or apply to in some cases. At the early colleges, some schools used a lottery for admission, but students had to apply. Additionally, not all early college-high schools use a lottery for admission. These students, as well as those at North Carolina high schools with an application/assignment process, may have certain characteristics which may limit the generalizability of the findings of this study. For example, students who applied to early colleges either found out about Learn and Earn on their own or may have been encouraged to apply by teachers, guidance counselors, mentors, and parents. This element introduces potential bias or self-selection, which should be considered.

There were also limitations for the outcome variable, whether a student attended college or not. Future Plans was a self-reported variable acquired through the NCERDC. Although the NCERDC did not identify the variable as self-reported in the codebooks provided, reference was made to a graduation exit survey for all high school students. Because students' future plans were self-reported, the plans may not reflect with full accuracy, what students actually did following graduation. Furthermore, the outcome is college attendance, not completion, which does not measure whether the students graduated from college.

Organization of the Study

The study is divided into five chapters. The first Chapter introduced the historical and current context surrounding the early college high school model and access to postsecondary education. A brief history of the economy and culture in North Carolina was given, the impact of globalization on the increasing importance of higher education was described, and the development of the early college high school model was introduced. The Chapter provided the statement of the research problem, the purpose of the study, the specific research questions, an overview of the theoretical framework and the conceptual framework used to guide the study. An overview of the research design and methodology, definition of terms essential to the study, significance of the study, and the delimitations of the study were highlighted in the Chapter. The Chapter concluded with an outline of the organization of the study.

The second Chapter begins with review of the context of education in the state of North Carolina. Then, the Chapter provides a review of the literature on access to higher education, student choice and persistence. Gaps in the literature will be identified. The third Chapter includes a description of the research methodology, data collection techniques, ethical considerations, a review of the instruments and data sources and procedures. The fourth Chapter

includes the presentation of the findings. The fifth Chapter presents an overall summary of the study. It includes a review of the findings, conclusions, recommendations, limitations of the study and implications for future research.

CHAPTER 2

Review of the Literature

Introduction

Because education is an applied field, the review of literature for the study focuses on both the historical and current context of educational access as well as the theories that have been applied to the study of higher education readiness and success. To understand the need to better understand these issues and importance of further study, the chapter begins with a review of the context of education in the state of North Carolina. Then, initiatives over the last century, including early college high schools, will be reviewed. Research on access to higher education, student choice and persistence will be reviewed, synthesized and summarized. The literature review is organized by the latent constructs: 1) student; 2) family; 3) institution; and 4) community. Research on readiness for college and achievement will be reviewed. The chapter concludes with a summary of the literature review provided. Criteria for inclusion in the review of the literature included: educational initiatives with a connection to higher education success, alignment with the subject of this study, and relevance to study design.

Through this chapter, an argument is made to highlight the ways in which prior research has attempted to understand the impact of educational initiatives and likelihood of students to succeed in 4-year institutions in a compartmentalized manner. Research has also focused on student readiness and achievement, but has failed to examine the two simultaneously and also, omitted an opportunity to explore these outcomes with varying student and educational contexts in mind. However, this research will attempt to explore these aforementioned aspects in an inclusive fashion.

The Context of Education in Society

The debate over who must be educated, how they must be educated, and why they must be educated spans back beyond the days of Plato and Aristotle. Similarly, the implications of education on society and vice versa have been considered in key policy discussions for hundreds of years. In recent years, many scholars have studied policies that may affect who pursue an education as well as the individual characteristics of those who “choose” to pursue an education. Recent scholarship on education, or rather specifically on higher education, has primarily examined a narrow scope of elements and trends in higher education. Said scholarship has mostly looked to the past one hundred years and very much to American higher education only for reference.

However, to fully understand the reasoning and scope of current trends and issues in higher education and help explain the significance of current happenings, one would be well served to seek and examine fundamental concepts and trends from a global as well as historical perspective. Furthermore, although higher education is an “applied” field of study, more often than not – higher education researchers fail to apply their research or choose specific initiatives. This chapter is divided into two categories, the first being a review of concept and current practice in the literature, and secondly, a review of research in the literature. In this chapter, a review of historical policies in education and their underlying fundamental concepts will be reviewed. The context and climate of the State of North Carolina will be reviewed. Then, with these notions in mind, a review of relevant scholarship available will be shared.

Historical Review of Access to Education

Throughout history, higher education institutions and the greater society have been affected by one another. The needs, societal trends, and current state of affairs in society have, at

times, shifted the focus and also the governance of higher education. Similarly, innovations and advancements within higher education have contributed greatly to innovations and advancements in the culture, governance, and issues faced by society. In recent years, debates between policy makers over the purpose of higher education, the potential of higher education and the funding of higher education have increased around the globe. In general, there is often a lack of consensus on what the priorities of higher education should be and how those priorities are shaped, funded and implemented. The significance and connection of these issues to the research questions at hand is that initiatives come about as a result of government intervention with specific goals towards economic stability. The development of social capital is often a secondary—or residual—goal/effect, so it is essential to understand these patterns and how changes made affect all stakeholders' levels of achievement of their respective goals.

Education: In War and At Peace

As aforementioned in Chapter I, higher education institutions and the greater society have been affected by one another. The needs, societal trends, and current state of affairs in society have, at times, shifted the focus and also the governance of higher education. Similarly, innovations and advancements within higher education have contributed greatly to innovations and advancements in the culture, governance, and issues faced by society. This notion is echoed by Dey and Hurtado's (2005) concept of the relationship between higher education and the greater society as ecological. An ecological perspective posits that students contribute to and help define the culture of an institution; they are also influenced by the culture of an institution. What transpires on college campuses influences the larger society; at the same time, the larger social context affects the culture and emerging issues on college campuses. "Over the last three decades, both our society and the nature of our institutions have undergone tremendous changes

that call for an understanding of these interconnections in order to improve undergraduate education” (Dey and Hurtado, 2005, p.315). These significant changes present a need to examine the educational landscape, as well as the ways in which students are affected by happenings in the United States and around the world.

For the purposes of this study, the term *globalization* is used in correlation with times of peace. While one may easily argue that, at present, there is both the emergence of globalization and war taking place in the world; the wars, at present, have not closed borders for commerce as they have historically. Most of the existing scholarship approaches the issues of globalization and consequential governance issues from a singular framework. Failure to do so may limit the usefulness of some of the literature by practitioners and policy makers. There is a tremendous amount of debate over what is actually happening worldwide, what its lasting effects will be, how the issues are related, and how they are being communicated both within the literature and to outside stakeholders. Additionally, “few studies address the entire governance process...” (Kezar, 2004, p.373) instead they address portions of the issues brought about by recent developments such as access, faculty and administrator roles, state governing boards, mission, accountability, entrepreneurship, etc. These issues are more than loosely coupled and are all affected by the emerging issues brought forth by globalization and the perceptions of what it means for higher education as well as the larger society.

The Importance of College Access: Maintaining Global Competitiveness.

As borders blur, the need for a country’s human capital grows in order to maintain economic health. Benjamin (2000) draws a correlation between the end of the Cold War and the World Economy Project as the causality for many of the current issues in higher education. The World Economy Project began in the 19th century but was held off by real and covert wars.

Since the end of the Cold War, the project has picked up once again and has been made even more feasible with technological advancements. Benjamin (2000) claims that the absence of war (which limits international trade without major government intervention) forces nations to emphasize the value of their workforce and quality of life to attract and retain multinational corporations, thereby leading to such focus and pressure on higher education to develop human capital.

Universities are multi-purpose or multi-product institutions which contribute to the generation and transmission of ideology, the selection and formation of elites, the social development and educational upgrading of societies, the production and application of knowledge and the training of the highly skilled labor force” (Enders, 2004, p.362). This common function explains the increased attention received by governments as a result of globalization, but begs the question as to whether it is government at all which higher education should be accountable to in the era of ‘globalization’. Enders, (2004) claims that, because universities are transnational organizations, “there seems no longer a single society to which a university can now be expected to respond. There are only governments, academics and students, labor markets and industries, professions and occupations, status groups and reference groups, communities and localities (p.363).

As globalization has emerged, the U.S. has been confronted with another gap – the gap between Americans who achieve college degrees and those abroad. The National Center for Higher Education Management Systems claims that to close this gap, the nation’s colleges and universities must increase the number of people earning college degrees each year by more than 37% between now and 2025 (Lumina Foundation, 2007).

The projected gap, nearly 16 million degrees by 2025, “threatens the U.S.’ ability to maintain its economic competitiveness, build a labor force ready to take on high-skill jobs, and close racial and ethnic disparities in earnings and academic success” (Lumina Foundation, 2007). In other words, if the U.S. does not address the need for increased educational spending, attainment, and quality, the problem may become not the fairness of opportunity for some, but the access to opportunity for all Americans.

Education for All, a Product of War

Initiatives to increase access to higher education have historically spiked during and following major wars in the United States. From the Civil War through the last two World Wars in the twentieth century, the United States has seen a shift in focus of higher education, its “Golden Era”, the GI Bill, and changes in funding and expectations from governments. The practice of government-funded higher education began shortly after the end of the Civil War following the land grant acts when state legislatures sought approval ratings through appropriations to agriculture and mechanical colleges (Rudolph, 1990). In the late 1800s, the trend of expanding access of higher education to those beyond the upper class began, first with the help of the first Morrill Act for less wealthy whites and later, with the second Morrill Act which established the historically black colleges and universities (Rudolph, 1990).

During World War II, President Franklin Roosevelt established the first major partnership between institutions of higher education and the federal government, the National Defense Research Committee (NDRC), later renamed the Office of Scientific Research and Development (OSRD). Because of the success of higher education’s contributions to the war effort and the growing American interest in advancing science and technologies, the partnership transcended the end of the war. The second element, which dramatically expanded funding and access to

higher education, came through the G.I. Bill, the veterans' education program. The government had two main interests that drove the introduction of the G.I. Bill. The first was to encourage military participation in the late years of World War II. The second was the use of higher education to provide reentry and rehabilitation for veterans returning from the war.

Unlike today, many colleges were opposed to extra funds and extra students, despite the impact the war had on enrollments. Some believed that expanding access to higher education beyond the wealthy class of Americans would hurt the prestige and quality of a college education. Colleges chose to extend the opportunity of college degree pursuit as they saw fit, but on a national level, higher education became accessible to thousands of Americans for the first time. This was just the beginning of the Golden Era of American Higher Education which brought numerous government programs, a growing trend of funding to higher education institutions in America, the Higher Education Act of 1965 and the National Defense Education Act of 1958 (Goodchild, Lovell, Hines, and Gill, 1997) (Goodchild and Wechsler, 1997). The expansion of government funding, higher education access, growth, and strong admiration for the contributions of colleges and universities lasted until the early seventies when the friendship between colleges and government seemed to end as universities became known less as essential to the war effort and more as "hippie hideouts" (Goodchild, et al, 1997).

Higher Education as a Good and/or for the Good?

Access to educational opportunities has been, and will undoubtedly remain, an issue of hot debate. Such debates surrounding educational access to postsecondary education are often spurred by a single or group of individual experiences as seen in the University of California debates over Affirmative Action admissions policies in the 1990s (Pusser, 2004). However, participation in higher education offers not only private returns, but also public benefits

(Johnstone, 2004). For this reason, public benefits must be considered in university strategic planning and admissions policy decisions. Furthermore, it is imperative that policy makers, both governmental and university, understand those decisions, potential outcomes as well as the long-term financial implications. The state government, individual institutions, state system of higher education, and tax payers must all understand how enrollment management policy decisions will affect them. Each stakeholder must ask and be able to answer how a decision will benefit them now and how it will benefit or hurt them in the long run.

Higher Education in North Carolina

North Carolina is unique from most states in the country in that it includes higher education in its state constitution (See Appendix A). The state boasts an expansive higher education system, which includes 16 public universities, 36 private not-for-profit institutions, 58 community colleges and one public residential high-school for gifted students (The University of North Carolina, 2014). Even in the midst of a changing economy, North Carolina has remained a competitive state, in part, due to the partnerships between government, industry and higher education. For example, NC officials have worked with higher education institutions to recruit new businesses to North Carolina with the promise of training potential employees in its colleges and universities to meet those businesses needs.

Additionally, North Carolina's population is growing at a higher rate than the United States average. A 2005 report published by the Southern Regional Education Board (SREB) projected that North Carolina's population will increase by 1.3 million, or 16 percent by 2014. Current growth trends support this projection as well. From 2000 to 2007, North Carolina's estimated population grew by more than 1 million people or 12.6 percent (U.S. Census Bureau,

2009). Persons from around the globe are moving to North Carolina, a state that consistently is named one of the best places to live and work (Research Triangle Regional Partnership, 2009).

North Carolina is not only attracting a plethora of talent, but also a large number of new residents with little education, primarily Hispanics. College going rates for Hispanics are significantly lower than any other racial group and Hispanics are also the largest growing population in the state. By 2018, Hispanic students are expected to rise from 2 percent to account for 33 percent of the state's public high school students. White students, who represented 68 percent in 2002, will be 43 percent. So, in short, North Carolina is not only facing tremendous growth, but also a drastic change in demographics where the largest group in the population has historically been the least likely to pursue and complete postsecondary degrees.

The University of North Carolina

As state-serving institutions, North Carolina's colleges and universities must be prepared to provide access to the growing number of high school graduates as well as nontraditional students (students over the age of 25 without a bachelor or associate's degree). The University of North Carolina has engaged in long-term enrollment planning to address the population boost, but those plans fall short of what is either efficient or equitable. Equity will is defined as "as involving a redistribution of resources designed to achieve the community's philosophical and ethical standards of fairness" (Paulsen, 2001, p.97). Efficiency occurs when individuals are "charged or taxed in accordance with the marginal benefits they receive from investment in the activity" (Paulsen, 2001, p.112). In relation to the costs of participating in higher education, this principle requires tuition to be "equal to the marginal value that students assign to the private benefits they internalize while the investment of society is equal to the marginal benefits it receives" (Paulsen, 2001, p.112).

In debates over access to higher education, there is often an argument over what defines equality. Whilst this concept is easily debatable, here, *equality* will be referred to in terms of equality of opportunity in accordance with the University of North Carolina's statement on equality. "The University of North Carolina and all of its constituent institutions are committed to equality of opportunity. There shall be no discrimination within the University against applicants, students, or employees on the basis of race, color, religion, sex, age, handicap, or national origin, consistent with the provisions of applicable state and federal law." Furthermore, it is worth noting that the University of North Carolina claims it actively seeks to promote racial integration at each of its constituent institutions. Additionally, since equality of opportunity is a more conservative form of equality, as opposed to equality of outcomes, university policies which inhibit equality may prove even more inequitable to the citizens of North Carolina.

The university system is expected to grow by almost 100,000 students by 2018 (UNC, 2005). However, university planning official's projections for growth are significantly lower than the projected number of college eligible students and consequently, the university will fail to meet the state's needs. University goals and state objectives report a desire to increase the percentage of the total state population with conferred postsecondary degrees, but if the university only plans to grow by 32.89 percent, then it will surely accomplish the opposite. Therefore, North Carolina's leaders and policy maker's must implement a strategy— Otherwise, if the university system denies admission to North Carolina residents, a second-class citizenry will likely emerge.

The second problem with university system at present, in addition to the omission of any statement on plans to or not to admit out of state students, is that the university has identified seven of its institutions as "focus growth institutions". This plan is both inefficient and

inequitable for a few reasons. First and foremost, it is inequitable for potential students who will be limited in college choices and funding opportunities. The seven institutions¹ selected as a part of this initiative are the least selective institutions that also receive the least amount of endowment, state, and federal funds. These are all excellent institutions, my argument is meant in no way to insult the level of quality and education they provide, only that from what we know about college student choice and persistence (Winston, 2003, Porter and Umbach, 2006, Perna, 2004, Titus, 2006, Perna, 2007, etc....) students may be less likely to choose to go to college if their opportunities are increasingly limited. Furthermore, these are the same institutions that receive the least amount of state, federal, and endowment funds and also struggle the most to meet emerging demands for accountability.

This leads into the reason this plan is inequitable for the individual universities. Less competitive students are more likely to need remediation, less likely to bring outside scholarships, less likely to be highly competitive, and less likely to persist in college (Hossler, 2004). Henceforth, the universities who are given less are expected to do more at a higher expense. Current state appropriation trends and strategic plans included in university publications also call for a system with higher accountability. One may argue that this is a set up for failure for focus growth institutions. It is a widening gap where the selective (universities) become stronger and the less selective (universities) become weaker or, at best, fail to strengthen at the same rate.

¹Elizabeth City State University (ECSU), Fayetteville State University (FSU), North Carolina Agricultural and Technical State University (NC A&T SU), North Carolina Central University (NCCU), The University of North Carolina at Pembroke (UNCP), and Winston-Salem State University (WSSU)

As public discourse emerges on enrollment plans, the concern over preservation of quality has arisen at some institutions. For example, at UNC-Chapel Hill (the most selective institution in the public system with the largest endowments, state appropriations and federal grant monies) trustees have called for a conservative response to growth in order to preserve the reputation of the institution. Former Chancellor Moeser likened the challenge facing the UNC system to “a virtual tsunami” for education (UNC Gazette, 2008). The trend across the state is that the most politically powerful and selective institutions seem to be bargaining their way out of the need to educate all eligible North Carolinians in the near future.

However, this concern is shortsighted. I would not dare to argue, given the political context of the state, that the universities should see past their own goals for the greater good. This argument is unnecessary. I am content to argue why this position is a poor choice even if each institution is only thinking of its own interests. In the fight for survival, Hossler (2004) summarizes Bowen’s (1980) view of public higher education finance, “colleges and universities will raise all the money they can, and spend all the money they raise in an unceasing question for power, influence, and prestige” (p.148).

Similarly, Massy (2004) claims, “that competing forces, including the pressures associated with growing marketplace competition, may cloud or confound their [universities’] thinking” (p.32). Institutions may not internalize all of the costs associated from shifting their focus away from their mission. If, in the search for prestige, institutions enroll a student population unreflective of the state population; then the statewide workforce and consequently gross income will decline. Decreased income will result in less revenue (from income taxes) for state appropriations. Therefore, social support and welfare costs will increase and, as they do, current trends suggest less state funds will be appropriated to higher education. Neither

efficiency nor equity will be attainable if institutions continue to pursue self interests by viewing prestige as a primary way to ensure financial soundness. While certain institutions will continue to take home a large ‘piece of the pie’, the size of the pie will shrink, so all institutions may suffer.

The concerns of UNC Chapel Hill trustees and other stakeholders about the preservation of quality during this growth period are unfounded as well. In response to this concern, let us consider Winston’s Model of Peer Effects. Winston (2003) posits that students are not only outputs (a product at graduation), but also inputs into universities where they affect the overall value and perceived value of an institution. In addition, the idea of peer effects presents the idea that students affect the success and learning experiences of those around them. Winston and Zimmerman (2003) found that high-performing students are not adversely affected by going to school with – or even cohabitating with – low-performing students. Those low-performing students, when matched with high-performing students, became high-performing students as well.

In contrast, Winston and Zimmerman (2003) found that in cases where average students were matched with low-performing students, both students became low-performing students. As such, the universities who already have highly competitive students should not pose major concerns over admitting larger numbers of students, regardless of entrance exam scores. However, on a system level, this notion should be of great concern if the growth schools will be the ones charged with admitting the majority of less-competitive and moderately-competitive students. The idea of peer effects is the top reason NC colleges (regional institutions especially) admit and enroll out-of-state and international students – because they can often recruit more competitive students from other states and countries where the higher education system, and

possibly the weather, football or other factors, are not as good. This advantage, nor the immediate out-of-state tuition benefits, overshadows the magnitude of problems the universities will have securing funds in the future if the level of state funds (tax revenue) decline from denying residents the opportunity to participate in higher education.

The University of North Carolina and universities around the globe have identified academic diversity as a mission-based goal. One might attempt to argue to limit out-of-state and international admissions will limit diversity. However, due to historical factors and the masses of persons who move to North Carolina every year for work and to live, North Carolina is home to an extremely diverse population.

Furthermore, if universities reduce nonresident admissions and offer equal opportunity to students to attend all UNC constituent institutions, a greater level of diversity will surely emerge simply because of the demographics of the state's population. In opposition, in the pursuit of prestige, universities may enroll a less diverse student population. While the student population might still be somewhat racially diverse, the likelihood is that there will be less and less Socioeconomic Status (SES) diversity in the student population since students who are high-achieving are also most likely to be high-SES and vice versa (Massey, 2004). It seems as though North Carolina is in dire need of some other resource in order to remedy this issue. Perhaps, the early college model in North Carolina may be a way to solve more than one problem.

The North Carolina Community College System

North Carolina has the third largest community college system in the United States. These colleges enroll nearly one-in-nine citizens every year and are located across the state within a 30-minute commute of any North Carolinian's residence (North Carolina Community Colleges, 2014). The North Carolina Community College System is comprised of 58 colleges which are

governed by the State Board of Community Colleges. This board, along with the UNC Board of Governors and the State Board of Education make up the North Carolina State Education Commission, which is periodically convened by the governor to review the state's education agenda (Gracie, 1998). The State Board of Community Colleges maintains oversight of: statewide policies, allocations of funds to institutions, tuition and fees, degrees awarded and requirements for transfer programs. However, like the universities in the state, North Carolina's community colleges are locally governed by a board of trustees and local administration (Gracie, 1998).

Initiatives and School Re-Designs

Initiatives Changing States or States Changing Initiatives?

The phrase, "initiatives don't change schools – schools change initiatives" is sadly, a frequently heard term among educators. Even more so, a strong correlation can be seen between the turnover of state government officials and the end – and beginning – of educational initiatives. It seems every governor, senator and member of the House of Representatives wants to put his or her name on something. Few seem to question the rapidly changing catchy names for the next educational initiative bound to solve all of the inefficiencies and inequities in our educational system. But how does this happen with minimal scrutiny from taxpayers and educators? To put it simply, so few educational initiatives have been adequately evaluated on large scales in a timely manner.

In 1963, right in the middle of the Civil Rights Movement, the "A Better Chance" (ABC) program was launched. The ABC program gave African-American students from around the country the opportunity to attend some of the nation's most elite prep schools. It was designed to

break down barriers to accessible education for minority youth in an attempt to close the achievement gap. Today, the program is still active, though it was nearly cancelled at one point. In Zweigenhaft's (1993) book, *Blacks in the white establishment?: A study of race and class in America*, a review of the initiative and the reasons it nearly failed is presented. At the time, evaluations of programs on large scales was even more infrequent than today. At the nation's top 23 prep schools, indicators of the program's success were easily found, but the program was not evaluated for strong tangible outcomes. Instead, anecdotal stories, like a program participant who, from humble beginnings in the segregated south, became an executive of AT&T were told to highlight success.

The personal testimonies of students who participated in the program, their achievements, the discrimination they experienced in "the white establishment" and the emotions brought forth by being given "opportunity" while their siblings and neighbors were left behind gave a rich perspective of the program. However, when a single participant, who dropped out of the program, was arrested for violent crimes, the program made the news. Public opinion of the program and its effectiveness was shaped by the instances where the program failed. During such tumultuous times, it was the "newsworthy" stories of the program's failures that shaped the overall evaluation of the program (Zweigenhaft, 1993).

Today, the ABC program still exists. Today though, when demands for accountability have risen dramatically, the evaluation on a large scale of the program's impacts are conducted and its outcomes can be readily found on the initiative's website front page (A Better Chance, 2014). How might the program, which is considered one of the country's largest education access opportunities, might have been further supported if the first 30 years of the program were evaluated with more than the personal testimonies and news headlines? How might the program

have improved at an earlier stage, by conducting a comprehensive assessment of participants' experiences? These are questions that drive researchers today, although not always on the right road.

Another example of the high turnover in educational initiatives can be explored through the program entitled, "Project Bright IDEA". Project Bright IDEA was a collaborative project between the North Carolina Department of Public Instruction (NCDPI) and the American Association of Gifted Children at Duke University (AAGC). The project involved "over 900 kindergarten, first- and second-graders in five Title I schools in North Carolina. The project was implemented in regular classrooms to meet the mandate of the North Carolina General Assembly to close the achievement gap and to nurture under-represented populations for advanced or gifted classes. The results exceeded all expectations and could have an impact on national education policy" (Gayle, 2005).

The positive outcomes of the program were easily seen through rigorous evaluation. However, the implementation of the program failed to be fully assessed. At a meeting of the North Carolina State Board of Education during the summer of 2006, educators and researchers from the initiative gave a presentation. One of the teachers gave her account of the program, and the profound impacts where children, even children with disabilities, scored on par and above the state average. She cautioned the board though. She said her school principal wasn't fully supportive of the program. Ultimately, she said, the dispute led to her departure. She said she believed in the methods of the program and used the teaching pedagogy in the classroom at her new school. She lobbied the board to encourage greater support from principals, which would include time off for training, for the program. Ultimately, despite the positive impacts shown by the study, the decision to support the program seemed to come down to conflicts in daily

operations of the school and the program continued to receive waning support until the project was cancelled in 2009 (Personal Correspondence, July 2006). What could have encouraged support for this initiative? Perhaps a comprehensive evaluation which would have included implementation evaluation?

I served as an unpaid intern in the Office of Governor Michael F. Easley during the summer of 2006. During this time, I was afforded the opportunity to work on numerous pieces of legislation, one of which was the Literacy Coaches Initiative. It was an informative and thrilling experience to see a piece of paper legislation come to life. The initiative was designed to improve literacy of eighth-grade students, provide professional development for teachers, and introduce effective uses of technology in 100 North Carolina schools.

I thought it was revolutionary. I thought it was an exceptional thing to see a one-stone-two-birds program that would potentially improve teacher retention and students' skills in 100 of the lowest performing middle schools in the state. From the inception of the program though, I witnessed (a few) principals and superintendents who were defensive and seemed unwilling to accept money, computers and an additional staff member they wouldn't have to pay for. I thought it was bizarre. During the initiative launch, I heard the protests of these school leaders, "I can't give this many days off to teachers for trainings!" "Who will handle bus duty?" "I will have to hire subs!" (substitute teachers) (Personal Correspondence, 2006). As a young educator, I was shocked at the ways in which (some) educational leaders put the importance of operations over their overarching goal of providing a sound and basic education to all students. What this meant, was that, outcomes of a program cannot be evaluated independently, even if thoroughly. One must include variables for school culture and leadership factors whilst evaluating the outcomes and impacts of programs on students. Two years later, the governor and primary

advocate for the program, changed over and the program quickly lost steam as it was replaced by the next “Education Governor’s” signature programs.

Qualitative Studies

The vast majority of studies related to early college high schools and college readiness program outcomes have been qualitative. Qualitative research provides rich data that helps to lay the foundation for quantitative studies. It explores relationships, meaning, and helps to explain phenomena. Qualitative research seeks to understand why and how things are the way they are, rather than a simple measure of relationships between two variables (Creswell, 1994). However, there are limitations to qualitative research, such as generalizability, which is often needed in major policy decisions.

The foundation for this study has been laid upon the rich studies in recent years, many of which have also been dissertations. Brooks (2011) explored the unique experiences found in early colleges on first-generation students in rural North Carolina. Brooks examined barriers to college, student: teacher relationships and shed light on the impact of the school environment on students. Woodcock and Beal (2013) focused on the support services provided to students at an early college high school in Texas. The interviews from subjects provided great insight for the researchers, but this approach does little for decision-makers – who might assume students may receive parallel support at traditional schools as well. Other studies (Hall, 2008; Warren, 2012; Flores, 2012) have employed more robust methods, but have centered on the study of a few schools or less, whereas this study will examine schools across the entire state of North Carolina.

Dual Enrollment

Dual enrollment programs (DE) are a similar initiative to the early college high school and are also present within the state of North Carolina. They are “collaborative efforts between

high schools and colleges through which high school students (usually juniors and seniors) are permitted to enroll in college courses...” which may or may not count toward degree progress for both high school diplomas and college degrees, but “under both arrangements, students are simultaneously enrolled in high school and college—thus, they are ‘dually enrolled’ in the two institutions (Karp, Calcagno, Hughes, Jeong & Bailey, 2007). Understanding the research available on dual enrollment helps to inform research on early college high schools and other educational initiatives where comparable opportunities and controls exist (i.e. exposure to higher education, rigor of coursework, teaching conditions, etc.). An important contrast between DE programs and ECHS is that participation in DE programs has often historically been limited to high-achieving students.

Dual enrollment Struhl and Vargas’ (2012) study for JFF examined the impact of dual enrollment participation on college attendance, persistence and degree completion of students in Texas. The study also examined whether college outcomes varied by race or socioeconomic status. The study did not, however, consider the community context. One of the issues is that the impact on students of varying SES and race may have been diminished by not accounting for the outcomes of similar students in parallel types of communities. The three research questions for the study were: 1) “Is college-course completion by Texas high school students related to their college success? Does it affect enrolling, persisting in, and completing a degree at a two-year or four-year public college?; 2) does the relationship between dual enrollment and college outcomes vary by race or socioeconomic status?; and 3) does college success vary by the type or number of courses completed by dual enrollees?” (Struhl and Vargas, 2013, p.8).

Karp, Cacagno, Hughes, Jeong and Bailey (2007) conducted a study to examine postsecondary achievement of students in DE programs in New York and Florida. The study

found that DE students were more likely to attain positive short- and long-term educational outcomes, including: high school diplomas, enrollment in higher education, grade point average and persistence through the second year of college. However, the participants in the programs were also more likely to be white, female, and high-achieving while less likely to be of low socio-economic status (SES) or English as a Second Language (ESL). Upon examination of the sub-group analysis, however, the strongest difference of DE versus non-DE students was held among black male students who were first-generation college students. Ultimately, findings suggested positive outcomes towards college degree completion for students, but was limited to the states of New York and Florida and to samples of already high-achieving students in many cases.

Early Colleges

Early colleges are similar to dual enrollment programs in Miller, Fleming and Reed (2013) published a literature review of the research on early colleges, predominantly focused on studies of North Carolina early colleges. Their article reviewed the current research, highlighted selected findings, and suggested gaps in the literature on early colleges. They noted that much of the current research has “focused on the implementation and emerging outcomes of the model” (Miller, Fleming, and Reed, 2013). The majority of the research conducted on early colleges has been from a secondary education perspective and predominantly qualitative. In the SERVE study, student success was operationalized through scores on end-of-course exams (Miller, Fleming, and Reed, 2013).

College Choice.

Much research has focused on the examination of student aspirations over the past few decades. Like most scholarly inquiry in the social sciences, there have been consistent trends in the evolution of the focus and methodology of research on student aspirations towards educational attainment. According to Paulsen (2001), research on college-choice behavior before the 1990's was monopolized by the quantitative paradigm. But since, the qualitative paradigm has emerged as another useful tool often employed to examine student behavior, beliefs and attitudes on the pursuit of higher education. In more recent years, social science researchers have begun to understand the value of both research paradigms employed both independently and simultaneously in the examination of human behavior.

In 1999, Hossler, Schmit, and Vesper published the first book on student aspirations of a nine-year longitudinal study on student aspirations that employed both the qualitative and quantitative paradigms. In their study, Hossler, Schmit, and Vesper examined factors how economic, social, and educational factors affect the decisions students make about postsecondary education and also how those attitudes changed from students' freshman to senior years of high school. This study greatly contributed to the body of knowledge on college choice. However, the study took place in Indiana, a state with minimal racial diversity, so the study was unable to examine or explain what (and how those) factors may vary by race. Additionally, the study included few high-income students who may be affected differently than students from low-income backgrounds. Finally, Indiana has a much smaller higher education system than North Carolina, so Hossler, Schmit, and Vesper's study was unable to examine the effects of frequent exposure to college on student aspirations.

Generally speaking, one of the greatest limitations of aspirational research and its policy implications is that more recent research has found that student aspirations are often inconsistent with student actions. Many students who often say they want to or “aspire to” go to college may not believe they will be able to and often do not actually pursue a postsecondary degree.

Hu and John (2001) built upon the existing body of research and examined the impact of policy shifts in financial aid on persistence in college by different racial/ethnic groups.

Readiness and Achievement.

It is important to examine college readiness and choice to enroll, not as a single decision, but as a process that takes place over many years, often beginning in middle school (Hossler, Braxton, and Coopersmith, 1989). Nora and Cabrera (1992) divided the decision into three stages and identified critical factors and outcomes that outlined the process: predisposition, search, and choice. Cabrera and La Nasa (2000) later supported the, sometimes nonlinear, stages and examined the ways in which they interact with one another. Table 2.1 demonstrates the factors and outcomes supporting the college choice process.

Table 2.1 College-Choice Process: Stages, Factors and Outcomes

<i>Stages</i>	<i>Factors</i>	<i>Outcomes</i>
Predispositions: Grades 7—9	Parental Encouragement and Support Parental Saving for College Socioeconomic Status Parental Collegiate Experiences High School Academic Resources Student Ability Information about College	Reading, Writing, Math and Critical Thinking Skills Career and Occupational Aspirations Educational Aspirations Enrollment in College-Bound Curriculum
Search: Grades 10—12	Parental encouragement and support Educational aspirations Occupational aspirations Socioeconomic status Saliency of potential institutions Student ability High school academic resources	Listing of tentative institutions Narrowing list of tentative institutions Securing information on institutions
Choice: Grades 11—12	Educational aspirations Occupational aspirations Socioeconomic status Student Ability Parental encouragement Perceived institutional attributes (Quality, campus life, majors, availability, distance) Perceived ability to pay (Perceived resources, perceived cost)	Awareness of college expenses and financial aid Awareness of institutional attributes and admissions standards Attaining scholastic aptitudes and attributes Perceived support from family and friends Institutional commitment Submission of applications Preregistration Attendance Application for financial aid

Note 1. (Cabrera, p.6, 2000)

Cultural factors.

Since an argument has been made that there are unique factors in the culture and infrastructure of North Carolina and will be included in the analysis, it was necessary to examine what research, if any, had been previously conducted on this issue specific to the state of North Carolina. Rasheed and Saunders (2009) also recognized the unique culture of a population included in North Carolina's demographic makeup, Appalachian Americans. Using Social Cognitive Career Theory (SCCT), they examined the factors that could potentially be used to

predict the career aspirations of high school students from Appalachia. The findings indicated that this special population might be positively affected by specialized policy initiatives targeted towards increasing college-going behaviors. This study was also one of few, which has examined factors affecting rural students whereas much of the literature on college choice either focuses on urban areas or simply comparisons between rural and urban areas.

Theories Linked to the Study

Perna's (2006) model is inclusive of Human Capital Theory and McDonough's notion of "organizational habitus". "Hossler, Braxton, and Coopersmith (1989) and Paulsen (1990) agreed that two theoretical perspectives are useful for guiding research on college access and choice: an economic model of human capital investment and a sociological model of status attainment" (Perna, 2006, p. 105). Pierre Bourdieu (1984) first introduced the idea that students' decision to attend college is greatly impacted by the environment in which they are raised. McDonough (1997) later expanded on the notion of "organizational habitus".

The aforementioned theories are incorporated into the primary theory used in this study. Perna's (2006) model of college choice and access which draw from four major disciplines: 1) Psychology, 2) Sociology, 3) Economics, and 4) Education/Organization (Perna and Thomas, 2008; Valentine, et al., 2009). Although many education researchers agree that a more comprehensive approach, like the Perna model, may lead to a more comprehensive understanding of the issues at hand, minimal studies have been conducted to test them.

In the same way that Perna's model challenges researchers to examine the issue at hand from a broader perspective, previous studies have taken a wide-eye approach to the impact of high school programs on student success. The early college literature (Edmunds, 2010; Miller, et. al., 2013; Struhl and Vargas, 2012; Born, 2006, etc.) has primarily focused on the impact of a

particular program without consideration of existing pre-college programs in schools. Gullatt and Jan's (2003) study of supplemental pre-college program impact on underrepresented students (also using McDonough's habitus) examined successful elements of programs where great gains in student outcomes were made. Similarly, a strong comparison of experiences that prepare students for college and impact the choice process should be made with the high school type, advanced placement programs, and other elements designed to prepare students for college.

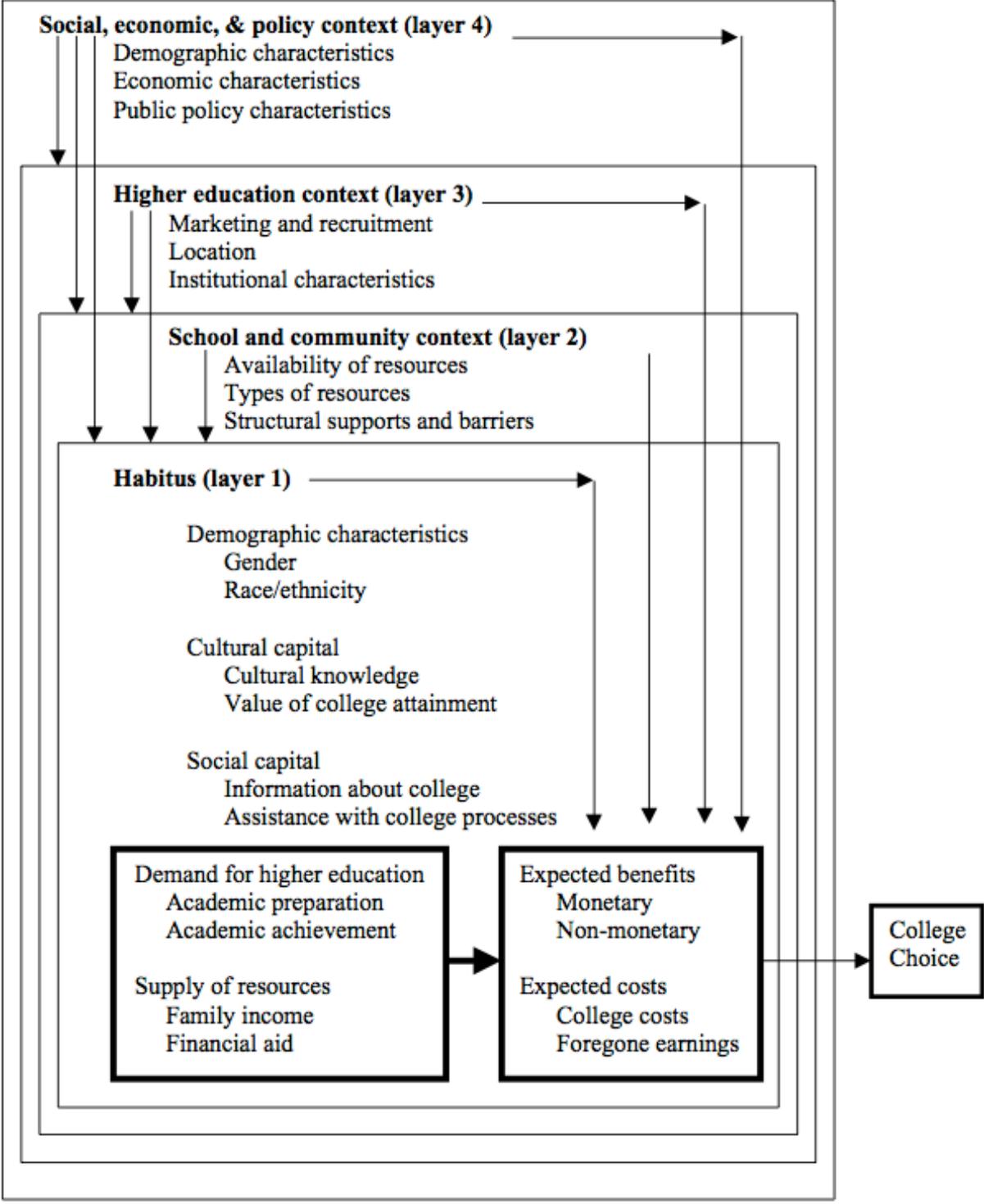


Figure 2.1 Perna's (2006) Proposed Conceptual Model of Student College Choice and Access

Summary of the Literature Review

The review of the literature began with a survey of the landscape of education as an applied field, its relevance to economies, and efforts to move education forward in the state of North Carolina. Theories developed and tested through previous studies were reviewed and gaps in the literature were identified. Criteria for inclusion in the review of the literature were presented and laid the framework for the study design which will be described in the following chapter.

CHAPTER 3

Methods

Introduction

This chapter outlines the design and methodology used to address the research questions posed by this study. The first section begins with a discussion of the design, followed by a review of the datasets and sample incorporated into this study. It provides an overview of how the data was collected by the North Carolina Department of Public Instruction (NCDPI) (which is managed by the NCERDC) and this researcher. The chapter includes a description of the variables included in the analysis and presents the rationale for the selection of variables. The data analysis section covers assumptions, handling of missing data, reliability for the data sources used in the study, and the construction of the final dataset. Additionally, a discussion of statistical techniques used to answer the two research questions is presented which includes an overview of logistic regression. Limitations for the study are presented. Finally, the chapter concludes with an overall summary of the research design and methodology.

Research Question

As aforementioned, the research question is: Do Habitus, School and Community, Higher Education, Social, Economic, and Policy contexts affect North Carolina high school graduates' likelihood to attend four-year colleges and universities?

Research Design

This study used a non-experimental correlational causal-comparative design to examine if and how the early college model may affect students; to provide information on the specific elements that were part of the intervention strategy and report details about resource utilization; to link existing evidence of success to college going behaviors (because of the unique early

college model); to examine college going behaviors of at-risk students with the financial aspect minimized as much as possible; and to study the effects of a unique program on a large scale, through a quantitative paradigm.

While the proposed models used to examine indicators of student success found in the literature (i.e. Perna and Thomas, 2006) employed hierarchical linear modeling (HLM), this study used logistic regression. According to Hair, Black, Babin, Anderson, and Tatum, “logistic regression is a specialized form of regression that is formulated to predict and explain a binary categorical variable rather than a metric dependent measure” (2006, p.275). The technique explores the relationship of multiple predictor variables and a dependent variable. The aim of this study was to explore the relationships of student-, school-, and community-level data to predict college-going behaviors. Predictor variables were both continuous and categorical. Logistic regression was chosen because the technique accommodated the inclusion of multiple independent (categorical and continuous) variables in a model to predict a categorical outcome (going to college).

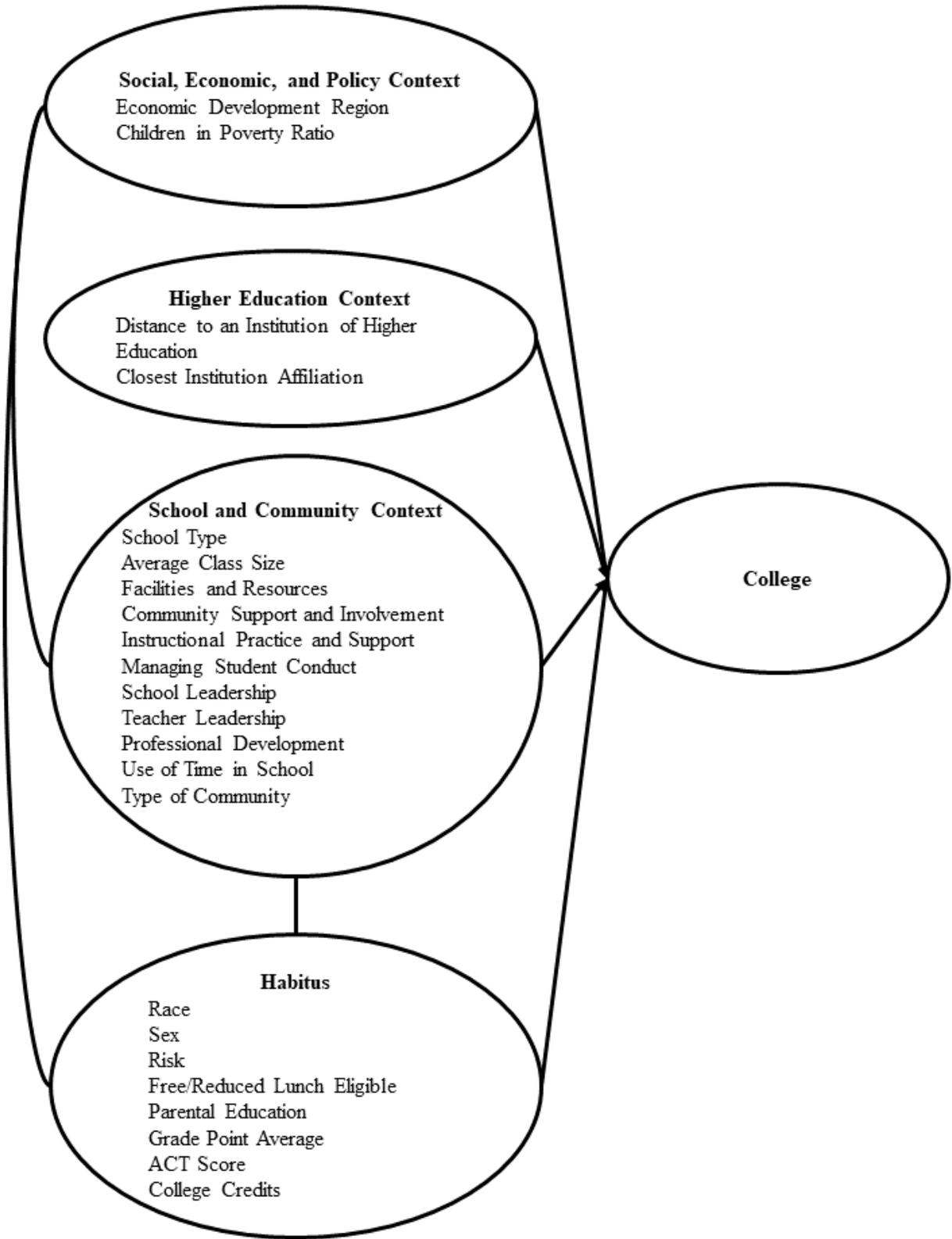


Figure 3.1 Conceptual Model

Dataset and Instrumentation

The data used in this study was acquired from multiple sources. Community, institutional and student level data collected by NCDPI and compiled and housed by the North Carolina Educational Data Research Center (NCEDRC) was used as well as publicly available data through the US Census and the National Center for Education Statistics (NCES). Finally, data collected through the 2014 North Carolina Teacher Working Conditions Survey (NCTWC), administered by the New Teacher Center (NTC), formerly the Center for Teaching Quality (CTQ), was used in this study. Students had a key identifier to connect across datasets and census and geographic data was joined based on addresses in the student level data.

North Carolina Educational Data Research Center

The great majority of the data used in this study is housed at the North Carolina Educational Data Research Center (NCEDRC). NCEDRC, established in 2000, has a partnership with the North Carolina Department of Public Instruction (NCDPI). It manages the state's data on public schools, teachers and students and serves as a liaison to researchers who conduct studies designed to improve the quality of primary and secondary education in the state of North Carolina (NCEDRC, 2014). Data obtained from the NCEDRC included: high school type, student demographics and academic records, school/institutional variables, and the outcome variable, student plans following high school. Geocoded addresses for high schools were also available through the NCEDRC. Using geospatial analysis software (Arc GIS), each school was mapped to an economic development region and assigned to student level cases in the dataset. Distance from the high school to the closest four-year, not-for-profit institution of higher education was calculated and added as well.

NCERDC Instrumentation

The data acquired from NCERDC are administrative records collected from schools/districts by the North Carolina Department of Public Instruction (NCERDC, 2014). In each codebook for a set of files, the processes used to collect the data were described to a varying degree (See Appendices B through F).

North Carolina Teacher Working Conditions Survey

The North Carolina Teacher Working Conditions Survey (NC TWC), administered by the New Teacher Center, “is an anonymous statewide survey of licensed school-based educators to assess teaching conditions at the school, district and state level. First administered in 2002 as part of the Governor's Teacher Working Conditions Initiative, it is conducted biennially...” “The results of this survey are one component of the on-going process for collaborative school and district improvement plans. Results are also used as artifacts in the educator and administrator evaluation instruments in our state”. (New Teacher Center, 2014). The purpose of the survey was to examine the culture and resources provided to schools from the perspective of educators.

North Carolina Teacher Working Conditions Survey Instrumentation

The NC TWC is administered online and employs passwords to prevent ballot box stuffing. The survey measures eight constructs for teachers which have been tested for reliability and validity: 1) time, 2) facilities and resources, 3) community support and involvement, 4) management of student conduct, 5) teacher leadership, 6) school leadership, 7) professional development, and 8) instructional practices and support (New Teacher Center, 2014).

Following administration of the survey in 2014, results were compiled and reported based on the school where teachers were employed when they participated in the survey, so school results will be mapped to the institution attended by students in the dataset for this study. School-

level data was publicly available through the NCERDC for schools with a minimum of a 40% response rate and five respondents. For the 2014 survey, 27,631 educators at high schools and special schools (85.3 percent and 72.2 percent respectively) in North Carolina participated and approximately 97 percent of schools met the minimum requirement for data availability aforementioned (New Teacher Center, 2014).

Individual items included in the constructs from the Teacher Working Conditions Survey are listed in Table 3.1. Use of time in school asked teachers about the ways they spend their time. Facilities and resources asked teachers about access to technology, office equipment, internet, and the physical environment of the school. Community support and involvement included items about family involvement and community support for the school. Student conduct included items related to the policies and practices. Teacher leadership measured teacher empowerment and involvement in the strategic direction of the school. School leadership included items about the administration of the school, teacher assessment, and use of data to inform decision-making. Professional development included various items related to the types of professional development afforded to teachers in the school. Instructional practices and support included items related to assessments, teaching attitudes, alignment with Common Core, and teachers' beliefs about students' outcomes.

Table 3.1 Items on the Teacher Working Conditions Survey

Construct
Use of Time in School (1 = Strongly disagree: 5 = Strongly agree)
Class sizes are reasonable such that teachers have the time available to meet the needs of all students.
Teachers have time available to collaborate with colleagues.
Teachers are protected from duties that interfere with their essential role of educating students.
Efforts are made to minimize the amount of routine paperwork teachers are required to do.
The non-instructional time provided for teachers in my school is sufficient.
Teachers are allowed to focus on educating students with minimal interruptions.
Teachers have sufficient instructional time to meet the needs of all students.

Table 3.1 (continued)

Construct
Facilities and Resources (1 = Strongly disagree: 5 = Strongly agree)
Teachers have sufficient access to appropriate instructional materials.
Teachers have sufficient access to instructional technology, including computers, printers, software and internet access.
Teachers have access to reliable communication technology, including phones, faxes and email.
Teachers have sufficient access to office equipment and supplies such as copy machines, paper, pens, etc.
The reliability and speed of Internet connections in this school are sufficient to support instructional practices.
Teachers have adequate space to work productively.
The school environment is clean and well maintained.
The physical environment of classrooms in this school supports teaching and learning.
Teachers have sufficient access to a broad range of professional support personnel.
Community Support and Involvement (1 = Strongly disagree: 5 = Strongly agree)
Parents/guardians are influential decision makers in this school.
This school maintains clear, two-way communication with the community.
This school does a good job of encouraging parent/guardian involvement.
Teachers provide parents/guardians with useful information about student learning.
Parents/guardians know what is going on in this school.
Parents/guardians support teachers, contributing to their success with students.
Community members support teachers, contributing to their success with students.
The community we serve is supportive of this school.
Management of Student Conduct (1 = Strongly disagree: 4 = Strongly agree)
Students at this school understand expectations for their conduct.
Students at this school follow rules of conduct.
Policies and procedures about student conduct are clearly understood by the faculty.
School administrators consistently enforce rules for student conduct.
School administrators support teachers' efforts to maintain discipline in the classroom.
Teachers consistently enforce rules for student conduct.
The faculty work in a school environment that is safe.
Teacher Leadership (1 = Strongly disagree: 5 = Strongly agree)
Teachers are recognized as educational experts.
Teachers are trusted to make sound professional decisions about instruction.
Teachers are relied upon to make decisions about educational issues.
Teachers are encouraged to participate in school leadership roles.
The faculty has an effective process for making group decisions to solve problems.
In this school we take steps to solve problems.
Teachers are effective leaders in this school.
School Leadership (1 = Strongly disagree: 5 = Strongly agree)
There is an atmosphere of trust and mutual respect in this school.
The school leadership consistently supports teachers.
The school improvement team provides effective leadership at this school.
The faculty and staff have a shared vision.

Table 3.1 (continued)

Construct
Teachers are held to high professional standards for delivering instruction.
Teacher performance is assessed objectively.
The procedures for teacher evaluation are consistent.
Teachers receive feedback that can help them improve teaching.
The school leadership facilitates using data to improve student learning.
The faculty are recognized for accomplishments.
Teachers feel comfortable raising issues and concerns that are important to them.
Professional Development (1 = Strongly disagree: 5 = Strongly agree)
Sufficient resources are available for professional development in my school.
An appropriate amount of time is provided for professional development.
Professional development offerings are data driven.
Professional learning opportunities are aligned with the school's improvement plan.
Professional development is differentiated to meet the individual needs of teachers.
Professional development deepens teachers' content knowledge.
Teachers have sufficient training to fully utilize instructional technology.
Teachers are encouraged to reflect on their own practice.
In this school, follow up is provided from professional development.
Professional development provides ongoing opportunities for teachers to work with colleagues to refine teaching practices.
Professional development is evaluated and results are communicated to teachers.
Professional development enhances teachers' ability to implement instructional strategies that meet diverse student learning needs.
Professional development enhances teachers' abilities to improve student learning.
Instructional Practices and Support (1 = Strongly disagree: 4 = Strongly agree)
State assessment data are available in time to impact instructional practices.
Local assessment data are available in time to impact instructional practices.
Teachers use assessment data to inform their instruction.
The curriculum taught in this school is aligned with Common Core Standards.
Teachers work in professional learning communities to develop and align instructional practices.
Provided supports (i.e. instructional coaching, professional learning communities, etc.) translate to improvements in instructional practices by teachers.
Teachers are encouraged to try new things to improve instruction.
Teachers are assigned classes that maximize their likelihood of success with students.
Teachers have autonomy to make decisions about instructional delivery (i.e. pacing, materials and pedagogy).
State assessments provide schools with data that can help improve teaching.
State assessments accurately gauge students' understanding of standards.
Teachers believe almost every student has the potential to do well on assignments.
Teachers believe what is taught will make a difference in students' lives.
Teachers require students to work hard.
Teachers collaborate to achieve consistency on how student work is assessed.
Teachers know what students learn in each of their classes.

*Table 3.1 (continued)***Construct**

Teachers have knowledge of the content covered and instructional methods used by other teachers at this school.

U.S. Census**National Center for Education Statistics**

In order to calculate the proximity of schools to institutions of higher education within North Carolina, the National Center for Education Statistics online College Navigator tool was used. Institutions included were member campuses of the University of North Carolina and the North Carolina Independent Colleges and Universities. The criteria for inclusion in this study was: membership in either the University of North Carolina or NCICU, 4-year, baccalaureate, not-for-profit, campus housing availability, and not a primarily associate's degree-granting institution (NCES, 2015) See Appendix E.

Population and Sample**Participants**

The participants in this study were students in North Carolina public high schools during the 2012-2013 and 2013-2014 school years. There were roughly 100,000 students per grade per year in the full database. The selection of participants for this study was dependent on the availability of complete secondary data. Individual files were acquired from the NCERDC, cleaned then merged to complete the study. After files were cleaned and merged, there were 267,279 potential participants. Individuals who graduated from Innovative, Magnet, Alternative, and Charter schools and records missing from the graduation files were removed. Once all files were merged and cleaned, only 43 percent of the records matched across all files with complete information (N= 115,298) (See Table 3.1). 11,963 records were present, but with missing unique

identifiers (mastid), and could not be matched across files. Records with partial missing data (e.g., missing parental education) were retained and records recoded as missing. Finally, 164,146 participants were included in the study.

Table 3.2 Missing Data

Missing Data	Frequency	Percent	Cumulative Percent
No	115,298	43.14%	43.14%
Yes	147,790	55.29%	98.43%
Yes (ACT score only, Took SAT)	4,191	1.57%	100.00%
Total	267,279	100.00%	

Students at Early College High Schools.

Students who were enrolled in early college high schools represented a wide variety of academic and personal backgrounds. At many of the early colleges, admissions decisions were based on a lottery after excluding students with a record of school violence. The sample population of early college high school students for the study was up to 100 students per grade/per school.

Variables in the Study

Independent variables.

The independent variables are the latent variables: Habitus, school and community context, higher education context, and social, economic, and policy context.

Habitus

Habitus included the following observed variables: race, sex, risk, level of parental education, family income, grade point average, ACT score, and college credits. Race (race) was a categorical variable renamed from the NCERDC (ETHNIC) and included: Asian, Black, Hispanic, Multiracial, Native American, Alaskan Native, Native Hawaiian or Pacific Islander, and White. Sex (sex) was a binary variable labeled one for female. Risk was a binary categorical variable which included: none identified, and student identified under Section 504 and limited

English Proficient Status (LEP). Previous research has also included these items which were unavailable as considerable risk factors, plus: limited access to technology (student does not have access to a computer at home), grade repetition (grades six through eight), low socio-economic status (0:1 whether the student is eligible for free/reduced lunch), pregnant, and/or a poor record of attendance. (Astin, 1982; Kaufman and Bradby, 1992; Tabb, 1991; Chen and Kaufman, 1997; Malnarich, 2005; McCabe, 2003; Walsh, 2003, Bulger and Watson, 2006). A student who classifies under Section 504, as defined by federal law is “an individual with a disability who: (i) has a mental or physical impairment that substantially limits one or more major life activity; (ii) has a record of such an impairment; or (iii) is regarded as having such an impairment” [34 C.F.R. §104.3(j)(1)]. “Section 504 is a part of the Rehabilitation Act of 1973 that prohibits discrimination based upon disability. Section 504 is an anti-discrimination, civil rights statute that requires the needs of students with disabilities to be met as adequately as the needs of the non-disabled are met [34 C.F.R. §104.3(j)(1)].

Parental education (pared) was a categorical variable including: no college, some college/associate’s degree, bachelor’s degree, and graduate/professional degree. Family income was based on whether a student is eligible for free and/or reduced lunch (frl). There was no available variable for actual income.

While being from a rural community is an indicator or risk for students, this element was captured in the community context variable.

Also within the Habitus layer were academic performance variables. Achievement, or evidence of achievement, is a latent construct comprised of: the student’s ACT score, the student’s cumulative unweighted grade point average (GPA), and earned college credits. GPA was a score on a 4.0 scale, captured during the senior year and is cumulative and unweighted.

College credits completed was initially computed as a linear variable for the number of courses students had successfully completed with a grade of C or higher through advanced placement (AP) courses, dual enrollment, at a college/university, or other programs, but was later dummy coded 0=no college credits and 1=college credits earned.

Table 3.3 Habitus Variables, Response Options, Reference Group and Coding Categories

Variable	Response Options	Reference Group	Coding Categories
Race	Asian	White	1 = Asian
	Black		2 = Black
	Hispanic		3 = Hispanic
	Multi-Racial		4 = Multi-Racial
	Native American/ Hawaiian/ Pacific Islander		5 = Native American/ Native Hawaiian/ Pacific Islander
	White		6 = White
Risk	None	None	0 = No
	Section 504/ Limited English Proficient Status		1 = Yes
Sex	Female	Male	0 = Male
	Male		1 = Female
Free or Reduced Lunch Eligible (frl)	No	No	0 = No
	Reduced		1 = Reduced
	Free		2 = Free
Parent Education Level (pared)	No College	No College	1 = No College
	Some College/Less than a Bachelor Degree		2 = Some College/ Less than a Bachelor Degree
	Bachelor Degree		3 = Bachelor Degree
	Advanced Degree		4 = Advanced Degree
Grade Point Average	Scale 0:4		
ACT Score	Scale 3:36		
College Credits	No	No	0= No
	Yes		1 = Yes

School and Community Context

School and community context included: school type, average class size, the teacher working conditions constructs, and the type of community. The type of school is traditional or early college (high school type). It is a dummy variable (S_TYPE) coded (by the National Center for Educational Statistics) 1 for early college (ECHS). Size was defined by the average class size in English II during 2014. Data was acquired from the North Carolina Report Cards Resources for Researchers Profile Metrics Table (NC Public Schools, 2014) and matched to the existing data set using school identifiers. Data was unavailable for a total of 3,143 records at 66 schools, including one traditional high school and four early college high schools (See Table 3.3).

Table 3.4 Number of Records with Missing Average Class Size

Type of School	Frequency	Percent	Cumulative Percent
Traditional	208	6.62%	6.62%
ECHS	493	15.69%	22.30%
Innovative	394	12.54%	34.84%
Charter	82	2.61%	37.45%
Alternative	1,654	52.62%	90.07%
Magnet	312	9.93%	100.00%
Total	3,143	100%	100.00%

School funding, defined as the total funding per student, which includes state, local, federal, and all other funding dollars for the school, is no longer reported for use by researchers on the school level, only by LEA. As such, the North Carolina Teacher Working Conditions Survey construct, Facilities and Resources, was used to indicate the level of resources by school. Finally, teacher working conditions variables were composite scores of findings from the North Carolina Teacher Working Conditions Survey (NCTWC). The NCTWC collects data from teachers across the state and findings are coded and then collapsed into scales on the following measures: 1) time, 2) facilities and resources, 3) community support and involvement, 4) management of student conduct, 5) teacher leadership, 6) school leadership, 7) professional

development, and 8) instructional practices and support. Responses included for each school included teachers (N=83,208). Responses from school administrators (e.g., principals, non-teaching staff) were removed.

When merged with student-level data, 21 schools failed to match (See Table 3.5).

Additionally, records matched to schools (N=19) with fewer than five responses to the Teacher Working Conditions Survey were removed from the dataset (See Table 3.6).

Table 3.5 Schools Unmatched with Teacher Working Conditions Survey Data

Type of School	Number of Schools	Number of Records
Traditional	1	207
ECHS	1	24
Innovative	2	969
Charter	7	405
Alternative	8	129
Magnet	2	30
Total	21	1,764

Table 3.6 Schools with fewer than five responses to the Teacher Working Conditions Survey

Type of School	Number of Schools	Number of Records
ECHS	9	916
Innovative	2	252
Charter	2	91
Alternative	6	362
Total	19	1,621

Type of Community was a variable obtained through publicly available school data and included whether a school was located in a rural area, town, suburb or city.

Higher Education Context

Higher education context included the distance from a student's school to the closest four-year not-for-profit institution of higher education and the affiliation of that institution.

Proximity to an institution of higher education was defined as the number of driving miles to a baccalaureate degree granting institution within the state of North Carolina. The affiliation of the

institution was either a member institution of the University of North Carolina (public) or the North Carolina Independent Colleges and Universities (private).

Social, Economic, and Policy Context

The Social, Economic, and Policy context included: the child poverty ratio and the economic development region. The Child Poverty Ratio (PCTPOVERTY) was defined as the percent of the school district's population aged five to 17 living below the poverty line in 2014.

Since the 1980s, the State of North Carolina has employed regionalism strategies to advance statewide goals by: serving as a conduit for investment, facilitating regional capacity-building, conducting strategic regional planning, and marketing to create jobs and investments. On a regional level, policies are developed, initiatives are designed, funded, and implanted (NCLEG, 2008).

As such, economic development region (SBEREG) was a categorical variable, which included the eight economic development regions of North Carolina (Metropolitan statistical area). This variable was included in consideration of the demographic makeup of the state. This element may help to increase the reliability of the findings in regards to race because of the composition of the state. North Carolina is a southern state where wealth and opportunity has historically been reserved for whites, but there are two important considerations to be made. First, North Carolina is the second most rural state in the country – meaning that the majority of the population resides in rural areas as opposed to cities. In contrast, Alaska is considered one of the most urban states, not because of the number of cities, but because of the percent of the population that resides in Anchorage. The eight economic development regions draw lines between areas that share similar characteristics, resources, cultural norms, etc. (See Figure 3.2).

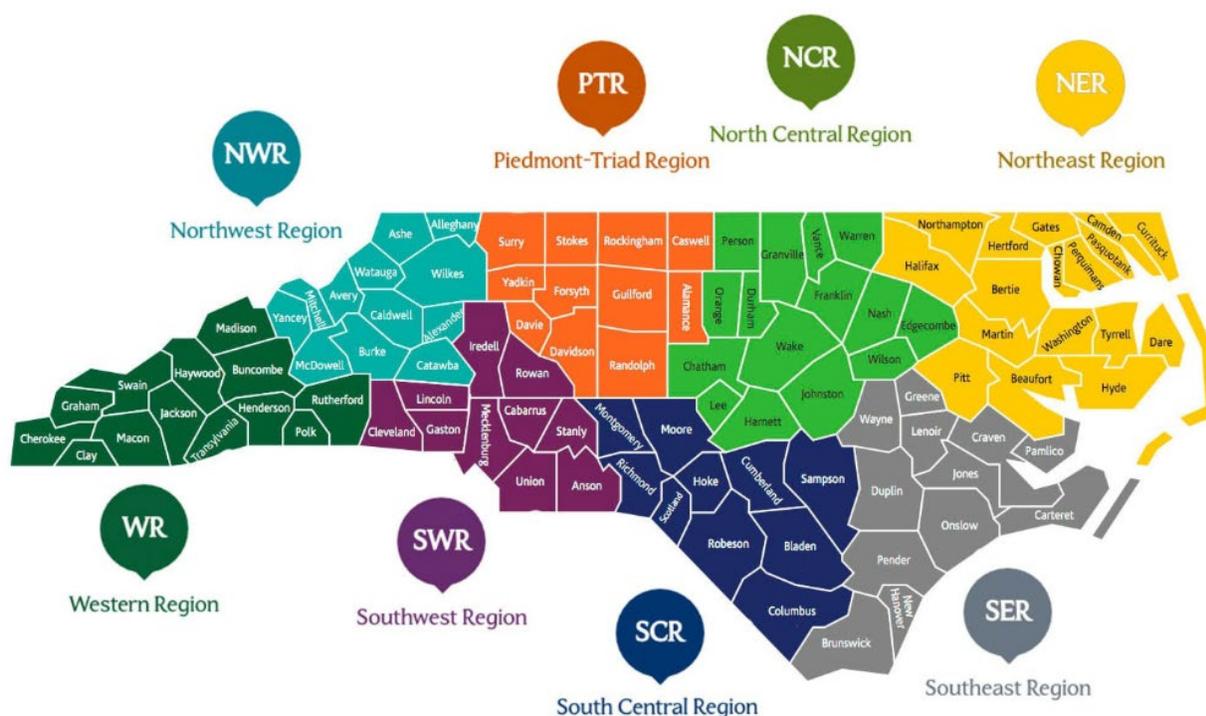


Figure 3.2 North Carolina Economic Development Regions

The racial composition varies a great deal as well as the distribution of wealth. For example, a larger number of the population who lived in the Western and Northwest Regions are Hispanic/Latinx, White, or Native American. This part of the state has a higher number of low-income white students than other parts of the state. In the Sandhills and in the Northeast regions, a larger proportion of the population is Black. Failure to include this variable in the model may alter the significance of the impact of the early college model on populations by race and would limit the generalizability of the findings. The variance in college-going behaviors, or statewide achievement gap between white students and students of color, may be blurred by the differences in student achievement in different parts of the state.

Dependent variable.

The dependent variable is college, whether a student attended a four-year institution of higher education in the year following high school graduation. It was a dummy variable coded

1= Yes 0=No. It was recoded from the variable BOUND_FOR_CODE from the NCERDC GPA files (See Appendix E).

Data Collection: Construction of the Dataset

In order to build the dataset for the study, multiple files provided by the NCERDC needed to be combined. Following is a description of the procedures and protocols used. All NCERDC files were originally SAS files, but were converted to STATA files using STATTransfer. Procedures utilized the NCERDC's technical reports, Technical Report #2 "Creating a Longitudinal Student Database" and Technical Report # 4 "Creating Public Use Student Data Files" (NCERDC, 2015).

Habitus: Student-Level Data

Masterbuild files.

The initial data files used in this study were the masterbuild files (MBuild) obtained from the NCERDC. "At the end of each year, the North Carolina Department of Public Instruction (NCDPI) provides the North Carolina Education Research Data Center (NCERDC) with information on all students in membership in grades 3 – 12 at the time of testing." (NCERDC, 2011). The datasets include: "student demographics; End of Grade and End of Course test scores, attendance, achievement levels and change scale scores, dates, and exemption status; and days in membership. Most students have only one record, but some students have multiple records." (Masterbuild Codebook, 2014). Each file year had more than 1,000,000 records of data. This file was linked to other NCERDC student data files using a students' master ID number and, as appropriate, the school code. "In March 2014, the State Board of Education adopted a new five-level achievement scale to better report students' career and college readiness. This scale

replaces the previous four-level scale. The 2013-14 school year is the first year that student proficiency was reported under these five achievement levels (NCERDC, 2014).

The masterbuild files for 2011, 2012, 2013 and 2014 were merged and superfluous variables were removed to reduce the size of the file. Students with no mastered (mastid) were removed also. Students in grades kindergarten through eighth grade were removed.

Table 3.7 Original NCERDC Masterbuild Files

Year	Files	N Records
2011	MB_2011_PUB.sas7bdat	1,161,922
	ACCDEMOPUB2011.sas7bdat	2,960,029
2012	MB_2012_PUB.sas7bdat	1,165,021
	ACCDEMOPUB2012.sas7bdat	2,971,096
2013	PCAUDIT_PUB2013.sas7bdat	1,140,280
	ACCDEMOPUB2013.sas7bdat	2,994,517
2014	PCAUDIT_PUB2014.sas7bdat	1,149,983
	ACCDEMOPUB2014.sas7bdat	3,020,195

Records for students in elementary schools and middle schools were removed from the working files. Based on the recommendations made in the NCERDC's technical reports, duplicates were removed keeping the most current record (NCERDC, 2003).

The data file used for the study was added to the existing 2014 Masterbuild file, PCAUDIT_PUB2014, with variables in this study retained. In the 2014 file, there were 16,060 duplicate based on mastid. Duplicate records were merged and removed based on the following variables: mastid, grade, sex, ethnic, lep, in_fds, aig, eds, leamem, schlcode, frl and eds. Missing data was merged and duplicates were removed variable/by variable. If records mismatched based on schlcode or leamem, the records where the student was present on the first day of the spring semester was retained. After removing all duplicate records, there were 447,367 records in the 2014 file. The same procedure was followed for files from the previous years.

Table 3.8 2012 Masterbuild File Records by Grade

Grade Level	<i>n</i>	Percent
09	131,352	30.20
10	111,862	25.72
11	99,978	22.99
12	90,747	20.87
13	971	.22
Total	434,910	100.00

Table 3.9 2013 Masterbuild File Records by Grade

Grade Level	<i>n</i>	Percent
09	125,985	28.62
10	113,002	25.67
11	100,999	22.94
12	98,973	22.48
13	1,283	.29
Total	440,242	100.00

Table 3.10 2014 Masterbuild File Records by Grade

Grade Level	<i>n</i>	Percent
09	128,092	28.63
10	115,346	25.78
11	102,612	22.94
12	99,932	22.34
13	1,385	.31
Total	447,367	100.00

GPA.

The second dataset to be merged included the GPA files for 2012, 2013 and 2014. Data included information on 12th grade student GPA, class rankings, high school completion, and post-graduation plans. Whenever possible, these data are linked to other NCERDC student-level datasets, including End of Grade and End of Course testing. 2012 had 95,593 records. 2013 had 96,531 records. 2014 contained 89,349 records (total = 281,473 records). These three files were merged and duplicate records were removed, keeping the most recent and complete record. Records without a master ID were temporarily assigned an ID during the merge process and were later removed. Records where students were not issued a diploma were removed.

According to NCERDC, schools may have reported students to this file who were not actually part of the graduating class (NCERDC, 2015, personal correspondence). In the 2013 GPA file, one high school (Sanderson High) reported all students in the GPA file. These students made up the majority of records removed. Upon merging the 2012, 2013, and 2014 files, there were 95 duplicate graduation records. Duplicate records were merged keeping the most recent and complete record. Records were updated to include missing data.

The dataset was cleaned to match variable values across years. Variables with different labels and values were merged (rank_number, ninth_entry_date, diploma_met_date, program_desc). Diploma Type categorizations changed in 2014. Types from 2012 and 2013 were matched accordingly. For example, in 2012 and 2013 there were four different kinds of career prep diplomas. All were recoded simply to career prep. String variables were encoded where possible as well. The final GPA file included 279,680 records representing students who graduated 2012-2014.

The GPA file was merged to the Masterbuild file based on mastid.

Table 3.11 Result of Mbuild/GPA File Merge

Result	<i>n</i> of obs.
not matched	420,033
from master	416,902
from using	3,131
matched	276,549

ACT files.

According to NCERDC, “Beginning in the 2012-13 school year, every 11th grader in North Carolina public schools takes the ACT college entrance exam as part of the North Carolina Standard Course of Study. These files contain scale scores and other academic indicators from the administration of the ACT exam in the 2013-14 academic year” (NCERDC, 2014). In the 2014 file, there were 93,194 records and in 2013, there were 91,855 records. 8,040 records in

2014 had no mastid and 1,415 in 2013. Records were given a temporary id for merging and cleaning. 398 records were duplicates in 2014 and 504 in 2013. The files were merged, keeping the most recent record with the highest ACT composite score (Composite_Score), which resulted in a total 184,390 records. The ACT file was then added to the master dataset. 174,613 records matched to the master and missing data was updated where available (See Table 3.12).

Table 3.12 Result of Mbuild/ACT File Merge

Result	<i>n</i>
not matched	531,746
from master	521,969
from using	9,777
matched	174,613

End-of-Grade.

Reporting of parents' highest level of educational attainment was available in multiple data files obtained from the NCERDC. It was listed as available in the Mbuild (2006, 2007, 2008) and End-of-Grade (EOG) for 2006. The Mbuild files contained few records where this information was actually recorded and so they were not used. The EOG 2006 was comprised of separate files for grades three through eight. These files were merged and then appended to the working database using the unique student identifiers (mastid). Duplicates and unmatched records were removed and missing data was updated where possible.

Table 3.13 Original NCERDC 2006 EOG Files

Grade	File	<i>n</i> Records
3	EOG3PUB06.sas7bdat	104,808
4	EOG4PUB06.sas7bdat	102,831
5	EOG5PUB06.sas7bdat	103,615
6	EOG6PUB06.sas7bdat	106,772
7	EOG7PUB06.sas7bdat	106,774
8	EOG8PUB06.sas7bdat	107,968

Table 3.14 Result of Mbuild/EOG File Merge

Result	<i>n</i> of obs.
not matched	674,992
from master	375,143
from using	299,849
matched	331,216

After merging all the datasets together, keeping student with missing mastid, there were a total of 706,359 records. In order to reduce the dataset to students who would have been eligible members of the classes of 2013 and 2014, the following steps were taken:

- Records where students were in grades 9 and 12 in 2012 and unmatched to the files: ACT, GPA, and EOG were removed.
- Records where students were in grades 9 and 10 in 2013 and unmatched to the files: ACT, GPA, and EOG were removed.
- Records where students were in grades 9, 10, and 11 in 2014 and unmatched to the files: ACT, GPA, and EOG were removed.
- To account for data entry errors prior to record removal, frequencies of bdate and date_enter_hs were run.

In order to ensure the correct records were kept for the study, a new dataset was built, file-by-file, keeping all students who would have been eligible to graduate between 2013 and 2014.

Table 3.15 Source Files of Unmatched Records

Master Comparison	Keep - Mb	Keep GPA	Keep ACT	possible	missing m	Keep ACC	Total
In New Data Only	3,489	999	1	26,440	0	0	30,929
In Old Data Only							4,722
Matched in Both Data	224,116	1,424	10,273	258	995	6	237,072
Total	227,605	2,423	10,274	26,698	995	6	268,001

There were 45 records remaining with multiple high school graduation dates.

Table 3.16 Summary of Outcomes from MASTID Merges

Keep	Freq.	Percent
Graduated	184,195	68.82%
Reached 12th but No Grad	18,346	6.85%
Took ACT, no graduation	7,851	2.93%
Possible Dropout/Transfer	42,602	15.92%
Did not Reach 12th, Still Enrolled	2,535	0.95%
Missing ID	12,059	4.51%
Withdrawn	31	0.01%
Total	267,677	100.00

The 31 students who, through file merges were identified as withdrawn, were removed.

Students with Missing Master Identifiers (MastID)

As files were merged, a total of 12,059 students were present in at least one dataset.

Following is a summary of the characteristics of students with missing mastid. All records of students with missing mastid were missing race. 564 schools had students with missing mastid.

Table 3.17 Source Files of Records with Missing MastID

Source File Count of Missing Mastid	<i>n</i>
MBuild Files	992
ACT Files	9,440
SAT Files	0
GPA Files	1,627
Total	12,059

Table 3.18 Cohort of Missing MastID Records

Class Year	<i>n</i>
2013	176
2014	9,032
Missing	2,851
Total	12,059

Table 3.19 School Type of Missing MastID Records

Type of High School	<i>n</i>	Percent	Cum.
Traditional	10,090	83.67	83.67
Early College	412	3.42	87.09
Innovative Redesign	301	2.50	89.58
Charter	260	2.16	91.74
Alternative	198	1.64	93.38
Magnet	798	6.62	100.00
Total	12,059	100.00	100.00

Table 3.20 Diploma Type of Missing MastID Records

Type of Diploma	Freq.	Percent	Cum.
Certificate	21	0.80	0.80
College/Tech Prep	2,410	92.06	92.86
Career	109	4.16	97.02
OCC	22	0.84	97.86
DO NOT USE VOC	56	2.14	100.00
Total	2,618	100.00	100.00

Table 3.21 ACT Files and Records Missing MastID

Took the ACT	Freq.	Percent	Cum.
Unknown	2,619	21.72	21.72
Yes	9,440	78.28	100.00
Total	12,059	100.00	100.00

Table 3.22 Sex of Missing MastID Records

Sex	Freq.	Percent	Cum.
Female	2,969	24.62	24.62
Male	3,457	28.67	53.29
Missing	5,633	46.71	100.00
Total	12,059	100.00	100.00

Table 3.23 High School Graduation of Records with Missing MastIDs

Graduated from High School (GPA Files)	Freq.	Percent	Cum.
Unknown	10,432	86.51	86.51
Yes	1,627	13.49	100.00
Total	12,059	100.00	100.00

Transcripts.

Student-level transcript files were acquired from the NCERDC for 2009 – 2014. The original files included “information from students’ high school transcripts, including courses taken, credits, and course grades. These data are linked to other NCERDC student-level datasets” (See Appendix E). Courses were identified as college-courses by course code, course description according to the Comprehensive Articulation Agreements, where taken, and a passing grade of C or better. The Comprehensive Articulation Agreements (CAA) (North Carolina Community Colleges, 2015). Advanced Placement (AP), International Baccalaureate (IB) courses, and college courses taken online where a student earned a grade of C or better were also coded as college-courses.

School and Community Data

Schools were matched to student-level data using unique school identifiers assigned by the NCDPI. Schools with no students in the master data were removed from the dataset (N=25). Schools with no students in the study are listed in Table 3.24. Status denotes whether a school should have had students in the data set based on grades offered and whether the school was open between 2013 and 2014. The type of school was listed in multiple categories in the NCES and the NCERDC data files.

Table 3.24 Schools with No Students in Master Data

School	School Name	School Type	Highest Grade Offered (2014)	Status
650384	A H Snipes Academy of Arts/Des	Magnet		
60701	Avery High Viking Academy	Innovative	9	Expected
10311	Career Technical Education Center	Alternative	12	
260347	Cumberland International ECHS	ECHS	9	Expected
998703	Dobbs School	Alternative		
996730	Foothills Correctional Institution	Alternative		
340703	Jacket Academy at Carver High	Innovative		
550330	LCST	Alternative		
998728	Lenoir Youth Development Center	Alternative		
60F000	Metrolina Reg Scholars Academy	Charter		
410579	Middle College at UNCG	ECHS	9	Expected
996732	Morrison Correctional Institution	Alternative		
996734	NC Correctional Inst for Women	Alternative		
491305	NF Woods Adv Tech and Arts Center	Alternative	12	
660334	Northampton County Alternative School	Alternative	12	
996736	Polk Correctional Institution	Alternative		
32N000	Research Triangle High School	Charter	12	
770352	Richmond Co Transitional	Alternative		
780331	Robeson Co Career Ctr	Alternative	NG	
320700	Southern School of Engineering	Innovative	12	
410569	STEM Early College at NC A&T	ECHS	9	Expected
920582	Wake NCSU STEM ECHS	ECHS	10	Expected
996739	Western Youth Institution	Alternative		
290389	Yadkin Valley Regional Career Academy	Innovative	9	Expected

Data from the 2014 Teacher Working Conditions Survey was acquired through NCERDC and incorporated into the data set. A description of the data set was included in the codebook provided by NCERDC:

“In the spring of 2002, Governor Easley and the North Carolina Professional Teaching Standards Commission (NCPTSC) conducted a survey of all teachers, principals, and other licensed personnel in public and charter schools. This survey, sponsored by the Office of the Governor, was conducted for a fifth time in 2010 with 88.8 percent of teachers completing the survey. The percent of teachers completing the survey in the following years; 2012=86 percent, 2014=88.6 percent.

Designed to measure perceptions of the school environment, these surveys include questions about time management, facilities and resources, leadership, personal empowerment, mentoring, and opportunities for professional development.

The 2010 North Carolina TWC Survey was based on the state's 2004, 2006 and 2008 instruments with some revisions. Additional survey constructs were included to address conditions related to Managing Student Conduct, Community Support and Involvement, and Instructional Practices and Support. While some questions in these new constructs are new to the survey, others have been taken from a redistribution of existing survey questions as their focus is better aligned in these new areas. Additionally, response options were changed to a 4-point scale (Strongly disagree, Disagree, Agree, Strongly agree) and included a "Don't Know" option. The instrument remained stable from 2010 to 2012 with some realignment in 2012.

The NCERDC merged this file with the National Center of Education Statistics Public School Universe (the most recent year available) data to add some measures of school context and validate WCS survey data. Individual teacher records cannot be linked to teacher information in other datasets. However, researchers can link to schools and districts." (NCERDC, 2015).

The 2014 TWC survey included 93,178 respondents from 2,580 schools in North Carolina. Records from schools that failed to match to the working data and whose highest grade level offered was less than 12 were removed. Schools were matched to the working dataset and all other records (non-high schools) were removed.

Table 3.25 Highest Grade Offered and Number of Survey Respondents in Original File

Highest Grade Offered	<i>n</i>	Percent	Records Removed
01	189	0.21%	189
02	722	0.79%	722
03	718	0.79%	718
04	1,684	1.84%	1,684
05	37,512	41.04%	37,482
06	2,411	2.64%	2,387
07	261	0.29%	261
08	21,071	23.05%	20,903
09	189	0.21%	66
10	279	0.31%	0
11	238	0.26%	0
12	26,084	28.54%	--
KG	37	0.04%	37
Total	91,395	100.00%	

Table 3.26 Highest Grade of School and Matches with Master Data (Number of Survey Responses)

Highest Grade Offered	<i>n</i> Unmatched	<i>n</i> Matched	Total
05	0	30	30
06	0	24	24
08	0	168	168
09	0	123	123
10	0	279	279
11	0	238	238
12	112	25,972	26,084
Total	112	26,834	26,946

Higher Education Context Data

Higher education context data was acquired from the NCERDC and public data available through the National Center for Education Statistics. In order to create the variable, Proximity to an institution of higher education, an excel file of all non-profit, 4-year baccalaureate degree granting institutions was created using NCES's College Navigator tool. This tool was used to create a profile of institutions of higher education which included physical addresses, campus setting, campus housing, student population, number of undergraduate students, graduation rate, transfer-out rate, net price*, and IPEDS IDs. An affiliation variable was created to discern

between the University of North Carolina public institutions and the North Carolina Independent Colleges and Universities.

Another excel file of all NC public high schools was created based on publicly available data through the North Carolina Department of Public Instruction. It included school addresses and type. These files were uploaded to a web map created using ArcGIS Online. Using ArcGIS's analysis features, the driving distance to the closest NC institution of higher education was calculated. The results were exported to Excel and added to the dataset in STATA. The remaining institution-level variables were acquired from NCERDC files and together all were matched to student-level data using school identifiers (See Figure 3.3).

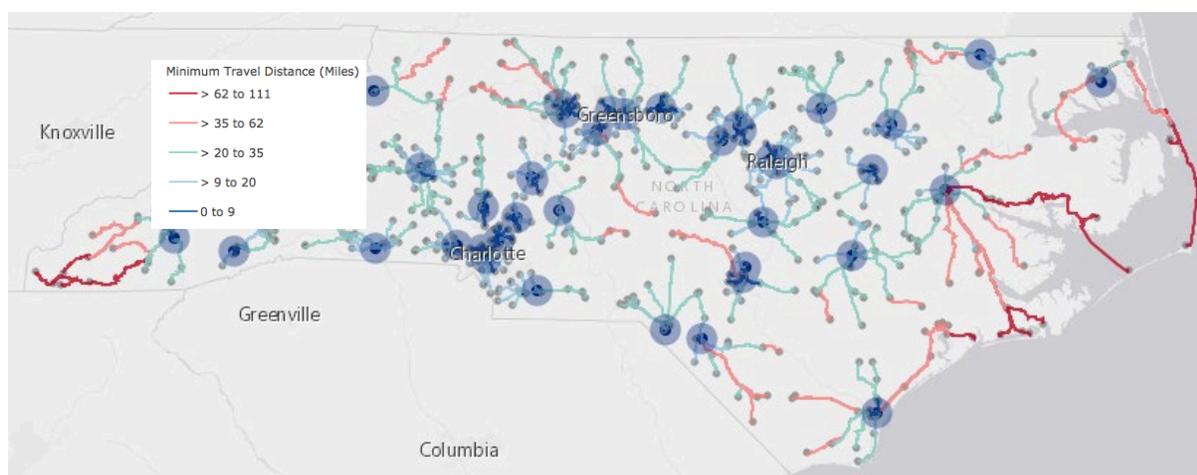


Figure 3.3 The Roads to University in North Carolina

Social, Economic, and Policy Data

Social, economic, and policy data included the economic development region and the ratio of children aged 5 to 17 living in poverty. Because school district-level community indexes were last compiled by NCERDC in 2004, the codebook was obtained from NCERDC and used as a guideline to create variables these for community-level data.

Procedure and Data Analysis

Logistic Regression was the method chosen for this study. Logistic regression is used when there are more than one independent (predictor) variables which are both continuous and categorical and the dependent (outcome) variable is dichotomous (UCLA, 2015) (Hair, Black, Babin, Anderson, and Tatham, 2006). In logistic regression, it does not matter if the predictor variables are not evenly distributed. The steps of logistic regression include gathering the data, model estimation, and assessment of the *-2LL difference* (Hair, Black, Babin, Anderson, and Tatham, 2006).

To answer the research question, do Habitus, School and Community, Higher Education, Social, Economic, and Policy contexts affect North Carolina high school graduates' likelihood to attend four-year colleges and universities, a logistic regression was used. The model was run to discern whether there was a statistically significant difference in students' likelihood to attend college based on factors across the four contexts. Attention was given to the variance of college-going rates based on institutional characteristics. The relationship between the community, school, and student contexts was examined.

First the data was gathered. Due to the size of the files, the software program, STATA, was used to clean and merge the data. SPSS was used to conduct all analyses. Then, in accordance with the needed steps of logistic regression identified by Hair, Black, et. al. (2006), the data was screened. Missing data and outliers were identified, and correlations were run to test for multicollinearity. Multicollinearity is “the extent to which a variable can be explained by the other variables... as it increases, it complicates the interpretation of the variate because it is more difficult to ascertain the effect of any single variable, owing to their interrelationships” (Hair, et. al., 2006, p.2). While there were significant relationships between all variables, all of the

correlations were less than .9, the acceptable threshold (Hair, et. a.l., 2006), so all variables were retained. See Table 3.27.

Then the coefficients were estimated. Equivalent models were considered. Three tests comprise the inferential statistics which were considered, according to Peng and So (2002), they are: the likelihood ratio, Score, and Wald tests” (p.42). The model were re-specified and evaluated. The model fit was assessed using difference in the $-2LL$ values between models.

Table 3.27 Correlations of Variables Used in the Model to Answer the Research Question.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
A	1	.106**	.051**	-.231**	.359**	-.235**	.513**	.494**	.412**	.069**	.068**	.141**	.033**	.030**	.030**	-.011**	.006*	.022**	-.003	.125**	-.111**	-.006*	-.034**	-.117**
B	.106**	1	-.020**	-.108**	-.011**	.016**	.176**	.045**	.077**	.013**	-.010**	.001	.006**	.004	.012**	.008**	.006**	.008**	.012**	-.001	-.005*	-.003	-.008**	.007**
C	.051**	-.020**	1	-.071**	.274**	-.409**	.302**	.347**	.170**	-.087**	.106**	.211**	.207**	.142**	.065**	.056**	.150**	.124**	.131**	-.140**	.144**	-.051**	.123**	-.114**
D	-.231**	-.108**	-.071**	1	-.095**	.125**	-.213**	-.245**	-.222**	-.006*	-.026**	-.042**	-.039**	-.036**	-.029**	-.021**	-.029**	-.025**	-.027**	.013**	-.011**	.003	-.011**	.006**
E	.359**	-.011**	.274**	-.095**	1	-.441**	.364**	.462**	.290**	.042**	.144**	.229**	.050**	.031**	-.005*	-.048**	.016**	.022**	-.040**	.157**	-.126**	-.019**	-.036**	-.215**
F	-.235**	.016**	-.409**	.125**	-.441**	1	-.321**	-.372**	-.237**	-.010**	-.145**	-.251**	-.129**	-.094**	-.055**	-.013**	-.088**	-.086**	-.043**	-.056**	.007**	.038**	.041**	.209**
G	.513**	.176**	.302**	-.213**	.364**	-.321**	1	.657**	.473**	-.001	.048**	.172**	.135**	.107**	.071**	.029**	.084**	.071**	.082**	-.049**	.055**	-.024**	.037**	-.086**
H	.494**	.045**	.347**	-.245**	.462**	-.372**	.657**	1	.495**	.047**	.141**	.277**	.126**	.084**	.054**	-.003	.071**	.083**	.039**	.117**	-.067**	-.043**	-.016**	-.226**
I	.412**	.077**	.170**	-.222**	.290**	-.237**	.473**	.495**	1	.060**	.041**	.142**	.105**	.085**	.068**	.047**	.078**	.080**	.070**	.027**	-.034**	-.027**	.028**	-.077**
J	.069**	.013**	-.087**	-.006*	.042**	-.010**	-.001	.047**	.060**	1	-.174**	.047**	-.030**	-.116**	.036**	-.025**	-.010**	.028**	-.015**	-.063**	-.196**	-.126**	-.104**	-.178**
K	.068**	-.010**	.106**	-.026**	.144**	-.145**	.048**	.141**	.041**	-.174**	1	.236**	.072**	.047**	-.035**	-.017**	.023**	.011**	-.141**	.181**	-.097**	-.090**	-.010**	-.295**
L	.141**	.001	.211**	-.042**	.229**	-.251**	.172**	.277**	.142**	.047**	.236**	1	.646**	.520**	.559**	.457**	.637**	.634**	.445**	.166**	-.036**	-.096**	-.057**	-.274**
M	.033**	.006**	.207**	-.039**	.050**	-.129**	.135**	.126**	.105**	-.030**	.072**	.646**	1	.670**	.740**	.619**	.822**	.778**	.727**	-.234**	.221**	-.063**	.050**	-.020**
N	.030**	.004	.142**	-.036**	.031**	-.094**	.107**	.084**	.085**	-.116**	.047**	.520**	.670**	1	.679**	.655**	.664**	.664**	.685**	-.127**	.191**	.042**	.096**	-.047**
O	.030**	.012**	.065**	-.029**	-.005*	-.055**	.071**	.054**	.068**	.036**	-.035**	.559**	.740**	.679**	1	.800**	.802**	.808**	.801**	-.122**	.153**	-.063**	-.024**	.057**
P	-.011**	.008**	.056**	-.021**	-.048**	-.013**	.029**	-.003	.047**	-.025**	-.017**	.457**	.619**	.655**	.800**	1	.770**	.773**	.738**	-.139**	.116**	-.021**	.063**	.085**
Q	.006*	.006**	.150**	-.029**	.016**	-.088**	.084**	.071**	.078**	-.010**	.023**	.637**	.822**	.664**	.802**	.770**	1	.946**	.785**	-.178**	.170**	-.101**	.033**	-.008**
R	.022**	.008**	.124**	-.025**	.022**	-.086**	.071**	.083**	.080**	.028**	.011**	.634**	.778**	.664**	.808**	.773**	.946**	1	.804**	-.110**	.105**	-.105**	.026**	-.019**
S	-.003	.012**	.131**	-.027**	-.040**	-.043**	.082**	.039**	.070**	-.015**	-.141**	.445**	.727**	.685**	.801**	.738**	.785**	.804**	1	-.215**	.219**	-.022**	.103**	.104**
T	.125**	-.001	-.140**	.013**	.157**	-.056**	-.049**	.117**	.027**	-.063**	.181**	.166**	-.234**	-.127**	-.122**	-.139**	-.178**	-.110**	-.215**	1	-.388**	.062**	-.017**	-.285**
U	-.111**	-.005*	.144**	-.011**	-.126**	.007**	.055**	-.067**	-.034**	-.196**	-.097**	-.036**	.221**	.191**	.153**	.116**	.170**	.105**	.219**	-.388**	1	.160**	-.058**	.220**
V	-.006*	-.003	-.051**	.003	-.019**	.038**	-.024**	-.043**	-.027**	-.126**	-.090**	-.096**	-.063**	.042**	-.063**	-.021**	-.101**	-.105**	-.022**	.062**	.160**	1	-.101**	.164**
W	-.034**	-.008**	.123**	-.011**	-.036**	.041**	.037**	-.016**	.028**	-.104**	-.010**	-.057**	.050**	.096**	-.024**	.063**	.033**	.026**	.103**	-.017**	-.058**	-.101**	1	.047**
X	-.117**	.007**	-.114**	.006**	-.215**	.209**	-.086**	-.226**	-.077**	-.178**	-.295**	-.274**	-.020**	-.047**	.057**	.085**	-.008**	-.019**	.104**	-.285**	.220**	.164**	.047**	1

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

A. Went to College B. Sex C. Race D. Risk E. Parental Education F. Free/Reduced Lunch G. GPA H. ACT Score I. College Credits J. Type of School K. Average Class Size L. Community Support and Involvement M. Managing Student Conduct N. School Facilities and Resources O. Instructional Practice and Support P. Professional Development Q. School Leadership R. Teacher Leadership S. Use of Time in School T. Type of Community U. Distance to IHE V. Closest Type of IHE W. Economic Development Region X. Child Poverty Ratio

Missing Data

As aforementioned, only 43 percent of the records had complete data following the merging and cleaning of data. Prior to removing cases with excessive missing data, Chi-square tests were run to discern whether patterns existed in the records with missing information for: sex, race, free/reduced lunch, limited English proficient, Section 504, parental education, high school type, and plans post-high school (college or not). Men were slightly more likely to have missing data. Non-White students were more likely to have missing data. Cases with missing data were less likely to go to college, more likely to be on free/reduced lunch, more likely to have a disability (Section 504), more likely to be or have been limited English proficient, have parent(s) with lower levels of education, and more likely to have attended a non-traditional high school (e.g., alternative) ($p < .05$).

Summary of Methodology

This chapter began with an overview of the design and methodology used to address the research questions posed by this study. A discussion of the design was provided, followed by a review of the datasets and sample incorporated into this study. It provided an overview of how the data was collected by the North Carolina Department of Public Instruction (NCDPI), the North Carolina Community College System (NCCCS), and this researcher. The chapter included a description of the variables included in the analysis and presented the rationale for the selection of variables.

The data analysis section covered assumptions, handling of missing data, reliability for the data sources used in the study, and the construction of the final dataset. Additionally, a discussion of statistical techniques used to answer the two research questions was presented

along with the steps to conduct a logistic regression. Limitations for the study were presented. In the next chapter, the findings will be presented.

CHAPTER 4

Findings

The chapter provides the analysis of data and findings. The chapter is divided into four sections; one section for each of the research questions, and a final section for a summary of the findings and analysis.

Research Question

The data analysis and findings from the study were organized based on the following question that guided the study: Do Habitus, School and Community, Higher Education, Social, Economic, and Policy contexts affect North Carolina high school graduates' likelihood to attend four-year colleges and universities?

Descriptive Analysis

Demographics

Table 4.1 provides the descriptives of students' post-graduation plans (college or not). Of the participants in the final sample, 45.3% intended to enroll in a four-year college or university in the fall following graduation from a North Carolina public traditional or early college high school.

Table 4.1 Postsecondary Plans

Postsecondary Plans	<i>n</i>	%
Went to 4-Year College/University		
No	89,846	54.7%
Yes	74,300	45.3%
Total	164,146	100.0%

Table 4.2 below provides the student-level demographics of the final study participants, including: race, sex, identified risk, college credits earned in high school, whether a student was

eligible for free and/or reduced lunch, the highest level of education attained by a parent/guardian.

Table 4.2 Habitus Categorical Descriptives

Variable	No College		College		Total		
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	
Race							
Asian	1,629	37.9%	2,667	62.1%	4,296	2.6%	
Black	23,644	56.0%	18,554	44.0%	42,198	25.7%	
Hispanic	11,803	73.1%	4,335	26.9%	16,138	9.8%	
Multi-Racial	2,803	52.9%	2,518	47.1%	5,348	3.3%	
Native American/ Native Hawaiian/ Pacific Islander	1,592	61.8%	982	38.2%	2,574	1.6%	
White	48,348	51.7%	45,244	48.3%	93,592	57.0%	
Sex							
Male	49,086	60.0%	32,713	40.0%	81,799	49.8%	
Female	40,760	49.5%	41,587	50.5%	82,347	50.2%	
Risk							
No	72,363	50.4%	71,297	49.6%	143,660	87.5%	
Yes	17,483	85.3%	3,003	14.7%	20,486	12.5%	
Free or Reduced Lunch Eligible							
No	43,624	45.0%	53,314	55.0%	96,938	59.1%	
Reduced	6,323	60.6%	4,104	39.4%	10,427	6.4%	
Free	39,899	70.3%	16,882	29.7%	56,781	34.6%	
Parental Education							
No College	37,409	70.9%	15,337	29.1%	52,746	32.1%	
Some College/Less than a Bachelor Degree	17,038	57.3%	12,701	42.7%	29,739	18.1%	
Bachelor Degree	10,008	32.1%	21,207	67.9%	31,215	19.0%	
Advanced Degree	1,141	16.7%	5,704	83.3%	6,845	4.2%	
<i>Missing</i>					43,601	26.6%	
College Credits Earned							
No	59,490	76.0%	18,757	24.0%	78,247	47.7%	
Yes	30,356	35.3%	55,543	64.7%	85,899	52.3%	
Total					164,146		

School- and community-level categorical variables are provided in Table 4.3, including the type of school and distance to an institution of higher education.

Table 4.3 School and Community Context Descriptives

Variable	No College		College		Total		
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	
Type of School							
Traditional	88,107	55.3%	71,218	44.7%	159,325	97.1%	
Early College High School (ECHS)	1,739	36.1%	3,082	63.9%	4,821	2.9%	
Type of Community							
Rural	48,898	60.1%	32,494	39.9%	81,392	49.6%	
Town	7,136	59.0%	4,951	41.0%	12,087	7.4%	
Suburb	7,240	54.2%	6,114	45.8%	13,354	8.1%	
City	26,572	46.4%	30,741	53.6%	57,313	34.9%	
Total						164,146	

Table 4.4 provides the descriptives for the higher education context variables, including: distance in miles to a four-year institution of higher education and the affiliation of the closest four-year institution of higher education.

Table 4.4 Higher Education Context Descriptives

Variable	No College		College		Total		
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	
Distance to an Institution of Higher Education (miles)							
0 to 9	31,470	49.8%	31,738	50.2%	63,208	38.5%	
>9 to 20	30,140	53.0%	26,695	47.0%	56,835	34.6%	
>20 to 35	20,078	64.0%	11,273	36.0%	31,351	19.1%	
>35 to 62	6,945	65.8%	3,610	34.2%	10,555	6.4%	
>62	1,213	55.2%	984	44.8%	2,197	1.3%	
Closest IHE Affiliation							
NCICU	60,991	54.8%	50,367	45.2%	111,358	67.8%	
UNC	28,855	54.7%	23,933	45.3%	52,788	32.2%	
Total						164,146	

Table 4.5 shows the categorical community-level variables assigned to cases in the study, including the economic development region.

Table 4.5 Social, Economic, and Policy Context Variable Descriptives

Variable	No College		College		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Economic Development Region						
North Central	16,986	49.3%	17,456	50.7%	34,442	21.0
Northeast	5,309	58.7%	3,729	41.3%	9,038	5.5
Southeast	9,930	61.5%	6,218	38.5%	16,148	9.8
Sandhills	9,392	56.0%	7,373	44.0%	16,765	10.2
Piedmont Triad	15,926	53.9%	13,635	46.1%	29,561	18.0
Southwest	19,577	52.4%	17,788	47.6%	37,365	22.8
Northwest	6,880	63.4%	3,973	36.6%	10,853	6.6
Western	5,846	58.6%	4,128	41.4%	9,974	6.1
Total	164,146					

Table 4.6 provides descriptives of the ordinal and continuous variables, including: (student-level) ACT score, grade point average, (school-level) average class size, Teacher Working Conditions scores, and (community-level) child poverty ratio.

Table 4.6 Ordinal and Continuous Variable Descriptive Statistics

Variable	<i>n</i>	Mean	SD	Min	Max
Habitus					
ACT Score	140,409	18.83	5.144	3	36
Grade Point Average (GPA)	161,576	2.8360	.73847	.05	4.00
School and Community Context					
Average Class Size	163,949	21.37	3.464	7	32
Community Support and Involvement	164,146	3.0669	.21852	2.27	3.71
School Facilities and Resources	164,146	3.0078	.23972	2.36	3.91
Instructional Practice and Support	164,146	2.8670	.14576	2.44	3.73

Table 4.6 (continued)

Variable	<i>n</i>	Mean	SD	Min	Max
Professional Development	164,146	2.9252	.17664	2.35	3.93
School Leadership	164,146	3.0428	.23941	2.28	3.99
Teacher Leadership	164,146	3.0086	.24931	2.14	3.98
Managing Student Conduct	164,146	2.8440	.32084	2.02	3.99
Use of Time in School	164,146	2.7070	.25524	2.08	3.89
Social, Economic, and Policy Context					
Child Poverty Ratio	164,146	22.7259	6.73622	9.40	43.80

Research Question: Impact of Habitus, School and Community Context, Higher Education Context, and Social, Economic, and Policy Context on College-Going Behaviors

To answer the research question, do Habitus, School and Community, Higher Education, Social, Economic, and Policy contexts affect North Carolina high school graduates' likelihood to attend four-year colleges and universities, a logistic regression was conducted. Variables included in the models to answer the question were: race, sex, risk, free/reduced lunch eligible, parent education, GPA, ACT score, college credits, school type, average class size, Teacher Working Conditions Survey constructs, type of community, distance to an institution of higher education, closest institution of higher education affiliation, economic development region, and percent of the population aged 5 to 17 in poverty (by LEA).

Logistic regression results are presented in tables following. Four models are presented. The dependent variable in each was whether or not a student attended college following graduation from high school. Yes was equal to 1 if the student attended a four-year institution of higher education following graduation from a North Carolina public traditional or early college

high school. All other reported plans were coded 0. Each of the four models include different blocks of independent variables based on 1) Habitus, 2) school and community characteristics, 3) institution of higher education characteristics, and 4) social, economic, and policy characteristics.

The parameter codings for categorical variables are provided in Table 4.7. The analysis used blocks in SPSS to understand the elements that predict college-going behaviors. The logistic regression used the enter method for each block. Cases with missing data (N=73,786) were removed, leaving 105,424 cases in the models. Block 1 included: race, sex, risk, free/reduced lunch eligible, parental education, grade point average, ACT score, and whether or not the students obtained college credits in high school (1=Yes) where race used deviation as the contrast method. "Deviation contrasts compare each group other than the excluded group to the unweighted average of all groups. The value for the left out group is then by definition the negative of the sum of the given parameter estimates" (Nichols, 1997). In this instance, white was the excluded group since it was the largest category within race. Sex was an indicator (1=Female). Risk was an indicator (1=Yes). Free/reduced lunch eligible was coded 0 = No as the indicator and parental education where 1= No College was the indicator. It also included students' unweighted grade point average (GPA), ACT score, and college credits where 1=Yes.

Block 2 included school and community variables: type of school (1=ECHS), average class size, facilities and resources, community support and involvement, instructional practice and support, managing student conduct, school leadership, teacher leadership, professional development, use of time in school, and the type of community (indicator 1=rural).

Block 3 included the higher education context: distance where 0 to 9 miles was the indicator and affiliation of the closest institution of higher education where 1=UNC Public institutions. Block 4 included the social, economic, and policy context: economic development

region where the North Central Region was used as the benchmark with the deviation contrast and the percent of children aged 5 to 17 in poverty. A Confidence Interval of 95% was used for the modeling. The cut point was .5.

Table 4.7 Categorical Variable Codings for Logistic Regression

	<i>n</i>	Parameter coding						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
Economic Development Region								
North Central	19,056	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00
Northeast	6,134	1.00	.00	.00	.00	.00	.00	.00
Southeast	10,309	.00	1.00	.00	.00	.00	.00	.00
Sandhills	10,895	.00	.00	1.00	.00	.00	.00	.00
Piedmont Triad	20,851	.00	.00	.00	1.00	.00	.00	.00
Southwest	23,237	.00	.00	.00	.00	1.00	.00	.00
Northwest	7,984	.00	.00	.00	.00	.00	1.00	.00
Western	6,958	.00	.00	.00	.00	.00	.00	1.00
Race/Ethnicity Federal Reporting Category								
Asian	2,089	1.00	.00	.00	.00	.00		
Black	26,019	.00	1.00	.00	.00	.00		
Hispanic	8,075	.00	.00	1.00	.00	.00		
Multi-Racial	3,337	.00	.00	.00	1.00	.00		
Native American/Hawaiian/ PI	1,681	.00	.00	.00	.00	1.00		
White	64,223	-1.00	-1.00	-1.00	-1.00	-1.00		
Distance to IHE								
0 to 9	38,838	.00	.00	.00	.00			
>9 to 20	36,166	1.00	.00	.00	.00			
>20 to 35	22,142	.00	1.00	.00	.00			
>35 to 62	6,843	.00	.00	1.00	.00			
>62	1,435	.00	.00	.00	1.00			

Table 4.7 (continued)

	<i>n</i>	Parameter Coding						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
Parental Education								
No College	43539	.00	.00	.00				
Some College	26377	1.00	.00	.00				
Bachelor Degree	29005	.00	1.00	.00				
Advanced Degree	6503	.00	.00	1.00				
Type of Community								
Rural	56,277	.00	.00	.00				
Town	8,261	1.00	.00	.00				
Suburb	9,327	.00	1.00	.00				
City	31,559	.00	.00	1.00				
Free/Reduced Lunch								
No	64,786	.00	.00					
Reduced	6,830	1.00	.00					
Free	33,808	.00	1.00					
Risk								
No	96,984	.00						
Yes	8,440	1.00						
College Credits Earned								
No	46,622	.00						
Yes	58,802	1.00						
Closest Type of IHE								
NCICU	71,714	.00						
UNC	33,710	1.00						
Sex								
Male	51,153	.00						
Female	54,271	1.00						

Table 4.7 (continued)

	<i>n</i>	Parameter Coding						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
Type of School								
Traditional	102,743	.00						
ECHS	2,681	1.00						

N = 105,424 cases included in model

Model I: Habitus.

The logistic regression for Model I used the enter method in order to determine which variables were predictors of college. As aforementioned, data was screened for multicollinearity and all variables were included. The goodness of fit was assessed using -2 Log likelihood and Nagelkerke R square. The results of Model I showed that the -2 Log Likelihood reduced by 49062.02 from 146113.655 to 97051.640. Model I was significant (-2 Log Likelihood = 97051.640, $\chi^2 = 49062.014$, $p < .001$, $df=15$) and Nagelkerke $R^2 = .496$. The model correctly predicted 78.2% of the cases and explained 50% of the variance. The results from Model I, as indicated by the Wald statistic, showed race, sex, risk, free/reduced lunch, parent education, grade point average, ACT score, and college credits were statistically significant indicators that predicted college. When the Wald statistic was significant, the expected Beta (e^B) was used to provide the odds ratio.

In Model I: Habitus, the significant variables were: sex $e^B=1.089$; Asian $e^B= .911$; Black $e^B=3.259$; Hispanic $e^B =.548$; Native American/Hawaiian/Pacific Islander $e^B=1.376$; risk $e^B=.675$; reduced lunch $e^B=.867$; free lunch $e^B=.834$; pared – some college $e^B=1.308$; pared – bachelor degree $e^B=2.492$; pared – advanced degree $e^B=3.85$; grade point average $e^B=3.712$; ACT score $e^B=1.172$; and college credits $e^B=1.82$.

Females were 9% more likely to go to college than males. Asian students were 9% less likely to go to college. Black students were three times more likely to go to college. Hispanic students were 45% less likely to go to college. Native, or First Nations, students were 38% less likely to go to college. Students with an identified risk were 33% less likely to go to college. Students who were reduced lunch eligible were 13% less likely to go to college and students eligible for free lunch were 17% less likely. Students with parents who had some college were 31% more likely to go to college while children of parents with bachelor degrees were twice as likely and advanced degree were nearly four times as likely to attend college. Students with higher GPAs were almost four times as likely to go to college. ACT scores increased odds by 17% and having one or more college credits increased the likelihood of attending college by 82%. See Table 4.8 for further information on the coefficients in Habitus.

Model II: School and Community Context.

Model II included school and community characteristics to determine the extent to which those variables predict college-going behaviors alongside Habitus predictors. The block improved the overall model (-2 Log Likelihood= 95874.329, $\chi^2 = 50239.326$, $p < .001$, Nagelkerke $R^2 = .505$, $df = 28$). The model correctly predicted 78.2% of the cases and explained 50.5% of the variance.

The results from Model II indicated habitus, school and community context variables in the model were statistically significant ($p < .01$) predictors of college. In Model II, the significant variables were: sex $e^B = 1.064$; Asian $e^B = .818$; Black $e^B = 3.131$; Hispanic $e^B = .525$; Native American/ Hawaiian/Pacific Islander $e^B = 1.521$; risk $e^B = .64$; reduced lunch $e^B = .904$; free lunch $e^B = .873$; parental education some college $e^B = 1.288$; parent bachelor degree $e^B = 2.215$; parent advanced degree $e^B = 3.451$; Grade Point Average $e^B = 4.235$; ACT Score $e^B = 1.155$; College

Credits $e^B=1.784$; Type of School $e^B=1.886$; Average Class Size $e^B=1.016$; Community Support and Involvement $e^B=1.352$; Facilities and Resources $e^B=0.799$; Instructional Practice and Support $e^B=1.644$; School Leadership $e^B=0.339$; Teacher Leadership $e^B=2.164$; Town $e^B=1.066$; Suburb $e^B=1.119$; and City $e^B=1.632$.

When school-level and community variables were entered into the model, females were more likely (6%) to go to college than males. Asian students were 18% less likely to go to college. Black students were three times more likely to go to college. Hispanic students were 47% less likely to go to college. Native American, Hawaiian, and Pacific Islander students were 52% more likely to go to college. Students with an identified risk were 36% less likely to go to college. Students eligible for reduced lunch were 10% less likely to go to college. Students eligible for free lunch were 13% less likely to go to college. Students whose parent(s) had some college were 29% more likely to go to college than students whose parent(s) had no college experience. Students whose parent(s) held a bachelor degree were twice as likely to go to college and students whose parent(s) held an advanced degree were more than three times more likely to go to college. Higher grade point averages increased the likelihood of college by more than four times. Higher ACT Scores increased odds by 16%. Students with one or more college credits were 78% more likely to go to college.

Graduates of early college high schools were 89% more likely to go to college than graduates of traditional public schools. As average class size increased, students were 2% more likely to go to college. Several of the teacher working conditions that described the school context were indicators of college-going behaviors. In schools with higher Community Support and Involvement, students were 35% more likely to go to college. Graduates of schools with higher Facilities and Resources were 20% less likely to go to college. Instructional practice and

support increased college-going by 64%. School leadership decreased the likelihood by 66%. In contrast, graduates of schools with strong teacher leadership were twice as likely to go to college.

The type of community was a predictor of college-going behaviors. Students in towns were 7% more likely to go to college than students in rural communities. Students in suburbs were 12% more likely, and students in cities were 63% more likely to go to college than students in rural communities. See Table 4.8 for further information on the coefficients in Model II.

Model III: Higher Education Context.

Model III kept the variables from Habitus and the school and community context and introduced the higher education context. The block improved the overall model (-2 Log Likelihood= 95371.822, $\chi^2 = 50741.833$, $p < .001$, Nagelkerke $R^2 = .509$, $df = 33$). The model correctly predicted 78.6% of the cases and explained 50.9% of the variance.

The results from Model III indicated the variables related to the higher education context in the model were statistically significant ($p < .01$) predictors of college. In Model III, the significant variables were: sex $e^B = 1.059$; Asian $e^B = 0.807$; Black $e^B = 3.16$; Hispanic $e^B = 0.54$; Native American/ Hawaiian/PI $e^B = 1.41$; risk $e^B = 0.634$; reduced lunch $e^B = 0.905$; free lunch $e^B = 0.868$; some college $e^B = 1.274$; bachelor degree $e^B = 2.149$; advanced degree $e^B = 3.325$; gpa $e^B = 4.371$; ACT score $e^B = 1.154$; college credits $e^B = 1.773$; type of school $e^B = 1.845$; average class size $e^B = 1.012$; community support and involvement $e^B = 1.252$; facilities and resources $e^B = 0.842$; instructional practice and support $e^B = 1.983$; school leadership $e^B = 0.487$; teacher leadership $e^B = 1.526$; professional development $e^B = 0.722$; town $e^B = 1.268$; city $e^B = 1.472$; (distance from an institution of higher education (IHE) >9 to 20 miles $e^B = 0.877$; >20 to 35 miles $e^B = 0.695$; >35 to 62 $e^B = 0.453$; >62 miles $e^B = 0.726$; and closest type of IHE $e^B = 1.102$).

When higher education context variables were entered into the model, females remained 6% more likely to go to college than males. Asian students were 19% less likely while black students were three times as likely to go to college. Hispanic students were 46% less likely and Native American, Hawaiian, and Pacific Islander students were 41% more likely to go to college. Students with an identified risk were 37% less likely to go to college than students without an identified risk. Students eligible for reduced lunch and free lunch each remained 10% and 13% less likely, respectively. Children of parents with some college increased the likelihood of college by 27%. A bachelor's degree doubled the likelihood and an advanced degree tripled the likelihood of college. Students with higher gpa were still four times more likely to go to college. ACT scores increased the likelihood by 15%. Students with one or more college credits were 77% more likely to go to college.

Graduates of echs were 85% more likely to go to college. Students in schools with larger average class sizes were 1% more likely to go to college. Graduates of schools with stronger scores in the following teacher working conditions were more likely to go to college: community support and involvement (25%), managing student conduct (2%), instructional practice and support (98%), and teacher leadership (53%). Teacher working conditions where students were less likely to go to college included: facilities and resources (16%), school leadership, (51%), and professional development (28%). Students in increasingly urban areas were more likely to go to college than students in rural communities (town = 27% and city=47%).

Students who lived farther than nine miles from an institution of higher education were less likely to go to college than students who lived within 9 miles. >9 to 20 miles were 12% less likely, >20 to 35 were 31% less likely, >35 to 62 were 55% less likely, and more than 62 miles from an institution of higher education were 27% less likely to go to college. Students who lived

closest to a public four-year university were 10% more likely to attend college than students who lived closest to a private or independent four-year institution of higher education.

Model IV: Social, Economic, and Policy Context.

Model IV introduced the last block into the model, which the introduced social, economic, and policy context. The first three blocks examined predictors of college based on Habitus, school, community, and higher education characteristics. The final block improved the model. The 2 Log Likelihood reduced to 94968.075 ($\chi^2 = 51145.580, p < .001, \text{Nagelkerke } R^2 = .513, df = 41$). The model correctly predicted 78.8% of the cases and explained 51.3% of the variance.

The results from Model IV indicated Habitus, school and community, higher education, and social, economic and policy context variables in the model were predictors of college. In Model IV, the significant Habitus variables were: sex $e^B=1.053$; Asian $e^B= .832$; Black $e^B=3.083$; Hispanic $e^B =.532$; Native American/Hawaiian/Pacific Islander $e^B= 1.373$; risk $e^B=.629$; reduced lunch $e^B=.921$; free lunch $e^B=.880$; parental education some college $e^B=1.28$; parent bachelor degree $e^B=2.104$; parent advanced degree $e^B=3.297$; GPA $e^B=4.525$, ACT score $e^B=1.151$, and college credits $e^B=1.778$.

Significant school and community context variables included: school type $e^B=1.867$; average class size $e^B=1.006$; community support and involvement $e^B=1.262$; facilities and resources $e^B=0.766$; instructional practice and support $e^B=1.818$; school leadership $e^B=0.568$; teacher leadership $e^B=1.51$; professional development $e^B=0.691$; town $e^B=1.238$; suburb $e^B=1.143$; and city $e^B=1.484$.

In the higher education context, the distance to an institution of higher education and that type of institution remained significant: IHE - >9 to 20 miles $e^B=.904$; >20 to 35 $e^B=.753$; and >35 to 62 $e^B=.526$; and closest type of IHE $e^B=1.215$.

Model IV introduced the social, economic, and policy context. The significant predictors included the economic development regions: Northeast $e^B=1.158$; Southeast $e^B=.747$; Sandhills $e^B=1.065$; Piedmont Triad $e^B=1.133$; Southwest $e^B=1.247$; Northwest $e^B=.754$; and Western $e^B=.86$. The child poverty ratio was not a predictor.

Of the academic achievement predictors in Habitus for the final model, unweighted gpa emerged as the top predictor of college-going where students with higher gpas were more than four times more likely to go to college. Students with higher ACT scores were 15% more likely to go to college and students who earned college credits in high school were 78% more likely to go to college.

When the social, economic, and policy variables were entered into the model, females remained 5% more likely to go to college than males. Asian students were 17% less likely to go to college. Black students remained three times more likely to go to college. Hispanic students were 47% less likely to go to college while Native American, Hawaiian, and Pacific Islander students were 37% more likely to go to college. Students with an identified risk identified risk remained 37% less likely to go to college. Students eligible for reduced lunch were 8% less likely and students eligible for free lunch were 12% less likely to go to college. Students whose parent(s) had some college were 28% more likely to go to college than students whose parent(s) had no college experience. Students whose parent(s) held a bachelor degree were two times more likely to go to college and students whose parent(s) held an advanced degree were three times more likely to go to college.

Students who graduated from early college high school were 87% more likely to attend college than students in traditional high schools. Students in higher average class sizes were 1% more likely to go to college. A number of stronger teacher working conditions scores were positive predictors of college: community support and involvement (26%), instructional practice and support (82%), and teacher leadership (51%). Teacher working conditions that lessened the likelihood of college included: facilities and resources (23%), school leadership (43%), and professional development (31%). Students in towns, suburbs, and cities were more likely to go to college than students in rural communities (24%, 14%, and 48% respectively).

Students whose schools were 9 to 20 miles from a university were 10% less likely to go to college than students whose school was within 9 miles of a university. Students whose schools were >20 to 35 were 25% less likely and >35 to 62 were 47% less likely to go to college. Students who lived closest to a UNC member institution became 22% more likely to go to college than students who lived closest to an NCICU four-year institution.

All of the economic development regions became predictors of college. The northeast were more likely by 16%; southeast were 25% less likely; sandhills were 6% more likely; Piedmont Triad was 13% more likely; Southwest was 25% more likely; the northwest was 25% less likely; and the western region was 14% less likely to go to college. See Table 4.8 for further information on the coefficients in *Habitus*.

Table 4.8 Results of Logistic Regression Predicting Membership in Groups Utilizing Habitus, School and Community, Higher Education, and Social, Economic, and Policy Contexts, Beta Coefficients, Standard Error, Wald, Significance Levels, and Odds Ratios

Covariate	Model I		Model II				Model III				Model IV					
	<i>B</i>	S.E.	Wald	Exp(<i>B</i>)	<i>B</i>	S.E.	Wald	Exp(<i>B</i>)	<i>B</i>	S.E.	Wald	Exp(<i>B</i>)	<i>B</i>	S.E.	Wald	Exp(<i>B</i>)
Sex	.085***	.016	27.078	1.089	.062***	.016	14.174	1.064	.058***	.017	12.171	1.059	.052**	.017	9.703	1.053
White			7552.328				6289.936				6039.070				5636.986	
Asian	-.093	.054	2.993	.911	-.201***	.055	13.579	.818	-.215***	.055	15.346	.807	-.184***	.056	10.935	.832
Black	1.181***	.023	2684.519	3.259	1.141***	.023	2412.353	3.131	1.151***	.023	2436.543	3.160	1.126***	.024	2268.009	3.083
Hispanic	-.602***	.030	390.203	.548	-.642***	.031	434.027	.526	-.616***	.031	396.694	.540	-.631***	.031	409.508	.532
Multi-Racial	.003	.040	.006	1.003	.006	.041	.023	1.006	.024	.041	.339	1.024	.046	.041	1.255	1.047
Native American/HI/PI	.319***	.054	35.496	1.376	.419***	.055	58.548	1.521	.343***	.055	38.373	1.410	.317***	.057	30.528	1.373
Risk	-.393***	.034	137.720	.675	-.447***	.034	173.933	.640	-.455***	.034	179.226	.634	-.464***	.034	184.826	.629
FRL – None			81.573				44.009				47.054				37.633	
FRL – Reduced	-.142***	.033	18.628	.867	-.101**	.033	9.195	.904	-.100**	.033	8.952	.905	-.082*	.033	5.969	.921
FRL – Free	-.181***	.021	77.760	.834	-.136***	.021	42.438	.873	-.141***	.021	45.755	.868	-.128***	.021	37.067	.880
Pared – No College			2206.728				1629.277				1503.438				1423.416	
Some College	.268***	.020	178.543	1.308	.253***	.020	156.140	1.288	.242***	.020	142.019	1.274	.247***	.020	147.341	1.280
Bachelor Degree	.913***	.022	1719.413	2.492	.795***	.023	1238.957	2.215	.765***	.023	1136.761	2.149	.744***	.023	1065.599	2.104
Advanced Degree	1.348***	.044	952.509	3.850	1.239***	.044	783.261	3.451	1.201***	.044	730.730	3.325	1.193***	.045	716.453	3.297
Grade Point Average	1.312***	.017	5976.070	3.712	1.443***	.018	6616.981	4.235	1.475***	.018	6788.582	4.371	1.510***	.018	6947.653	4.525
ACT Score	.159***	.003	4005.244	1.172	.144***	.003	3133.062	1.155	.143***	.003	3062.985	1.154	.140***	.003	2913.668	1.151
College Credits	.599***	.017	1192.841	1.820	.579***	.018	1069.529	1.784	.573***	.018	1039.733	1.773	.575***	.018	1041.569	1.778
Type of School					.634***	.057	123.560	1.886	.613***	.058	113.426	1.845	.624***	.058	116.180	1.867
Average Class Size					.016***	.003	36.091	1.016	.011***	.003	17.522	1.012	.006*	.003	4.020	1.006

Table 4.8 (continued)

Covariate	Model I		Wald	Model II		Wald	Exp(B)	Model III		Wald	Exp(B)	Model IV		Wald	Exp(B)
	B	S.E.		B	S.E.			B	S.E.			B	S.E.		
Community Support and Involvement				.301***	.060	25.457	1.352	.225***	.060	13.905	1.252	.233***	.061	14.508	1.262
Managing Student Conduct				-.024	.051	.214	.977	.018	.052	.126	1.019	.076	.052	2.094	1.079
Facilities and Resources				-.224***	.052	18.359	.799	-.173***	.053	10.568	.842	-.267***	.056	23.143	.766
Instructional Practice and Support				.497***	.113	19.266	1.644	.685***	.114	35.837	1.983	.598***	.119	25.202	1.818
School Leadership				-1.082***	.121	79.518	.339	-.720***	.123	34.073	.487	-.566***	.125	20.660	.568
Teacher Leadership				.772***	.114	45.633	2.164	.422***	.116	13.225	1.526	.412***	.118	12.218	1.510
Professional Development				-.113	.084	1.809	.893	-.326***	.086	14.469	.722	-.370***	.088	17.725	.691
Use of Time in School				-.117	.065	3.211	.890	-.040	.066	.366	.961	-.079	.068	1.350	.924
Rural						512.464				310.204				264.730	
Town				.064*	.031	4.318	1.066	.238***	.032	54.656	1.268	.213***	.033	41.595	1.238
Suburb				.112***	.030	13.756	1.119	.038	.031	1.493	1.038	.134***	.035	14.700	1.143
City				.490***	.022	502.272	1.632	.387***	.023	274.629	1.472	.395***	.025	251.125	1.484
IHE - 0 to 9 miles										495.909				300.995	
>9 to 20								-.131***	.021	37.256	.877	-.101***	.022	21.548	.904
>20 to 35								-.364***	.026	195.823	.695	-.283***	.027	113.466	.753
>35 to 62								-.793***	.038	437.443	.453	-.642***	.040	263.803	.526
>62 miles								-.320***	.074	18.901	.726	-.112	.076	2.155	.894
Closest Type of IHE								.097***	.019	25.655	1.102	.195***	.022	75.307	1.215
Child Poverty Ratio												-.001	.002	.318	.999
North Central														375.334	

Table 4.8 (continued)

Covariate	Model I			Model II				Model III				Model IV				
	<i>B</i>	S.E.	Wald	Exp(<i>B</i>)	<i>B</i>	S.E.	Wald	Exp(<i>B</i>)	<i>B</i>	S.E.	Wald	Exp(<i>B</i>)	<i>B</i>	S.E.	Wald	Exp(<i>B</i>)
Northeast													.147***	.033	20.155	1.158
Southeast													-.292***	.028	109.436	.747
Sandhills													.063*	.028	5.141	1.065
Piedmont Triad													.125***	.020	38.079	1.133
Southwest													.221***	.022	103.230	1.247
Northwest													-.283***	.029	97.015	.754
Western													-.151***	.033	20.970	.860

* $p < .05$ ** $p < .01$ *** $p < .001$

(Final Model:-2 Log Likelihood= 94968.075, chi-squared = 51145.580, $p < .001$, Nagelkerke R Squared= .513)

Summary

This chapter presented the findings of the study, which examined a model to understand which variables across multiple contexts predicted college-going behaviors of graduates of North Carolina public traditional and early college high schools through the use of logistic regression. The first block measured student habitus. The second block expanded on student demographics to include characteristics about students' schools and communities. The third block further explored the higher education context. The fourth block added data related to social, economic, and policy characteristics. Each step of analysis was reviewed and analyzed by the researcher. Significant variables that increased the predictive power of the model were discussed.

In the next chapter, findings will be further discussed. Theoretical implications will be provided, followed by implications for policy and practice. The limitations of this study will be discussed. Finally, recommendations for future researchers to examine in order to better understand factors that contribute to college-going behaviors will be presented.

CHAPTER 5

Summary, Conclusions and Recommendations

The purpose of this study was to build and test a model to determine the variables that influence college going behaviors of high school graduates of public traditional and early college high schools in North Carolina. While there have been a number of qualitative and small-scale quantitative studies that have examined college-going behaviors of high school graduates, this study examined predictors of college-going behaviors from an inclusive conceptual framework in the context of North Carolina.

A key strength of this study was the use of secondary data inclusive of an entire cohort of students. Previous studies have predominantly relied on surveys and interviews. This study, in contrast, employed observed data for all graduates of North Carolina public traditional and early college high schools across two graduating classes. Using a census, the researcher learned limitations of the data holdings due to patterns in the missing data and also, was able to examine the research question with a larger dataset than what would have been possible through survey or other methods available to the researcher.

Perna's (2006) Proposed Conceptual Model of Student College Choice and Access presented a case for examining college-going behaviors using habitus, school and community, higher education, social, economic, and policy context variables. Perna also made a case for examining these variables through more than the typically narrow disciplinary lens. This study adapted Perna's conceptual model and tested it using available secondary data from the State of North Carolina and U.S. Census data.

The application process to obtain the data took months. The data management plan for this study necessitated that this researcher work with technology support at North Carolina State

University to create an entirely new server space to house the data in order to comply with the data security requirements of the North Carolina Education Data Research Center and North Carolina Department of Public Instruction. Prior to that exercise, the College of Education at North Carolina State University lacked a central space to house data for researchers.

Upon approval for the study, folders of separate data files were shared with the researcher who constructed the data set through the cleaning, merging, and appending more than 30 files of data with 50 to 3,000,000+ rows of data and hundreds of variables. The researcher wrote thousands of lines of code using STATA in order to clean and construct the dataset. In doing so, the researcher found unexpected patterns of missing data that aligned with characteristics of persons underrepresented in higher education. While the researcher expected to have roughly 200,000 participants in the study, there were only 164,146 records with complete data (excepting parental education) after students at magnet, alternative, and charter schools were removed and 105,424 that matched across all variables.

Discussion of Results

The results of this study provided insight on the variables that can be used to predict college-going behaviors for graduates of North Carolina Public traditional and early college high schools.

The research question examined the factors within habitus, the school and community, higher education, and social, economic, and policy contexts that affected students' likelihood to attend college. A logistic regression model was run and found that variables within all four contexts could be used to predict college-going behaviors in North Carolina.

Four blocks were employed in order to examine the impact of the independent variables separately based on 1) student characteristics, 2) school and community characteristics, 3) higher

education characteristics, and 4) social, economic, and policy variables. In each iteration, the model improved and ultimately explained 51.3 percent of the variance.

In the final model, the strongest predictors of college were GPA, higher parental level of education, type of school being an early college high school, strong instructional practice and support for teachers in the school, earned college credits, strong teacher leadership, city as the type of community, and community support and involvement. In the final model, black students and native students were exponentially more likely to go to college.

Habitus

As aforementioned, a student's unweighted grade point average was the strongest predictor of college. Stronger grade point averages increased the likelihood of college by an odds ratio of 353%. It was not surprising that GPA was such a strong indicator. Grade point average has been found to be a strong predictor of college choice in many studies since the 1980s (Kim and Hull, 2015; Chapman, 1981). Other positive predictors in Habitus were: being female, Black or Native American, not having an identified risk, having a parent who went to college, having a strong ACT score, and earned college credits in high school. Over the last 30 years, females have had increasingly higher college-going rates, so the findings of this study were consistent with findings from other studies (Cabrera and La Nasa, 2000).

Black students and Native American students have been historically underrepresented in higher education, so it was surprising to see these race categories as strong positive predictors of college-going behaviors. However, previous studies on college choice have also found that historically underrepresented students' college choice is even more strongly positively impacted high grade point averages and test scores (Perna, 2000). Not having an identified risk, having a

parent with higher levels of education, strong test scores, have historically been positive predictors in the college choice process (Cabrera and La Nasa, 2000).

The variable this researcher found most interesting in the Habitus context was college credits. In the initial modeling, the number of college credits was to be used. However, due to concerns over accuracy of the transcript data for the exact number of college credits earned during high school, and initial tests that showed little variance in behaviors between students who had 1 credit versus multiple, a dummy variable was used. It was profound that having even a single college credit during high school made students 78 percent more likely to attend a four-year institution of higher education. Historically, opportunities for college credits in high school have been reserved for high-achieving students only (Palmer, Hayek, Hossler, et.al, 2004).

However, the early college high school model introduces that opportunity to students, regardless of previous performance or aptitude. Further studies could be conducted to examine the success in college of students who enter with credits. Policymakers and educational administrators should examine ways to promote access to college credits for all students through existing and new programs.

School and Community Context

Students who attended early college high schools were almost twice as likely to attend college than students who attend traditional high schools ($e^B=1.867, p<.001$). Teacher reported conditions of schools were also related to college-going behaviors.-Specifically, schools with better resources, higher levels of instructional support, teacher leadership, and stronger conduct management practices were positive predictors of college. In contrast to widely held views about class size, higher average class sizes predicted 4.2% of higher likelihood of college.

There was a significant relationship between college-going behaviors and the teacher working conditions within schools. Instructional practice and support was the strongest predictor of college among the teacher working conditions variables. In those schools, students were three times more likely to go to college. Similarly, in schools with high teacher leadership, students were two times more likely to go to college. Not surprisingly, schools with ample facilities and resources were predictors of college as well. These outcomes are supported theoretically by the conceptual model and previous studies.

In contrast, high scores on use of time, professional development, and school leadership predicted students less likely to attend college. Overall, this study found that high school type and factors within the school context may be used to predict college.

Higher Education Context

The model indicated that physical proximity to institutions of higher education may be a factor in students' decision and opportunity to attend college. As the distance of the school from an institution of higher education increased, students were less likely to attend college. Students who attended a high school were most likely to go to college while students who lived farther away were less likely to go to college. Students who attend high school in close proximity to a four-year institution of higher education may have more opportunities to visit and/or participate in pre-college programs. A limitation of this study was that no information about students' experiences with or on college campuses was found in the data. Future research should explore this further.

Social, Economic & Policy Context

Findings indicated significant differences in college-going behaviors between the different economic development regions of the state. The North Central region, which includes

the state capital, had the highest rate of students going to college while the Southeast and Northwest had the lowest.

Summary

The findings of this study identified factors in the Habitus, school and community, higher education, and social, economic and policy contexts that are positively associated with higher college-going rates. High school type was a positive predictor of college, but other aspects of the student portrait and high school setting were just as, and even more, important.

While the early college high school showed positive gains for first-generation college students, students of color, and other populations of students underrepresented in higher education in North Carolina, there were positive attributes in traditional schools that also predicted higher probability of college-going behaviors. A major aspect of the early college high school model is the opportunity for students, regardless of prior academic performance, to enroll in and complete college courses while in high school. Students who earned college credits through Advanced Placement, online, at an institution of higher education, etc. all emerged as strong predictors of college. As such, practitioners and policy makers should identify and support ways for students to earn college credit in high school. Researchers should further examine the impact of college credits earned on college-going behaviors and degree attainment.

Implications for Theory

This study tested a model proposed to understand college access and choice. Perna (2006) proposed the model as an integrated model incorporating the four major types of capital: 1) social; 2) economic; 3) cultural and 4) human capital.

Perna and Thomas (2008) posited that prior research was too narrow in focus, historically limited by the discipline of the research. They identified four disciplines traditionally used and

claim that the methodology used was usually consistent with and limited to the discipline as well. They were: 1) Psychology, 2) Sociology, 3) Economics, and 4) Education/Organization (Perna and Thomas, 2008; Valentine, et al., 2009). In the development of the model employed in this study, both Perna and Thomas (2008) and Valentine, Hirschy, Bremer, Novillo, Castellano, and Banister (2009) used multiple perspectives to develop models for better understanding the decisions students make.

This study applied aspects of the four disciplines to the model. What I learned was that the significance and level of impact on a student's decision to enroll in college is not siloed. This was demonstrated through the changes in the Wald statistics and odds ratios in variables when new variables (presumably from another discipline) were entered. For example, having a parent with an advanced degree made students more than 10 times more likely to enroll in college. However, once the variables from other contexts were entered into the model – the impact of parental education reduced significantly.

Limitations

Limitation #1: Secondary Data.

There were a number of major limitations for this study. The first limitation was the nature of the data. Because this study employed secondary data, it was limited by the holdings of the North Carolina Education Research Data Center (NCERDC) and publicly available data. To construct the dataset, the researcher created, cleaned, and merged more than 30 separate files of data, each with 50 to 3,000,000 rows of data using student, school, and local education agency unique identifiers to match data across files.

Prior to obtaining the data, minimal descriptive information about the nature of the data was available to the researcher. In the codebooks provided by the NCERDC, minimal

information was provided in regards to the methods for data collection (e.g., survey/self-report, administrative observation, etc.). Reliability analyses were unavailable for much of the data. During the construction of the dataset, the researcher learned that there were incomplete records kept on student, school, and district levels. There were inconsistencies in school names and, in some cases, schools that were missing from the master files altogether.

Another limitation of the data was that the NCERDC data was collected at different points in time. For example, parental education was last recorded in 2006 on the End of Grade tests when the participants in this study were potentially in grades three through eight. The students' parent(s) could potentially have obtained further education by the time the student graduated in 2013–2014. Furthermore, there were a number of records this variable failed to match for, possibly due to transfers inside or outside of the state of North Carolina between 2006 and 2013–2014.

Limitation #2: Sample Population.

A second limitation of the study was the sample population. The researcher began to build the data set with the master files from four academic years in order to capture all students who may have been eligible to graduate in 2013 or 2014. Across all student-level data sets, there were records not found in other data sets and records with missing unique identifiers. The dependent variable for this study was students' plans immediately following high school. That data was collected at the time of graduation, so it excluded any students who failed to graduate. The missing data limits the researcher's ability to generalize findings, especially since there were patterns found in student-level records with missing data that have been associated with lower college-going rates in previous studies.

If the study were to include outcomes of all students eligible to graduate in an academic year, a clearer picture of the outcomes of all students could be painted. Also, students' plans following graduation may not reflect actual college enrollment, nor does it reflect persistence in college nor degree attainment. Future studies may be conducted to better understand college completion rates of students based on high school type.

Implications for Policy and Practice

Implication for Policy and Practice #1: College Credit Programs in High School

This study found that students who earned even a single unit of college credit in high school were 78% more likely to go to college following graduation from high school. In traditional public North Carolina high schools, students have opportunities to earn college credits through Advanced Placement (AP), online, dual enrollment, and at early college high schools. In traditional schools, the opportunity to earn college credits are typically limited to high-achieving and honors students. At early college high schools, all students take college courses.

The findings of this study indicate policymakers might further support programs and opportunities for students to obtain college credits in high school. Since a greater number of students reside in more rural parts of the state than cities, particular attention should be given to support college access to students in those more rural, and more remote communities. Since proximity to higher education institutions emerged as a significant factor, high schools and universities might consider expanding efforts to expose K-12 students to colleges and universities, as well as pre-college programs.

Implication for Policy and Practice #2: Teacher Working Conditions

This study found multiple constructs of teacher working conditions that positively and negatively predicted college. Policymakers and education administrators might seek to improve

teacher working conditions correlated with positive gains in college-going behaviors. All schools across the State of North Carolina, and in other states where the survey is administered, receive customized reports of their survey results along with materials that can be used to facilitate conversations and drive improvement in their school. On a statewide level, policymakers might seek ways to promote activities and initiatives to improve teacher working conditions, particularly in schools with lower scores and lower college-going rates.

Implication for Policy and Practice #3: Data Management

The results of this study have a number of implications for policy and practice. In recent years, data-driven decision-making, “the use of data analysis to inform courses of action involving policy and procedures,” has emerged as an aspirational practice of policy makers and educational practitioners (Picciano, 2012, p.11). Improvements in technology have increased the feasibility of building and maintaining data warehouses making it easier for data to get to the table where decisions are made. This study attempted to utilize multiple sets of data to understand, from an inclusive conceptual framework, predictors of high school graduates going to college following high school. Through the construction of the dataset, I identified some of the limitations of the state’s data holdings, which will be discussed further in the next section.

According to Picciano (2012), “in order for big data and learning analytics applications to function well, data need to be accurate and timely” (p.18). Before practitioners and policy makers attempt to use data warehouses to inform decision-making, they should spend time understanding the data, its completeness and accuracy. For example, based on the variable list provided by the NCERDC, I identified variables for use in this study. Originally, I wanted to include students’ educational aspirations in the study in order to understand what, if any, relationship exists between educational aspirations and college-going behaviors. According to

the NCERDC holdings, students' education goals were available in two datasets, individual End of Course test files and SAT files. It would have been impractical to attempt to match individual End of Course test responses to every student in the dataset. In the NCERDC holdings, there were 137 separate files for EOCs.

In the SAT files, there were a number of demographic questions of interest. However, all students do not take the SAT. Students must pay to sit for the exam. Of the student records in the sample, only 79,292 were matched with the SAT files. Ultimately, the SAT files excluded a disproportionate number of students who did not attend college. Simultaneously, many students who attended college did not take the SAT. This was only one example of the gaps that emerged in the attempt to build a usable dataset from multiple files. To use only one file to examine a research question, a researcher, practitioner, or policy maker may be blissfully unaware of the limitations of the data because of the size. However, I attempted to use multiple files and learned that there were patterns associated with the completeness of the data. Successful students tended to have complete data and unsuccessful students tended not to.

The statewide data was still preferable to survey data for the purposes of this study. The state's holdings were much more comprehensive than what I would have been able to collect as a single researcher. Policy-makers and practitioners should utilize data holdings when possible because, while there are limitations, the statewide holdings present a much more complete picture than what might be available through a single survey. "As data-driven decision making enters the big data and learning analytics era, these new approaches, while not silver bullets, may be part of the solution. Higher education administrators will do well by evaluating whether they can be used in their institutions and determining the role they can play" (Picciano, 2012, p.19).

Implications for Research

Implication for Research #1: Use of State Data Warehouses

Future higher education researchers may examine the utility of data housed by state primary and secondary agencies. The construction of the data set used to explore this researcher's questions shed light on considerations for future studies. The feasibility of the use of multiple datasets from the NCERDC was not one of the research questions for this study, but through the construction of the dataset, emerged as a factor. Future studies might further explore the validity, reliability, and contents of the holdings of statewide data warehouses for the purposes of higher education research.

Implication for Research #2: Connections between Aspirations and Actions

Due to limitations in the data available, a link between students' educational goals and college-going behaviors could not be examined, but may be considered as a subject for future researchers. One of the greatest limitations of aspirational research and its policy implications is that student aspirations are often inconsistent with student actions. Many students who often say they want to or "aspire to" go to college may not believe they will be able to and often do not actually pursue a postsecondary degree (Hossler, Schmit, & Vesper 1999).

Future researchers may seek to examine the impact of other types high schools on college-going behaviors such as Charters, Innovative Redesigned High Schools, Magnets, and Alternative schools.

Implication for Research #3: Test the Water, not the Fish

Future researchers should examine school, community, and policy contexts in a model prior to entering the academic performance variables. Student academic performance variables accounted for the greatest amount of variance in the models. When the larger community,

school, and even student-level demographics were entered into the model first, different variables emerged as significant than in the final regression model for this study. The nature and direction of the relationship between, for example, school conditions and student performance was limited by the approach used in this study. Since gpa was the strongest predictor and ACT score was also a strong predictor, future studies should examine ways variables across the other contexts promote academic achievement that leads to increased college-going behaviors.

Conclusion

This study sought to understand, from an inclusive conceptual framework, the relationship between habitus, school and community, higher education, and social, economic, and policy contexts and college-going behaviors of graduates of North Carolina public traditional and early college high schools. Findings indicated variables across all four contexts may be used to predict postsecondary outcomes for high school graduates in North Carolina.

In conclusion, this study demonstrated the importance of utilizing a multi-lens approach to examine postsecondary outcomes. Student characteristics, school, community, higher education, social, economic, and policy related variables play a role in shaping the narrative of who chooses, and can, go to college. While there may not be any one perfect educational solution to increase college-going behaviors; data exists that can be used to inform policy, practice, and future research in this arena.

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APPENDICES

Appendix A: The University of North Carolina Mission Statement

The mission of the University is shaped in large measure by the constitutional and statutory mandates by which public higher education is established and maintained. Article IX of the Constitution of the State declares:

Sec. 8. Higher education. The General Assembly shall maintain a public system of higher education, comprising The University of North Carolina and such other institutions of higher education as the General Assembly may deem wise...

Sec. 9. Benefits of public institutions of higher education. The General Assembly shall provide that the benefits of The University of North Carolina and other public institutions of higher education, as far as practicable, be extended to the people of the State free of expense.

This constitutional mandate for a public system of higher education is effected by Chapters 115 and 116 of the General Statutes. Chapter 115A, enacted in 1963, provides for a statewide network of community and technical colleges and institutes which offer two-year college transfer and technical and vocational programs. Chapter 116 of the statutes, as amended by the General Assembly effective July 1, 1972, provides in Section 3 that: The board of trustees of the University of North Carolina is hereby redesignated, effective July 1, 1972, as the 'Board of Governors of the University of North Carolina.' The Board of Governors shall be known and distinguished by the name of 'the University of North Carolina' and shall continue as a body politic and corporate and by that name shall have perpetual succession and a common seal.

Section 4 of the statute provides for the University of North Carolina to be composed of the 16 public senior institutions in the state.

The Higher Education Reorganization Act of 1971, which placed those 16 institutions under one governing board, asserted the basic objectives and purposes for the University of North Carolina: to foster the development of a well-planned and coordinated system of higher education, to improve the quality of education, to extend its benefits, and to encourage an economical use of the state's resources.

Central to the process of strategic planning is the clarification of the overall mission of the University as a whole and the role and scope of the constituent institutions within that overall mission. As a part of the comprehensive mission review of 1992, the Board of Governors adopted a general mission statement for the University. This statement, with minor modifications, was given statutory status in 1995 when the General Assembly amended Chapter 116-1 of the General Statutes to include the following as the official mission statement of the University of North Carolina:

Statement of Mission

The University of North Carolina is a public, multi-campus university dedicated to the service of North Carolina and its people. It encompasses the 16 diverse constituent institutions and other educational, research, and public service organizations. Each shares in the overall mission of the University. That mission is to discover, create, transmit, and apply knowledge to address the needs of individuals and society. This mission is accomplished through instruction, which communicates

the knowledge and values and imparts the skills necessary for individuals to lead responsible, productive, and personally satisfying lives; through research, scholarship, and creative activities, which advance knowledge and enhance the educational process; and through public service, which contributes to the solution of societal problems and enriches the quality of life in the State. In the fulfillment of this mission, the University shall seek an efficient use of available resources to ensure the highest quality in its service to the citizens of the State.

Teaching and learning constitute the primary service that the University renders to society. Teaching, or instruction, is the primary responsibility of each of the constituent institutions. The relative importance of research and public service, which enhance teaching and learning, varies among the constituent institutions, depending on their overall missions.

Appendix B: Files Included in the Data Set

Source	File Name	Year	Type of Variable(s)	Records
NCERDC	MB_2011_PUB.sas7bdat	2011	Student	1,161,922
NCERDC	ACCDEMOPUB2011.sas7bdat	2011	Student	2,960,029
NCERDC	MB_2012_PUB.sas7bdat	2012	Student	1,165,021
NCERDC	ACCDEMOPUB2012.sas7bdat	2012	Student	2,971,096
NCERDC	PCAUDIT_PUB2013.sas7bdat	2013	Student	1,140,280
NCERDC	ACCDEMOPUB2013.sas7bdat	2013	Student	2,994,517
NCERDC	PCAUDIT_PUB2014.sas7bdat	2014	Student	1,149,983
NCERDC	ACCDEMOPUB2014.sas7bdat	2014	Student	3,020,195
NCERDC	GPA2012.sas7bdat	2012	Student	95,593
NCERDC	GPA2013.sas7bdat	2013	Student	96,531
NCERDC	GPA2014.sas7bdat	2014	Student	89,349
NCERDC	TRANSCRIPTS2009.sas7bdat	2009	Student	3,547,005
NCERDC	TRANSCRIPTS2010.sas7bdat	2010	Student	3,389,151
NCERDC	TRANSCRIPTS2011.sas7bdats	2011	Student	3,489,765
NCERDC	TRANSCRIPTS2012.sas7bdat	2012	Student	3,503,075
NCERDC	TRANSCRIPTS2013.sas7bdat	2013	Student	3,479,758
NCERDC	ACT2013pub.sas7bdat	2013	Student	91,855
NCERDC	ACT2014pub.sas7bdat	2014	Student	93,194
NCERDC	EOG3PUB06.sas7bdat	2006	Family	104,808
NCERDC	EOG4PUB06.sas7bdat	2006	Family	102,831
NCERDC	EOG5PUB06.sas7bdat	2006	Family	103,615
NCERDC	EOG6PUB06.sas7bdat	2006	Family	106,772
NCERDC	EOG7PUB06.sas7bdat	2006	Family	106,774
NCERDC	EOG8PUB06.sas7bdat	2006	Family	107,968
NCDPI	profile metrics average class size	2014	School/Community	81,283
NCDPI	custom_report_school.csv	2014	School/Community	2,657
NCERDC	schlrptfinal13_14.sas7bdat	2014	School	2,572
NCERDC	WCS14.sas7bdat	2014	School/Community	93,178
NCES/ArcGIS	NC IHE from NCES	2015	School	50
US Census	PCT Poverty	2014	Community	114
NCERDC	Mastsat12pub.sas7bdat	2012	Student	55,575
NCERDC	Mastsat13pub.sas7bdat	2013	Student	50,773
NCERDC	Mastsat14pub.sas7bdat	2014	Student	50,871

Appendix C: MBuild Files Example Codebook 2014

*MBuild and ACC DEMO Files Used Included 2011 – 2014

STUDENT-LEVEL ACADEMIC SUMMARY, 2014

Computer file name and date:

PCAUDIT_PUB2014.sas7bdat November 7, 2014

Codebook date (most recent update): November 7, 2014

Summary:

This dataset includes student demographics, attendance, days in membership, and End of Grade/End of Course test scores, achievement levels, accommodations, dates, and proficiency status.

This file is linked to other NCERDC student data files. For more information about the NCERDC's student matching process, see Technical Report #2 "Creating a Longitudinal Student Database" and Technical Report # 4 "Creating Public Use Student Data Files."

Origin:

Files were received from the North Carolina Department of Public Instruction (NCDPI).

Origin file name(s):

pcaudit.txt

Case Count:

PCAUDIT_PUB2014.sas7bdat has 1,149,983 records.

Format:

Each file is a SAS data set. For numeric variables, missing data are indicated by a period (.) and for character variables, missing data are indicated by a blank (' ').

Extent of Processing by the North Carolina Education Research Data Center:

The NCERDC

- converted various files to SAS,
- formatted and labeled variables,
- performed internal consistency and validity checks of each file,
- matched to other student data files using randomized student identifier that permits tracking students across tests and years, and
- produced the codebook.

Measures:

Variable Name

Variable Description

AIG

Academically/Intellectually Gifted

B = Both

M = Math

N = None

R = Reading

EC_CODE

Exceptionality Code

ATD = Atypical Development*

AU = Autistic

DB = Deaf-Blind

DD = Developmentally Delayed

DF = Deafness
 DMD = Developmental Delay*
 ED = Serious Emotional Disability
 EST = Established Condition*
 HI = Hearing Impaired
 HRE = High Risk Established*
 HRP = High Risk Potential*
 IDMI = Intellectual Disability - Mild
 IDMO = Intellectual Disability - Moderate
 IDSE = Intellectual Disability - Severe
 LD = Specific Learning Disabled
 MU = Multiple Disabilities
 NULL = Not identified as an Exceptional Student
 OH = Other Health Impairment
 OI = Orthopedically Impairment
 SI = Speech-Language Impairment
 TB = Traumatic Brain Injury
 VI = Visually Impairment

* = Not considered students with disabilities (SWD)

EDS	Student is economically disadvantaged N = No Y = Yes
ETHNIC	Student Race/Ethnicity I = AMIN = American Indian A = ASIA = Asian H = HISP = Hispanic B = BLCK = Black W = WHITE = White M = MULT = Multi-Racial P = NHPI = Native Hawaiian/Pacific Islander
FRL	Free/reduced lunch code 1 = Temporary 2 = Free 3 = Reduced 4 = Full pay
GRADE	DPI Alphanumeric Grade Code
LEA	Local Education Agency Code 010-995 = LEAs (Charter schools alphanumeric)
LEP	Limited English Proficient 1 = 1 st Year Exempt N = Not LEP U = Exited LEP Y = Current LEP
LEP_FIRST_YEAR	First Year in US Schools

LEP_YEAR_EXITED	Year Exited LEP
MASTID	NCERDC Encrypted Student Identifier
SCHLCODE	School Code 000 = Charter Schools, each has its own LEA Code
SEX	Student Sex F = Female M = Male
SWD	Students with Disability N = No Y = Yes U = Exited within 2 years

Appendix D: ACC DEMO Files Example Codebook 2014

STUDENT DEMOGRAPHIC AND ATTENDANCE DATA, 2014

Computer file name and date:

ACCDEMOPUB2014.sas7bdat, November 7, 2014

Codebook date (most recent update):

November 7, 2014

Summary:

These data include the demographic information of students in membership in grades 3 through 13. Some students in grades PK through 2 are included, but the inclusion of these students is not required and therefore may not reflect all students in these grades in North Carolina public schools.

This file is linked to other NCERDC student data files. For more information about the NCERDC's student matching process, see Technical Report #2 "Creating a Longitudinal Student Database" and Technical Report # 4 "Creating Public Use Student Data Files."

Origin:

Received from the North Carolina Department of Public Instruction.

Origin file name(s):

accdemo_fdf_fds.txt

Case Count:

ACCDEMOPUB2014.sas7bdat has 3,020,195 records.

Format:

Each file is a SAS data set. For numeric variables, missing data are indicated by a period (.) and for character variables, missing data are indicated by a blank (' ').

Extent of Processing by the North Carolina Education Research Data Center:

The NCERDC

- converted various files to SAS,
- formatted and labeled variables,
- performed internal consistency and validity checks,
- if possible, matched to other student data files using randomized student identifier that permits tracking students across tests and years, and
- produced the codebook.

Measures:

Variable Name	Variable Description
ETHNIC	Student Race/Ethnicity A=Asian B=Black H=Hispanic I=American Indian M=Multi-Racial P=Pacific Islander W=White
GRADE	Grade
LEA	Local Education Agency Code
MASTID	NCERDC Encrypted Student Identifier
SCHLCODE	School Code 000 = Charter Schools, each has its own LEA code 200 or greater for schools.
SEX	Student Sex F = Female M = Male

Appendix E: GPA Codebooks 2012 – 2014

GPA Data – 2011-12, 2012-13

Computer file name and date:

GPA2013.sas7bdat March 11, 2014

GPA2012.sas7bdat February 1, 2013

Codebook date (most recent update):

March 11, 2014

Summary:

Data include information on 12th grade student GPA, class rankings, and high school completion. Whenever possible, these data are linked to other NCERDC student-level datasets, including End of Grade and End of Course testing. Nearly all records were matched to the NCERDC database.

Origin:

Files were received from the North Carolina Department of Public Instruction.

Case Count:

GPA2013.sas7bdat has 96,531 records.

GPA2012.sas7bdat has 95,593 records.

Measures:

Variable Name	Variable Description
---------------	----------------------

BOUND_FOR_CODE	Future Plans
	1 = Public Institution
	2 = Private Institution
	3 = Community/Technical College
	4 = Private Junior College
	5 = Trade, Business, or Nursing School
	6 = Military
	7 = Employment
	8 = Other
	9 = Public Institution – Out of State
	10 = Private Institution – Out of State
	11 = Community/Technical – Out of State
	12 = Private Junior College – Out of State
	13 = Trade School – Out of State

BOUND_FOR_DESC	Future plans description, corresponding to above codes
----------------	--

DIPLOMA_ISSUED_DATE	Date Diploma Was Issued
---------------------	-------------------------

DIPLOMA_MET_DATE	Date All Diploma Requirements Were Met
GPA_UNWEIGHTED	Unweighted Grade Point Average (4 point scale)
LEA	Local Education Agency Code
MASTID	NCERDC Encrypted Student Identifier NOTE: 193 missing MASTID
NINTH_ENTRY_DATE	Ninth Grade Entry Date
SCHOOL	LEA/School Code

GPA Data, 2013-14

Computer file name and date:

GPA2014.sas7bdat January 5, 2015

Codebook date (most recent update):

January 5, 2015

Summary:

Data include information on 12th grade student GPA, class rankings, and high school completion. Whenever possible, these data are linked to other NCERDC student-level datasets, including End of Grade and End of Course testing. Nearly all records were matched to the NCERDC database.

Origin:

Files were received from the North Carolina Department of Public Instruction.

Case Count:

GPA2014.sas7bdat has 89,349 records.

Measures:

Variable Name	Variable Description
BOUND_FOR	Future Plans
DIPLOMA_ISSUED	Date Diploma Was Issued
DIPLOMA_MET	Date All Diploma Requirements Were Met
GPA_UNWEIGHTED	Unweighted Grade Point Average (4 point scale)
LEA	Local Education Agency Code
MASTID	NCERDC Encrypted Student Identifier
NINTHRADEENTRY	Ninth Grade Entry Date
PROGRAM	Program Description
SCHOOL	LEA/School Code
SCHOOL_NAME	School name

Appendix F: Transcripts

Transcript Data

Computer file name and date:

TRANSCRIPTS2009.sas7bdat	June 1, 2011
TRANSCRIPTS2010.sas7bdat	January 25, 2012
TRANSCRIPTS2011.sas7bdat	September 24, 2012
TRANSCRIPTS2012.sas7bdat	February 1, 2013
TRANSCRIPTS2013.sas7bdat	March 11, 2014

Summary:

Data include information from students' high school transcripts, including courses taken, credits, class ranking, and course grades.

Information is available only for a small number of districts in 2005, and increases over time; with data for nearly all students in the 2008-09 and subsequent academic years. Whenever possible, these data are linked to other NCERDC student-level datasets, including End of Grade and End of Course testing. In 2005, 88% of transcript records can be linked to other student files, and roughly 95% to 99% of transcripts in other years match other records in the NCERDC database.

Origin:

Files were received from the North Carolina Department of Public Instruction.

Case Count:

TRANSCRIPTS2009.sas7bdat	has 3,547,005 records
TRANSCRIPTS2010.sas7bdat	has 3,389,151 records
TRANSCRIPTS2011.sas7bdat	has 3,489,765 records
TRANSCRIPTS2012.sas7bdat	has 3,503,075 records
TRANSCRIPTS2013.sas7bdat	has 3,479,758 records

Measures:

Variable Name

Variable Description

ACADEMIC_LEVEL_CODE

Academic level

- 0 Modified Curriculum
- 1 Abridged/Adapted (Remedial)
- 2 Standard Version
- 3 Applied/Technical
- 4 Advanced Placement/NCVPS
- 5 Honors/Advanced/AIG/
- 6 Co-op Education
- 7 Advanced Placement
- 8 International Baccalaureate
- 9 Non-Classroom Activity

I	Community College & Honors
J	University and Honors
K	Community College Part I
L	Community College Part II
O	Honors/NCVPS
Q	Standard Version/NCVPS
T	C. College & Honors & On-Line
U	Community College Standard
V	Online Other
W	University & Honors & On-Line
X	Data entry error
Y	Standard-vendor HS credit, Online

COURSE_CODE

Course code

COURSE_DESC

Course description

CREDIT_VALUE_EARNED

Course value earned (0-5)

HOW_TAKEN

How course was taken

- 1 Regular Day School
- 2 Summer School
- 3 Extended Day/Night School
- 4 Hospital/Homebound
- 5 Internet/Virtual School
- 6 Independent Study
- 7 Community/Technical School
- 8 Vocational School
- 10 Correspondence Class
- 11 College/University
- 12 Alternative School
- 13 Other
- 14 Local Summer School
- 15 State Summer School

MASTID

NCERDC Encrypted Student Identifier

This variable is an encrypted student id that permits identifying students across datasets. The NCERDC created this variable.

Transcript Data, 2014

Computer file name and date:

TRANSCRIPTS2014.sas7bdat, November 17, 2014

Codebook date (most recent update):

November 18, 2014

Summary:

Data include information from students' high school transcripts, including courses taken, credits, and course grades. These data are linked to other NCERDC student-level datasets.

Origin:

Files were received from the North Carolina Department of Public Instruction.

Case Count:

TRANSCRIPTS2014.sas7bdat has 3,441,696 records

Measures:

Variable Name	Variable Description
ACADEMIC_LEVEL_DESC	Academic level 0 Modified Curriculum 1 Abridged/Adapted (Remedial) 2 Standard Version 3 Applied/Technical 5 Honors/Advanced/AIG 6 Co-op Education 7 Advanced Placement 8 International Baccalaureate 9 Non-Classroom Activity
COURSE_CODE	Course code
COURSE_DESC	Course description
CREDIT_VALUE_EARNED	Course value earned (0-5)
GRADE	Grade level
MASTID	NCERDC Encrypted Student Identifier

Appendix G. ACT Codebook Example

Computer file name and date:

ACT2014PUB.sas7bdat, April 3, 2015

Codebook date (most recent update):

April 6, 2015

Summary:

Beginning in the 2012-13 school year, every 11th grader in North Carolina public schools takes the ACT college entrance exam as part of the North Carolina Standard Course of Study. This files contains scale scores and other academic indicators from the administration of the ACT exam in the 2013-14 academic year.

Origin:

File received from the North Carolina Department of Public Instruction (NCDPI).

Origin file name(s):

ACTGraduatesData2014.txt

Case Count:

ACT2014pub.sas7bdat has 93,194 records.

Measures:

Variable Name

Variable Description

ACT_HSCODE

ACT High School Code

COMBINED_EW_SCORE

Combined English/Writing Score

Score range is 01-36

COMPOSITE_SCORE

Composite Scale Score

This score is set to missing if any of the scale scores (English, Math, Reading, Science) are missing

ENGLISH_SCORE

English Scale Score

Score range is 01-36

GENDER

Gender

F=Female

M=Male

GRADE

Grade

07 = 6th or 7th Grade

08 = 8th Grade

09 = 9th Grade

10 = 10th Grade

11 = 11th Grade

12 = 12th Grade

13 = H.S. Graduate

14 = College Student

15 = Other

GRADUATIONYEAR

Intended Year of High School Graduation

GRD__

High School Grades Earned

See HS_ for list of course extensions

0 = F

1 = D

2 = C

3 = B

4 = A

LEA	Local Education Agency Code
MASTID	Encrypted Master ID
MATH_SCORE	Mathematics Scale Score Score range is 01-36
READING_SCORE	Reading Scale Score Score range is 01-36
SCHLCODE	School Code
SCIENCE_SCORE	Science Scale Score Score range is 01-36
WRITING_SUBSCORE	Writing Subscore Score range is 02-12

Appendix H: North Carolina Institutions of Higher Education

Institution of Higher Education	Affiliation	Type
Barton College	NCICU	4-year, Private not-for-profit
Belmont Abbey College	NCICU	4-year, Private not-for-profit
Bennett College	NCICU	4-year, Private not-for-profit
Brevard College	NCICU	4-year, Private not-for-profit
Campbell University	NCICU	4-year, Private not-for-profit
Catawba College	NCICU	4-year, Private not-for-profit
Chowan University	NCICU	4-year, Private not-for-profit
Davidson College	NCICU	4-year, Private not-for-profit
Duke University	NCICU	4-year, Private not-for-profit
Elon University	NCICU	4-year, Private not-for-profit
Gardner-Webb University	NCICU	4-year, Private not-for-profit
Greensboro College	NCICU	4-year, Private not-for-profit
Guilford College	NCICU	4-year, Private not-for-profit
High Point University	NCICU	4-year, Private not-for-profit
Johnson C Smith University	NCICU	4-year, Private not-for-profit
Lees-McRae College	NCICU	4-year, Private not-for-profit
Lenoir-Rhyne University	NCICU	4-year, Private not-for-profit
Livingstone College	NCICU	4-year, Private not-for-profit
Louisburg College	NCICU	2-year, Private not-for-profit
Mars Hill University	NCICU	4-year, Private not-for-profit
Meredith College	NCICU	4-year, Private not-for-profit
Methodist University	NCICU	4-year, Private not-for-profit
Montreat College	NCICU	4-year, Private not-for-profit
North Carolina Wesleyan College	NCICU	4-year, Private not-for-profit
Pfeiffer University	NCICU	4-year, Private not-for-profit
Queens University of Charlotte	NCICU	4-year, Private not-for-profit
Saint Augustine's University	NCICU	4-year, Private not-for-profit
Salem College	NCICU	4-year, Private not-for-profit
Shaw University	NCICU	4-year, Private not-for-profit
St Andrews University	NCICU	4-year, Private not-for-profit
University of Mount Olive	NCICU	4-year, Private not-for-profit
Wake Forest University	NCICU	4-year, Private not-for-profit
Warren Wilson College	NCICU	4-year, Private not-for-profit
William Peace University	NCICU	4-year, Private not-for-profit
Wingate University	NCICU	4-year, Private not-for-profit
Appalachian State University	UNC	4-year, Public
East Carolina University	UNC	4-year, Public
Elizabeth City State University	UNC	4-year, Public
Fayetteville State University	UNC	4-year, Public
North Carolina A & T State University	UNC	4-year, Public
North Carolina Central University	UNC	4-year, Public
North Carolina State University at Raleigh	UNC	4-year, Public
University of North Carolina at Asheville	UNC	4-year, Public

University of North Carolina at Chapel Hill	UNC	4-year, Public
University of North Carolina at Charlotte	UNC	4-year, Public
University of North Carolina at Greensboro	UNC	4-year, Public
University of North Carolina at Pembroke	UNC	4-year, Public
University of North Carolina Wilmington	UNC	4-year, Public
Western Carolina University	UNC	4-year, Public
Winston-Salem State University	UNC	4-year, Public

Appendix I: Teacher Working Conditions Survey (2014)

Variable Name	Description
POSITION	Respondent's Position at the School 1 = Teacher (including intervention specialist, vocational, literacy specialist, special education teacher, etc.) 2 = Principal 3 = Assistant Principal 4 = Other Education Professional (school counselor, school psychologist, social worker, library media specialist, etc.)
<i>Use of Time in School</i>	
Please rate how strongly you agree or disagree with the following statements about the use of time in your school.	
	1 = Strongly disagree 2 = Somewhat disagree 3 = Neither disagree or agree 4 = Somewhat agree 5 = Strongly agree
TIME_A1	Class sizes are reasonable such that teachers have the time available to meet the needs of all students.
TIME_A2	Teachers have time available to collaborate with colleagues.
TIME_A3	Teachers are protected from duties that interfere with their essential role of educating students.
TIME_A4	Efforts are made to minimize the amount of routine paperwork teachers are required to do.
TIME_A5	The non-instructional time provided for teachers in my school is sufficient.
TIME_A6	Teachers are allowed to focus on educating students with minimal interruptions.
TIME_A7	Teachers have sufficient instructional time to meet the needs of all students.
<i>School Facilities and Resources</i>	
Please rate how strongly you agree or disagree with the following statements about your school facilities and resources.	
	1 = Strongly disagree 2 = Somewhat disagree 3 = Neither disagree or agree 4 = Somewhat agree 5 = Strongly agree
FACILITIES_A	Teachers have sufficient access to appropriate instructional materials.
FACILITIES_B	Teachers have sufficient access to instructional technology, including computers, printers, software and internet access.
FACILITIES_C	Teachers have access to reliable communication technology, including phones, faxes and email.
FACILITIES_D	Teachers have sufficient access to office equipment and supplies

	such as copy machines, paper, pens, etc.
FACILITIES_E	The reliability and speed of Internet connections in this school are sufficient to support instructional practices.
FACILITIES_F	Teachers have adequate space to work productively.
FACILITIES_G	The school environment is clean and well maintained.
FACILITIES_N	The physical environment of classrooms in this school supports teaching and learning.
FACILITIES_O	Teachers have sufficient access to a broad range of professional support personnel.

Community Support and Involvement

Please rate how strongly you agree or disagree with the following statements about community support and involvement in your school.

- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither disagree or agree
- 4 = Somewhat agree
- 5 = Strongly agree

COMMUN_A	Parents/guardians are influential decision makers in this school.
COMMUN_B	This school maintains clear, two-way communication with the community.
COMMUN_C	This school does a good job of encouraging parent/guardian involvement.
COMMUN_D	Teachers provide parents/guardians with useful information about student learning.
COMMUN_E	Parents/guardians know what is going on in this school.
COMMUN_F	Parents/guardians support teachers, contributing to their success with students.
COMMUN_G	Community members support teachers, contributing to their success with students.
COMMUN_H	The community we serve is supportive of this school.

Managing Student Conduct

Please rate how strongly you agree or disagree with the following statements about managing student conduct in your school.

- 1 = Strongly disagree
- 2 = Disagree
- 3 = Agree
- 4 = Strongly agree
- 5 = Don't know

CONDUCT_A	Students at this school understand expectations for their conduct.
CONDUCT_B	Students at this school follow rules of conduct.
CONDUCT_C	Policies and procedures about student conduct are clearly understood by the faculty.
CONDUCT_D	School administrators consistently enforce rules for student conduct.
CONDUCT_E	School administrators support teachers' efforts to maintain discipline in the classroom.
CONDUCT_F	Teachers consistently enforce rules for student conduct.

CONDUCT_G The faculty work in a school environment that is safe.

Teacher Leadership

Please rate how strongly you agree or disagree with the following statements about leadership in your school.

- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither disagree or agree
- 4 = Somewhat agree
- 5 = Strongly agree

LEADERSHIP_T1 Teachers are recognized as educational experts.

LEADERSHIP_T2 Teachers are trusted to make sound professional decisions about instruction.

LEADERSHIP_T3 Teachers are relied upon to make decisions about educational issues.

LEADERSHIP_T4 Teachers are encouraged to participate in school leadership roles.

LEADERSHIP_T5 The faculty has an effective process for making group decisions to solve problems.

LEADERSHIP_T6 In this school we take steps to solve problems.

LEADERSHIP_T7 Teachers are effective leaders in this school.

School Leadership

Please rate how strongly you agree or disagree with the following statements about school leadership in your school.

- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither disagree or agree
- 4 = Somewhat agree
- 5 = Strongly agree

LEADERSHIP_A1 There is an atmosphere of trust and mutual respect in this school.

LEADERSHIP_A8 The school leadership consistently supports teachers.

LEADERSHIP_A9 The school improvement team provides effective leadership at this school.

LEADERSHIP_A10 The faculty and staff have a shared vision.

LEADERSHIP_A11 Teachers are held to high professional standards for delivering instruction.

LEADERSHIP_A12 Teacher performance is assessed objectively.

LEADERSHIP_A13 The procedures for teacher evaluation are consistent.

LEADERSHIP_A14 Teachers receive feedback that can help them improve teaching.

LEADERSHIP_A16 The school leadership facilitates using data to improve student learning.

LEADERSHIP_A17 The faculty are recognized for accomplishments.

LEADERSHIP_A15 Teachers feel comfortable raising issues and concerns that are important to them.

Professional Development

Please rate how strongly you agree or disagree with statements about professional development in your school.

- 1 = Strongly disagree
- 2 = Somewhat disagree

3 = Neither disagree or agree

4 = Somewhat agree

5 = Strongly agree

PRODEV_H1	Sufficient resources are available for professional development in my school.
PRODEV_H2	An appropriate amount of time is provided for professional development.
PRODEV_H3	Professional development offerings are data driven.
PRODEV_H4	Professional learning opportunities are aligned with the school's improvement plan.
PRODEV_H5	Professional development is differentiated to meet the individual needs of teachers.
PRODEV_H6	Professional development deepens teachers' content knowledge.
PRODEV_H7	Teachers have sufficient training to fully utilize instructional technology.
PRODEV_H8	Teachers are encouraged to reflect on their own practice.
PRODEV_H9	In this school, follow up is provided from professional development.
PRODEV_H10	Professional development provides ongoing opportunities for teachers to work with colleagues to refine teaching practices.
PRODEV_H11	Professional development is evaluated and results are communicated to teachers.
PRODEV_H12	Professional development enhances teachers' ability to implement instructional strategies that meet diverse student learning needs.
PRODEV_H13	Professional development enhances teachers' abilities to improve student learning.

Instructional Practice and Support Questions

Please rate how strongly you agree or disagree with the following statements about instructional practices and support in your school.

1 = Strongly disagree

2 = Disagree

3 = Agree

4 = Strongly agree

5 = Don't know

INSTRUCT_P1	State assessment data are available in time to impact instructional practices.
INSTRUCT_P2	Local assessment data are available in time to impact instructional practices.
INSTRUCT_P3	Teachers use assessment data to inform their instruction.
INSTRUCT_P4*	The curriculum taught in this school is aligned with Common Core Standards.
INSTRUCT_P5	Teachers work in professional learning communities to develop and align instructional practices.
INSTRUCT_P6	Provided supports (i.e. instructional coaching, professional learning communities, etc.) translate to improvements in instructional practices by teachers.

INSTRUCT_P7	Teachers are encouraged to try new things to improve instruction.
INSTRUCT_P8	Teachers are assigned classes that maximize their likelihood of success with students.
INSTRUCT_P9	Teachers have autonomy to make decisions about instructional delivery (i.e. pacing, materials and pedagogy).
INSTRUCT_P10*	State assessments provide schools with data that can help improve teaching.
INSTRUCT_P11*	State assessments accurately gauge students' understanding of standards.
INSTRUCT_P12	Teachers believe almost every student has the potential to do well on assignments.
INSTRUCT_P13	Teachers believe what is taught will make a difference in students' lives.
INSTRUCT_P14	Teachers require students to work hard.
INSTRUCT_P15	Teachers collaborate to achieve consistency on how student work is assessed.
INSTRUCT_P16	Teachers know what students learn in each of their classes.
INSTRUCT_P17	Teachers have knowledge of the content covered and instructional methods used by other teachers at this school.

School Characteristics

GSLOyy	School low grade offered UG = Ungraded PK = Prekindergarten KG = Kindergarten 01 -- 12 = First through Twelfth grade 00 = School had no students reported UG and 00 each occurs only in isolation from other codes. When one of these does occur, it is both the lowest and the highest grade.
GSHIyy	School high grade offered UG = Ungraded PK = Prekindergarten KG = Kindergarten 01 -- 12 = First through Twelfth grade 00 = School had no students reported
LEA	Local Educational Agency Code 010-995 = Regular LEAs, (Charter schools alphanumeric) SPE = Special Schools (including Youth Development Centers)
LEANMyy	Name of the education agency that operates this school.
SCHLCODE	School Code
TYPEyy	NCES code for type of school 1 = Regular school 2 = Special education school 3 = Vocational school 4 = Other/alternative school

Appendix J: Excerpt from School Report Card Files, 2013-14

Data file name and date:

schlrptfinal13_14.sas7bdat, March 18, 2015

Summary:

The NC School Report Cards dataset is a snapshot of schools with information about overall school scores for achievement, growth, and performance and to designate that a school has met, exceeded, or has not met expected growth. The data have one record for each public, charter, and alternative school, and data are based on information from all grades within the school.

The NCDPI will no longer designate each school as having met or not met Adequate Yearly Progress (AYP). Reported for each school will be the number of Annual Measurable Objectives (AMOs) and the number of those targets met as well as the percentage of targets met.

This dataset consists of information from the North Carolina School Report Card, the Annual Measureable Objectives Targets, School Performance and Growth, Other Indicators (OAI), AP Test Results, the North Carolina ACT Benchmark Percentages, and SAT Performance Results.

To protect student privacy, the percentage and number of students are not shown if the percentage is greater than 95 percent or less than 5 percent. If the student population for a particular disaggregation is too small to report the value (less than 5 students tested) then the corresponding record is excluded entirely from the dataset. Any percentage that is greater than or equal to 95 percent will appear as 99 percent and any percentage that is less than or equal to 5 percent will appear as 1 percent. Blank cells, N/A, and I (insufficient data) indicate that a school does not have tested grades or sufficient data for reporting.

Results are based on tests given during the 2013-2014 school year, including 2013 summer school, and EOC tests taken by 9th graders prior to entering high school. Results were subject to NCEXTEND1/NCEXTEND2 capping requirements set by the US Department of Education. Retests are not included.

Origin:

North Carolina Department of Public Instruction.

Collection:

DPI collects school summary data each year. For more information, see www.ncreportcards.org. This website includes comparisons of each school to the district and state.

Case count:

schlrptfinal13_14.sas7bdat has 2,572 records and 102 variables.

Measures:

<i>Variable Name</i>	<i>Description</i>
GRADE_SPAN	Grade span
LEA	Local Education Agency Code
SCHLCODE	School Code
SBEREG	SBE Region 1 = Northeast Region 2 = Southeast Region 3 = North Central Region 4 = Sandhills Region 5 = Piedmont Triad Region 6 = Southwest Region 7 = Northwest Region 8 = Western Region

Appendix K: Institutional Review Board Letter of Approval

The logo for NC State University, featuring the words "NC STATE" in white, bold, sans-serif capital letters on a red rectangular background.

Catherine Taylor <cctaylo2@ncsu.edu>

Bartlett - 5557 - IRB Protocol approved

IRB Administrative Office <pins_notifications@ncsu.edu>

Tue, Apr 28, 2015 at 3:30 PM

Reply-To: debra_paxton@ncsu.edu

To: cctaylo2@ncsu.edu

Dear Catherine Taylor:

IRB Protocol 5557 has been approved

Title: (DEB) A Path Analysis Approach to Understanding the Path to College: How High School Type and Factors Affect Students' Predisposition to College Degree Completion

PI: Bartlett, James

The project listed above has been reviewed by the NC State Institutional Review Board for the Use of Human Subjects in Research, and is approved for one year. This protocol will expire on 04/28/2016 and will need continuing review before that date.

NOTE:

1. You must use the approved consent forms (available in the IRB system with the documents for your protocol) which have the approval and expiration dates of your study.
2. This board complies with requirements found in Title 45 part 46 of The Code of Federal Regulations. For NCSU the Assurance Number is: FWA00003429.
3. Any changes to the protocol and supporting documents must be submitted and approved by the IRB prior to implementation.
4. If any unanticipated problems occur, they must be reported to the IRB office within 5 business days by completing and submitting the unanticipated problem form on the IRB website.
5. Your approval for this study lasts for one year from the review date. If your study extends beyond that time, including data analysis, you must obtain continuing review from the IRB.

If you have any questions, please don't hesitate to call us.

Thank you,
The IRB Team