2017

Understanding selective college access for minority, low-income high school students

BOSTON UNIVERSITY

SCHOOL OF EDUCATION

Dissertation

UNDERSTANDING SELECTIVE COLLEGE ACCESS FOR MINORITY, LOW-INCOME HIGH SCHOOL STUDENTS

by

PAULINE ELIZABETH JENNETT

B.B.A., City University of New York, Baruch College, 1987
M.B.A., University of Pennsylvania, The Wharton School 1992
M.Div., Boston University, 2005

Submitted in partial fulfillment of the

requirements for the degree of

Doctor of Education

2017

Approved by

First Reader _____

Hardin L.K. Coleman, Ph.D.
Dean of the School of Education
Professor of Counseling Psychology and Human Development

Second Reader _____

V. Scott Solberg, Ph.D.
Professor of Counseling Psychology and Applied Human Development

Third Reader _____

Anjulet Tucker, Ph.D.
Chief of Operations, Office of the President
Emory University

Acknowledgments

I would like to thank my First Reader, Dean Hardin Coleman, who has been a beacon of light to me over the past years. Dr. Coleman is a mentor, advocate, true teacher, and guide. I am grateful that he allowed me to utilize his research model, The Coleman Minority Student Achievement Model, to investigate my research topic. I was honored to walk with him during my dissertation journey.

Second Reader, Dr. V. Scott Solberg: I am grateful that I was able to take two of Dr. Solberg's research classes through which I learned in-depth qualitative research methodology and theory. I eagerly awaited each of Dr. Solberg's classes, feeling privileged during group class time and cherishing individual sessions during my dissertation process. Thank you so much for agreeing to be my second reader.

Third Reader, Dr. Anjulet Tucker: Thank you Dr. Tucker for many late nights and early morning talks as you assisted with the IRB process, the in-depth sociological perspective of the Black Middle-Class structure, and your overall knowledge of walking successfully through the doctoral process as a woman of color. Your achievements and brilliance remain an inspiration to me, and I am glad that we can proudly represent NYC together!

I also would like to thank all of the incredible students who were in my survey sample, and the executives of this collegiate access organization. Thank you for taking the time to allow me insight into your life that made this research possible.

In addition, I extend deep thanks to cherished BU Faculty members, Dr. Scott Seider, Dr. Jeanne R. Paratore, and Dr. Allen G. Harbaugh. I also thank Jimin Oh, my research assistant, from the University of Pennsylvania School of Education, and Stephen Roeder from Boston University School of Education.

Brief acknowledgement to family and friends: I dedicate my dissertation to my lovely 107-year-old grandmother, Ruth Adolphus Bowman Jennett, and my loving nephew Brenton Paul McCaskill, RIP, and his brother's keeper, R.L. McCaskill. In addition, I am indebted to my nieces and nephews including Christian, Nicolas, Tunisia, Marlaine, Tiana, Ariana, Alisha, and Danika, who bring me so much laughter. I am also grateful for loving friends and family during this process, including Camille, Cherita, Ericka, Felecia, Nikita, Teresa, Maribel, Maritza, Sheron, Sonia, Vanessa and Zara; for my editors Ulrike and June; and for my sister Esther Plummer who proofread during critical seasons. I am thankful for Mom Fraser, Aunt Olivia, and Aunt Illona for their enduring support. Lastly, thanks to my mom – Rita, and dad - Andrew, and siblings: Andrew, Danielle, Deborah, and Esther. I appreciate you.

UNDERSTANDING SELECTIVE COLLEGE ACCESS

FOR MINORITY, LOW-INCOME HIGH SCHOOL STUDENTS

PAULINE ELIZABETH JENNETT

Boston University School of Education, 2017

Major Professor: Hardin Coleman, Ph.D., Dean of the School of Education, Professor of Counseling Psychology and Human Development

ABSTRACT

The purpose of this investigation was to explore a contextual intervention of effective college advising programs for ethnic minority students that helps them acquire the skills and personal dispositions necessary to apply to, get into, and stay at selective colleges and universities. Utilizing a regression analysis, this analytical study examined 199 low-income minority high school students in a contextual college intervention program from 2014 to 2015. The central hypothesis being tested was that intervention programs that were successful at getting lower income ethnic minority youth to apply to, get into, and stay at selective colleges and universities attract and maintain students with higher levels of personal factors, especially factors of resilience such as motivation, grit, and perseverance. The research questions sought to examine the relationship between effective college advising programs for minority, low-income students (contextual intervention) and what social and emotional or resilient skills (personal factors) their students possess to become college and career ready, and whether possessing these skills differentiates those students who are accepted into highly selective colleges from those who are accepted to less selective colleges.

A growing body of research demonstrates that admittance to selective colleges often leads to increased social status, higher income, and improved job opportunities. It has been demonstrated that getting into a highly selective college matters. Caucasian and minority students alike who graduate from highly selective colleges experience increased lifetime earnings and prestige (Bowen, 1998, Avery, 2003).

A total of 199 minority high school student participants were surveyed during their senior year in high school. Survey items were drawn from Solberg's Success Model Survey (2007) and Duckworth's Grit Model (2007). Duckworth validated a self-report questionnaire called the Grit Scale where "Grit" is defined as trait-level perseverance and passion for long-term goals. Solberg's Success Model Survey is a composite of several scales: Career Search Self-Efficacy, Goal-Setting, and Motivation to Attend School; Academic Self-Efficacy; and Social Connections. (Sample survey questions in Table section.) The dataset also included participant demographic data, program participation information, and college admit results.

This investigation tested Coleman's (2006) Minority Student Achievement Model to demonstrate that significant personal factors including academic ability, diligent use of resources, perseverance, and strategic involvement in youth development initiatives, combined with a successful college contextual intervention, were significant indicators regarding increased admittance to selective colleges.

INDEX WORDS: Higher Education, College Access, Quantitative Study, Low-income, Minority College Students

TABLE OF CONTENTS

APPENDICES

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1: INTRODUCTION

The purpose of this study is to explore the critical personal, contextual, and structural factors that contribute to selective college admittance among low-income, minority high-school students. This chapter will provide background on the purpose of higher education in a larger societal context. It will also highlight the inherent barriers in gaining access to selective higher education institutions for underrepresented minorities and how that is a problem for individuals involved in the complex college admissions process.

Statement of the Problem

Supreme Court Chief Justice Earl Warren succinctly stated the importance and role of education as "the foundation of good citizenship, a principal instrument in awakening the child to cultural values, in preparing him for later professional training" (Ogletree, 2005, p. 6). Along with many others, DaSilva (2007, p. 21) suggests that many educational advantages are universal when he says: "The school system has become the main bearer of working-class hopes for a better future, especially where the hopes of unionism or socialism have died."

Yet the promise of advancement through education is not accessible to all Americans. Edley (1998) has pointed out that "economic and social disadvantages remain powerfully linked with color, and this linkage exacts an enormous toll on the perception and reality of opportunity in America" (p. 71). Ogletree (2004) suggests that there are "two nations, separated by race, income, and opportunity" (p. 251). The ability

to provide equal opportunities to lower-class, minority students may be essential to reducing health, educational, and financial disparities in the United States, but we have failed to achieve those outcomes because we do not provide equal opportunities to all. Although access to a quality education has, historically, been the pathway to opportunity, many poor and ethnic minority students in the United States – where minority "of race refers to traditionally 'underrepresented' individuals including Blacks, Hispanics (or Latinos), and Native Americans" – do not have equitable access to a high-quality education, and this leads to academic and economic disparities (Gurin, 2004 p. 187). Blacks, Hispanics/Latinos, and Native Americans are also often referred to as "people of color" (Tatum, 1997, p. xv).

The current study advances prior literature by examining the relationship between how the contextual intervention of effective college advising programs for ethnic minority students helps those students acquire the skills and personal dispositions necessary to apply, get into, and stay at selective colleges and universities.

LaGuardia (1998, p. 98) notes that "the creation of more educational opportunities and greater access to higher education, defined as 'postsecondary schooling,' often referred to as 'colleges and universities' (Sander, 2012, p. xvii) for minority students has become a major policy priority of the higher education community," because "upward mobility has always been considered a hallmark of life in the United States, at once a unique American ideology and a driving force behind individual motivation" (Landry, 1987, p. 22).

The college degree remains a credible credential, evidence of a certain level of academic accomplishment needed for jobs in sectors as diverse as engineering, business, communications, education, and science. Many researchers note that a college degree is now often regarded as the minimum requirement for life success in the U.S., replacing the high school diploma of years past. Mitchell (2001, p 15) argues that "the pursuit of college credentials is the widest and most dependable path to the good life that American society currently provides and the terms of college admission have become the instructions families use when figuring out how to ensure their own children's future prosperity." Furthermore, research suggests that a college degree continues to pay off in increased lifetime earnings and career opportunities (Berg, 1999, Sander, 2012, Muska, 2011). In order to close the opportunity gap between those who are born with wealth and those who are born in poverty, a gap that is particularly difficult to close for ethnic minorities, society needs to develop and implement effective strategies for helping those who come from historically disadvantaged groups to acquire a college degree. The focus of this investigation is to gain a better understanding of how students from lower-class backgrounds and/or minority status can gain access to selective colleges and universities as a strategy for becoming upwardly mobile and how to increase access to those institutions for such students.

A central assumption behind this investigation is that there is significant truth to the hypothesis that attending a selective college matters in the sense that it brings with it material and social advantages. Economic status often directly correlates with advantage in many educational scenarios. In fact, "admission to elite schools is highly correlated

with parents' socioeconomic standing – in large measure because affluent parents translate their privilege into educational opportunities, which in turn produce the academic achievement rewarded by selective colleges" (Mitchell, p. 20). Upper-class parents can easily pay for the extra support it can take to get into a selective college, such as tutors for the SAT and high school standardized tests and/or online study materials. Regarding the importance of test scores in the admissions process, Sternberg argues that "test scores are correlated highly, although not perfectly, with social class" (Sternberg, 2010, p. 7). i

Admittance to selective colleges, defined as colleges that accept less than 50% of their applicants (McPherson, 1990, p. 54), often leads to increased status, higher income, and more job opportunities. The benefits of elite college admissions include college brand prestige and elite alumni affiliation. An elite college education also provides distinct signals of success to the larger community. In addition, there is data that shows that going to selective colleges does pay off for low-income students. A model that studied interactions between school-average SAT and parental income notes the "gain from attending a college with a 200-point higher average SAT score for a family whose predicted log income is in the bottom decile is 8 percent, versus virtually nil for a family with mean income" (Berg, Krueger, 1999, p. 1518). The model further indicates that "students who attend higher tuition schools earn more after entering the labor market and…the coefficient on the interaction term for parental income and tuition is negative, indicating that there is a higher payoff to attending a more expensive school for children from low-income families" (Berg, 1999, p. 1519). The following quotation indicates the

symbolic benefits of an elite education.

> A signal advantage arises when people who do not know you well, but can read your resume or talk to you at a cocktail party, take your association with an elite college to be an indication of high quality. In effect, a job interviewer may use the decisions of college admissions offices as a screening device, favoring graduates from more selective colleges because they gained a stamp of approval in the rigorous evaluation process to gain admission to college (Avery 2004, p.8).

Furthermore, a strong alumni network can translate into coveted job positions. For example, many elite corporations, such as Goldman Sachs, Procter & Gamble, and McKinsey and Bain, are heavily populated with senior partners and top executives who are graduates of elite colleges. They see themselves as being top talent who, in turn, prefer to interview and hire candidates from a specific group of selective colleges.

In summary, getting into a highly selective college matters. Caucasian and minority students alike who graduate from highly selective colleges experience increased lifetime earnings and prestige (Bowen, 1998, Avery, 2003).

Yet, "despite initial gains, minorities are still underrepresented in such selective four-year colleges" (Karen, 1991, Bowen, 1998, Carnevale, 2003, DaSilva, 2007, Schmidt, 2010). This problem is ongoing; scholars note that "prior to the civil rights era, Americans of African origin were largely excluded from selective colleges and universities in the United States through a combination of de facto and de jure

mechanisms" of discrimination (Massey, 2006, p. 1).

As we examine a specific subset of selective colleges, researchers find that minority group underrepresentation increases as the selectivity of the school increases. Kahlenberg (2010) reports that, "Blacks comprised 15.1 percent of the college-age population…in 2008 Blacks accounted for just over 5 percent (instead of the expected 15.1 percent) of the enrollment at the top fifty colleges as ranked by U.S. News & World Report. Hispanics accounted for only 7 percent (instead of the expected 17.3 percent) of the enrollment" (Kahlenberg, 2010, p. 130). Even as colleges become more racially and ethnically diverse, they remain economically homogenous, serving predominantly students of affluent families, and failing to support aspirations for upward mobility (Ward, 2005, Kean, 2006, Kahlenberg, 2010, Reardon, 2013).

Carnevale & Rose (2003, p. 102) suggested that "under current Affirmative Action policies, racial minorities are underrepresented and that the underrepresentation of low-income students is even greater than racial minorities" (Carnevale & Rose, 2003, Charles, 2009, DaSilva, 2007). A review of the total percentage of minority students on selective campuses today shows that "students of color remain relative newcomers on campuses initially built to serve Anglo-Europeans. The basic character of American higher education evolved over two full centuries before African American young people, let alone Latino and Asian American students, were welcomed to attend college with whites" (Mitchell, 2001, p. 142).

Many critics of Affirmative Action policies suggest that this practice is no longer

needed since larger segments of minorities are now enrolled in selective private and public domestic universities. However, many minorities enrolled in selective colleges are from a particularly well-to-do social class, which possess higher incidence of college and graduate school graduation, elite secondary schooling, and home ownership rates. (Table 1) In fact, annual income over $100,000 in this selective group, are three times the national average for all Black households in the United States.

A new study from researchers at Princeton University and the University of Pennsylvania finds that "large numbers of Black students at the nation's most selective colleges and universities are either financially well off or have parents who were born in foreign nations. Low-income Blacks tend to be the descendants of American slaves who suffered from generations of racial discrimination during the Jim Crow era. For the most part, they are not the students benefiting from today's race-sensitive admissions programs at America's most selective colleges" (*American Journal of Education*, 2007).

Table 1: Blacks in Selective Colleges

Sample of 28 Selective Colleges	Mother is a college graduate (%)	Mother has graduate degree (%)	Father is a college graduate (%)	Father has graduate degree (%)	Median home value (ooo)	Private high school	Family's annual income, >$100,000
Immigrant Origin	54.5	28.0	70.0	43.6	220.6		23.8
Native-born Black students	57%	25.9%	55.2%	25%	193.2	27%	25.5% *All black households: 7%

Massey, D., Mooney, M., Torres, K., & Charles, C. (2007). Black Immigrants and Black Natives Attending Selective Colleges and Universities in the United States. American Journal of Education, 113(2), 243–271. DOI: 10.1086/510167

Therefore, this simplistic view of the significant influence of Affirmative Action, which is defined as “any effort taken to expand opportunity for women or racial, ethnic and national origin minorities by using membership in those groups that have been subject to discrimination as a consideration” (Edley, 1996, p. 17) does not take into account the reality that “the issues of color and class inequality in American society are at the heart of the future of U.S. education” (DaSilva, p. 192). A report by Georgetown University entitled "Separate & Unequal" (Carnevale, 2013, p. 9) asserts “African-American and Latino youth—especially those from low-income backgrounds—are underrepresented at the nation’s 468 most selective four-year colleges and overrepresented at the 3,250 open-access two- and four-year institutions.”

As a result, even when colleges and universities highlight the importance of “diversifying” their student population, they often fail to open doors to students who cannot open them on their own – that is students who are intellectually talented, but lack the resources (e.g., legacy, academic coaches, family support) that are routinely drawn upon by their economically privileged peers, with the result that those less privileged but equally talented students continue to be closed out of the admission process.

Gaining admissions to these selective colleges demands an understanding and mastery of the complex strategies employed in the selective admissions process. To support students who do not have access to this knowledge, non-profit executive administrators, high school guidance counselors, parents, and the students themselves must become familiar with those strategies, which include writing college essays that effectively tell their unique story, a broad range of extracurricular activities, high quality

letters of reference, the completion of a rigorous academic curriculum, excellent performance on standardized testing, including SAT and PSAT, as well as making college selection choices that align with the student's strengths. And then, one must also master the financial aid process.

Given the need for programs that can help lower-income ethnic minorities apply for admission to highly selective colleges and universities, it is important for us to identify and understand the common elements of effective programs so that when these efforts are replicated, they have a reasonable opportunity of success. A closer look at these programs discovers several similar tenets underpinning their effectiveness with low-income students. These include intervention strategies to facilitate improvement in areas of academic rigor, academic and guidance counseling, financial aid and assistance, and increased exposure to middle- and upper class social and cultural activities.

Although we have no firm answers, we do have some ideas of whether this is true. To improve selective collegiate admission rates among this population, Avery (2003) suggests that personalized, targeted coaching that helps with college selection, college essays, and written application skills, as well as financial aid assistance that encourages students to engage more actively in the process, can have a positive impact. In addition, Coleman (2006) identifies specific contextual, personal, and social stratification factors that lead to minority achievement. This study, then, was designed to explore these hypotheses to see whether, in fact, they can be validated using a quasi-experimental methodology.

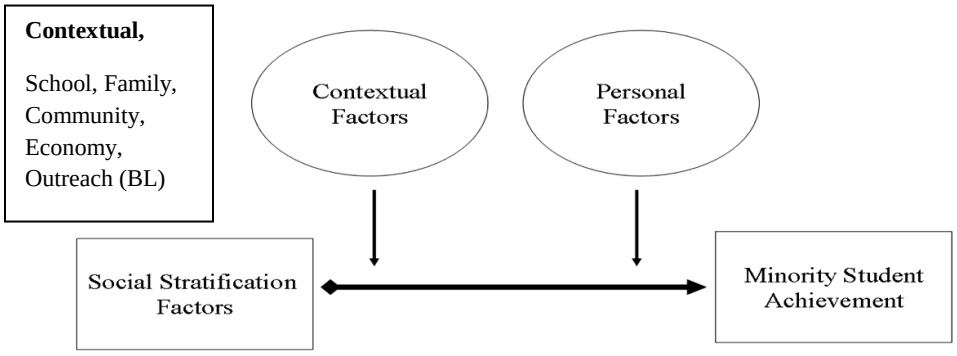
Purpose of the Study

The purpose of this investigation is to review the extant literature on this topic to articulate a model of best practices and then survey attendees of an effective collegiate intervention program to understand how they prioritize the usefulness of these best practices. Some high potential, low-income students of color manage to get noticed and accepted by selective colleges, and the purpose of this correlation analysis survey study is to understand how that happens. If we could understand how doors are opened for some, we could work toward putting resources and policies in place that would open doors for others. Yet this study would be incomplete without a closer examination of the personal factors including resilience, motivation, and engagement that affect the outcomes of high potential, low-income students of color.

> There are many best practices that minority students who achieve use, and it is important to study the relationship between various factors (i.e., intellective competence, social skills, cultural identity, bicultural competence, and strategies for coping with cultural diversity) and academic performance. Investigations need to be designed that will allow us to understand these relationships both in isolation and within the complex settings in which ethnic minorities perform (and determine) which part of this relationship is a function of attitudes and which part is a function of skills or abilities. This is an important distinction that needs to be consistently applied in the investigation of resilience (Coleman, p. 13, 9).

The interplay of these factors is outlined in Figure 1.

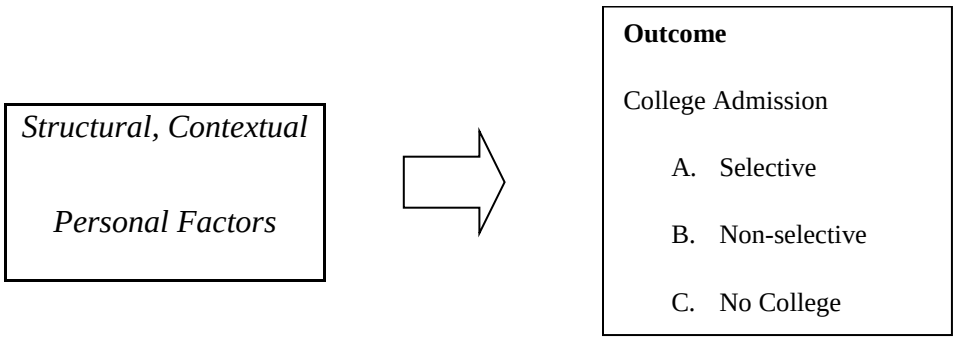
Figure 1: Coleman Minority Student Achievement Model



Coleman Minority Student Achievement Model. (Coleman, H.L.K., (2006). Minority student achievement: A resilient outcome? In D. Zinga (Ed.). Navigating Multiculturalism: Negotiating Change, Cambridge Scholars Press p. 3)

If we apply Coleman's minority student achievement model to pre-collegiate outreach programs, we can readily see that these programs are part of the contextual factors that facilitate the acquisition of the personal factors that ethnic minority students need to apply, get in, and stay at highly selective colleges and universities (Figure 2).

Figure 2: Adapted Minority Student Achievement Model



Minority Student Achievement Model. (Coleman, H.L.K., (2006). Minority student achievement: A resilient outcome? In D. Zinga (Ed.). Navigating Multiculturalism: Negotiating Change, Cambridge Scholars Press p. 3)

Coleman's Minority Student Achievement Model is an application of Bronfenbrenner's (1977) perspective on the ecological factors that influence human development, which is "conceived topologically as a nested arrangement of structures, each contained within the next" (Bronfenbrenner, 1977, p. 514). Segmentation, encompassing race, class, and gender, broadly relates to Bronfenbrenner's Macrosystem, which "refers to the overarching institutional patterns of the culture or subculture, such as the economic, social, education, legal, and political systems, of which micro-, meso-, and exosystems are the concrete manifestations. Macrosystems are conceived and examined not only in structural terms but as carriers of information and ideology that, both explicitly and implicitly, endow meaning and motivation to particular agencies, social networks roles, activities, and their interrelations" (Bronfenbrenner, p. 515).

In Coleman's contextual segmentation, the "microsystem is the complex of relations between the developing person and environment in an immediate setting containing that person (e.g. home, school, workplace, etc.) A setting is defined as a place with particular physical features in which the participants engage in particular activities in particular roles (e.g. daughter, parent, teacher, employee, etc.,) for particular periods of time" (Bronfenbrenner, p. 514).

Bronfenbrenner notes that, "many cross-cultural studies…focus attention almost exclusively on the characteristics of [the] individual[s] rather than on the social contexts in which these individuals are found" (Bronfenbrenner, p. 527). This research will center on the characteristics that are embedded in the larger structural and contextual societal contexts.

As noted, the purpose of this study is to explore the critical personal, contextual and structural factors that contribute to selective college admittance among low-income minority high-school students.

Building on Coleman's model of minority student achievement, this investigation will address the following research questions.

Research Questions

The organizing research questions for this study center on the relationships between personal factors in the minority student achievement model and selective collegiate admissions practices.

1. To what extents do interventions in contextual factors modulate the selective collegiate outcome?

2. To what extent do relevant personal factors (independent variables) individually and collectively predict how participants in an effective pre-collegiate program get admitted into a selective university?

3. Is there a moderating effect on college admission outcomes between active participation in these programs and personal factors?

Importance of Study to Higher Education

Research has provided evidence of the importance of college access for all and the benefits of attending an elite institution (Armando, 1998, Golden, 2006). Yet many low-income minority students still have not acquired sufficient knowledge about how and

why to navigate the selective collegiate admissions process to promote their upward mobility and higher education experience. This limited foundation of in-depth experiential knowledge may be one of the reasons why academically qualified, low-income students are still not taking full advantage of the elite and selective college options open to them.

Hypothesis

The central hypothesis of this investigation is that, although many low-income minority students who apply to a selective college share many key contextual and social stratification characteristics, it is personal factors (e.g. motivation, resilience, engagement, and bicultural competence) that differentiate outcomes in this application process. Identifying psychological factors that impact academic outcomes is especially critical for low-income and ethnically diverse youth who face a myriad of social and economic barriers (Close, 2007, p. 1).

To test this hypothesis empirically, this investigation focused on the personal factors of students who were successfully coached to gain admittance to selective[ii] colleges, including four-year minority serving institutions, with admission rates less than 50% while accounting for contextual interventions. A correlation analysis evaluation of 199 students formed the basis of my research.

CHAPTER 2: LITERATURE REVIEW

The purpose of this study was to explore the critical personal, contextual, and structural factors that contribute to selective college admittance among low-income minority high school students. This chapter provides the critical analysis of the research concerning how higher education continues to be a key stepping-stone to professional and personal accomplishment and achievement in the United States (Landry, 1987, Armando, 1989, Berg, 1999, Lipson & Wixson, 2009, Sander, 2012, Muskas, 2012). Over the last several decades, research has provided evidence that a college education is essential for an individual's financial and cultural achievement. Further, post-secondary education allows the transmission of knowledge of certain key skills and relationships that provide the foundation for professional success. According to a U.S. Department of Labor report, certain skills will continue to be critical in the twenty-first century, skills such as "problem-solving, human interaction, technology and basic skills including reading, writing and computation" (Joseph, 2001, p. 89).

Historical Findings: Findings from Education and Selective Admissions Field

This literature review supports the hypothesis that one of the reasons that so few ethnic minorities are accepted into and attend selective colleges is that the current process used to support such applications is ineffective at best and discriminatory at worst in that it does not provide all students with the support needed to acquire the cultural capital to be successful in the process. This summary of the literature supports the proposal that we need to know more about the cases in which ethnic minorities are accepted into and

attend selective colleges so that we can use them to design a more effective collegiate preparation system that will increase the numbers of ethnic minorities attending these colleges.

The Importance of Elite Colleges

A central assumption behind this investigation is that attending a selective college matters, particularly as regards future economic status. We also note that, "admission to elite schools is highly correlated with parents' socioeconomic standing—in large measure because affluent parents translate their privilege into educational opportunities, which in turn produce the academic achievement rewarded by selective colleges" (Mitchell, p. 20). As we examine the importance of test scores in the admissions process, we also remind ourselves of Sternberg's finding that "test scores are correlated highly, although not perfectly, with social class" (Sternberg, 2010, p. 7). [iii]

As noted, admittance to elite colleges often leads to increased status, higher income, and more job opportunities in later life. The benefits of elite college admissions include college brand prestige and elite alumni affiliation. An elite college education also provides distinct signals of success to the larger community. Bowen and Bok (1998), past presidents of Princeton and Harvard respectively, gathered information on the lives of graduates from twenty-eight prominent schools some twenty years after college. They studied the results of forty-year-olds (those who had graduated in 1980) in some depth. They found that graduates from the more selective institutions (those with the highest average SAT scores for entering freshman) had significantly higher average incomes than graduates from the less selective institutions" (Avery, 2004, p. 4).

Furthermore, a strong alumni network can translate into coveted job positions. Attending a selective college often returns significant dividends (Bowen, 1998, Avery, 2003, Carnevale & Rose, 2003, Sander, 2012). Educational scholar Richard Sander postulates "the possibility that the super-elite colleges and professional schools are sui generis, in a class by themselves. Going to Harvard or Yale confers lifetime reputational advantages and opens doors both to school and afterward that might make important differences in careers" (Sander, p. 108). In summary, getting into a highly selective college matters.

Researchers have found that monetary factors often play a large role in the popularity of selective colleges; "selective colleges spend as much as four times more per student and subsidize student spending by as much as $24,000, compared to a student subsidy of as little as $2,000 at the least selective colleges" (Carnevale & Rose, 2003, p. 107).

Selective colleges are inspired to do this because of the aspirational belief that they become meeting grounds for the children of prominent families from geographically distant cities, training grounds for the inculcation of gentlemanly and womanly virtues, and proving grounds for the demonstration of cultural literacy, critical intellect, and leadership capacity. Historian Harold Weschler calls this a "selective function," which sorts young contenders for social prominence (Mitchell, 2001, p. 34).

Historically, selective schools chose their applicants from a very narrow group of students. In fact, Lehman (2010, p. xv) points out that:

> prior to 1933, Dartmouth actually had a list of private high schools from which it accepted applicants. These were "feeder" high schools because the college counselors would call up the admissions officers and tell them which students they should accept, thereby feeding their students into the specific college via a direct pipeline. In the 1920s, these high schools included some of the prestigious New England preparatory schools, such as Phillips Academy at Andover, in Massachusetts and Phillips Exeter Academy at Exeter, in New Hampshire.

Feeder schools still exist. Among them are Milton Academy, Exeter, Boston Latin, as well as Sidwell and Germantown Friends Schools, to name only a very few. [IV]

When viewed through these lenses, the entire field of elite collegiate admissions can be viewed as a selectively functioning mechanism that weeds the haves – or the accepted students- from the have-nots.

Historically, the most elite private colleges were populated with students from elite secondary schools. Golden (2006) identifies the systemic grooming of prospective applicants by elite private secondary schools, including Groton, Andover, and St. Paul's, to gain admission into elite universities. These schools' rigorous curriculum, luxurious extracurricular facilities and emphasis on achievement, coupled with tuition in the $30–$45,000 range are not always readily accessible to low-income minorities without generous financial assistance. Another startling statistic is that "before 1945, elite private

colleges like Harvard and Yale, were largely in the business of reproducing a privileged social class. Between 1906 and 1932, four hundred and five boys from Groton applied to Harvard. Four hundred and two were accepted" (Menand, 2011, p. 1). Feeder schools may seem to be a thing of the past, but upon examination of the backgrounds of selective college applicants today, it is not uncommon to see a smaller data set of non-selective public high schools among the admitted pool. We can note that:

> Virtually all graduates of the top US boarding schools (who comprise 1 percent of American high school enrollment) enter college, compared to 76 percent of students from Catholic and other private schools, and 45 percent of all public school seniors. These super-privileged students, nine in ten of whom are children of professionals and business managers (two-thirds of their fathers and one-third of their mothers attended graduate or professional school) are also much more likely to land on the most prized campuses, even controlling for scholastic aptitude scores: in 1982, nearly half of graduating "preppies" applied to Ivy League schools and 42 percent of those applicants were admitted, as against 26 percent of all candidates nationwide...thanks to close organizational ties and active recruiting funnels between boarding schools and high status private colleges (Bourdieu, 1998, p. xv).

Although it is self-evident, it is important for this investigation to state that getting into elite colleges is inherently a challenge due to their selectivity. In 2015 only 5.6% of

the applicants to the freshman class at Harvard University were accepted. Students need good grades, good test scores, lots of extracurricular activities, and, often, family members who attended the school (and preferably, are generous donors to the institution as well).

As we take a closer look at the smaller subset of four-year elite colleges, we discover that competition for admission to these colleges continues to be highly competitive. Yet Bok (1998) challenges the common perception that it is exceedingly difficult to gain admittance to most colleges; he reports that only about 20 to 30 percent of all four-year colleges and universities have enough applicants to be able to pick and choose among them. The vast majority of undergraduate institutions accepts all qualified candidates, and thus they do not award special status to any particular group of applicants, defined by race, or on the basis of any other criterion (Bowen, 1998, p. 15).

However, when one looks only at those colleges that have enough applicants to be selective, a different picture emerges: top elite domestic colleges have an average admissions acceptance rate of only 15% (Muska, 2011) — (See Appendix F). Although Bok accurately indicates that there is room in college for all qualified applicants, there is not room for all qualified applicants in those colleges that are more likely to provide their graduates with significant access to upward mobility. The final authorities or gatekeepers, defined as "entities deciding for whom the gates will be opened, in this case with offers of admission to postsecondary schooling opportunities" (Muska, 2011, p. 42), and thus decision-makers for entrance into higher education’s selective universities are the admissions officers themselves.

Themes of class and privilege also emerged when we examine the typical background of selective admission officers. A key gatekeeper in the admissions process is often the admissions officer or director who screens, reads applications, interviews, and evaluates for acceptance or rejection the collegiate applicants. Interesting nuances between admissions officers became clear during my research. Admissions officers often closely reflect the institutions that employ them. For example, historically, during an "era in which most people going to elite colleges were from socially elite families, admission officers were themselves mostly from elite families" (Sternberg, 2010, p. 13). This practice would suggest that similar demographics, e.g. upper-class demographics, among applicants and admissions officers could continue to replicate similar demographics in an admissions pool.

Social Stratification

The comment that selective colleges tend to replicate the class status, or social stratification, of their admitted students demands a closer look at the meaning of class in higher education. Class influences all the factors of familial support, academic preparation (including pre-collegiate counseling), and involvement in certain extracurricular activities. Prior to examining the meaning of "class" for college admissions, it is critical to define what class represents to diverse populations. Class is often commonly correlated to income, but an accurate definition is far more encompassing.

The Meaning of "Class" or Social Stratification

Class is often defined as a system of income, status, and wealth. Historically, the original definition from Karl Marx, the prominent sociologist, defines classes as bonded, categorical groups, whose identity derives from their different relationships to the means of production. Marx tended to contrast those who owned the means of production (large corporations and banks) with those who made a living by working for these owners (DaSilva, p. 5). For the purposes of this paper, from an income perspective, the upper class is approximately 1 to 5 percent of the population. Upper-class households make approximately $150,000+ a year (the 5%), or over $250,000 a year (the 1%) and have access to significant social and capital resources.[iv] The upper-middle class has an income of $100,000 or more annually and is the top one-third of U.S. incomes. The lower-middle class earn between $32,500 and $60,000 (Alhanati, 2012).

As mentioned earlier, the relevance and discussion of class is critical, because it is the placement of lower-income students in the lower-class categories that often presents formidable barriers to their admission to selective colleges, which are typically populated by majority upper-middle to upper-class student populations. Class, regardless of race, is often a determining factor in the ability to access power, wealth, and opportunity. One middle-school principal aptly describes power in monetary terms: “The power is neither Black nor White, green–as in money, that’s where the power is. Rich people have clout. Poor people don’t have clout” (DaSilva, p. 139). The history of public education in the United States tells us that issues of equity have always been tied closely to educational attainment. Regarding class and education, “young people from groups with fewer

resources such as lower socio-economic status, limited social capital, or non-dominant cultural position, are often far less likely to have access to first-rate educational opportunities" (Diamond, 2006, p. 495). Socio-economic differences translate directly to key educational factors. For instance, local taxes fund school resources, so poor neighborhoods have fewer resources to fund exceptional schools. Whether one is Black or White, if one lives in a wealthy neighborhood, one's local schools will have better resources.

Upper-class society has been described as "a district stratum in the social hierarchy, which we hereby dub the cognitive elite." (Murray, 2010, p. 25). Increased social capital and income allows certain segments of the upper-class population to navigate the college admissions roadmap easily and provide their students with ongoing support to ensure high levels of college graduation. Sociologist Pierre Bourdieu (1979) astutely notes that:

"The ability of the upper strata of society to maintain power and control through economic capital, income, wealth and property is not the only form of capital necessary for social reproduction." (Bourdieu, 1979) For instance, elite students whose status offers them the opportunity to travel seem to be more "intelligent" than other students, simply because the knowledge they have gained from these trips is reflected in what is valued in schools. When high status, elite students' taste is seen as valued knowledge within the educational system, other students' taste and the knowledge that informs it is devalued. (Bourdieu & Passeron, 1979).

In short, the social and economic status of a parent is a significant predictor of the social and economic status of a child (Bourdieu, 1986; Duncan & Brooks-Gunn, 1997; Sommerfeld, 2009; Coleman, 2007).

Karen (1991) summarizes published and unpublished research on the intersection of class and higher education for African Americans, women, and working-class youth from 1960 to 1986, as well as access to elite institutions among these groups. During the early 1970s competition for "highly able" black students became intense, with prestigious colleges offering them all-expenses-paid campus visits. Such recruitment was more prevalent among upper-tier than in lower-tier institutions. He found that there were increases in black attendance at top institutions between the mid-1960s and mid-1970s. He argues that subordinate groups that mobilized politically, namely, women and blacks, were able to increase their representation not only in higher education generally, but even in those institutions that heightened one's probability of gaining access to elite occupational sectors. Working-class students, who did not mobilize, were able to increase their access to college primarily because of the absolute number of places that opened, but were not able to gain access to the top colleges.

The unique circumstances of working-class students are enmeshed in the origins of class stratifications. Sommerfeld (2009) in an investigation of how subjectively identified "middle-class" white women understand and negotiate their social class position, points out that, "(with regard to social class, this 'background' is most fundamentally established in our home environments through the transmission of cultural capital. In childhood, we are socialized into the cultural practices of our parents, family,

and community" (see Bourdieu, 1977).

We are taught about the 'right' ways to interact with others (as suggested by Dewey's statement regarding interpersonal distance), to behave in public, and to engage in conflict, and we are socialized to put precedence on certain values over others. "Although these behaviors and values can certainly be attributed to influences beyond social class, the tastes and knowledge that are considered to comprise cultural capital have been shown to be differentially valued depending on one's social class positioning" (Meisenhelder, 2000; Sommerfeld, 2009, p. 72). It is important to note that even within the middle-class black structure, tastes, culture and exposure differ based on a person's status at the top or bottom of the class pyramid. For example, those individuals at the "top of the black class structure do not experience a middle-class lifestyle in the same way that those at the bottom do. The middle-class subdivision in the suburbs of Washington, D.C… does not contain poor residents, nor do these communities suffer from the relentless social and economic maladies that plague poor communities" (Lacy, p. 3). Specific neighborhood constituencies with the black middle-class can further define quality of school and social capital.

Table 2: Gradations of Middle-Class Incomes, 2000 U.S. Census Bureau

	White				**Black**			
Annual Income	Men	Women	White Population	White Middle-Class Population	Men	Women	Black Population	Black Middle-Class Population
Lower-Middle-Class $30,000 – 49, 999	24%	16%	20%	53%	20%	15%	17%	65%
Middle-Class $50,000 – 99,999	19%	8%	14%	37%	12%	6%	8%	31%
Upper-Middle-Class $100,000+	6%	1%	4%	10%	1.5%	0.5%	1%	4%

U.S. Census Bureau, "Gradations of Middle-Class Incomes, 2000," Current Population Survey (PINC-02, Part 25 and Part 49) Lacy, K. R. (2007). Blue-chip black: Race, class, and status in the new black middle class. University of California Press. p. 4

Conversely, when comparing middle-class blacks with their white counterparts, multiple similarities abound. For instance, these "parents often make considerable financial sacrifices and efforts to have their children admitted to the 'best schools,' not only at the college level but at the elementary and high school levels as well…If the kids don't do well somehow, that's a reflection on them, and somewhat detracts from themselves. So therefore, their kids must be good, and they see to it" (Lacy, p. 11). Part of being "good" is matriculating into a selective college.

Another distinction in the black middle class was the utilization of skin hue to demarcate distinct class structures, because in "the class structure instituted under the system of slavery. … a pattern of stratification emerged in which slaves with white ancestry benefited from their lighter skin color and white features… In their household

occupations, mulattoes were exposed to the lifestyles and culture of upper-class whites, a lifestyle they would seek to imitate after emancipation" (Lacy, p. 24). One attainable way to break out from this pattern was through educational achievement (Table 2). Lacy notes, "Specifically, educational attainment set the emergent black middle class apart from the mulatto elite, and focusing on educational attainment was one way that members of the emergent black middle class erected boundaries within their own groups." Many publications have been written about color hue elitism within the black middle class, but for the purposes of this study, I do not focus on that aspect of black culture and history.

Contextual Factors and College Admissions

The history of public education in the United States tells us that issues of equity have always been tied closely to educational attainment. Regarding class and education, "young people from groups with fewer resources such as lower socio-economic status, limited social capital, or non-dominant cultural position, are often far less likely to have access to first-rate educational opportunities" (Diamond, 2006, p. 495). Socio-economic differences directly translate to key educational factors.

The weight of this burden on the working-class citizen is at times overwhelming; "at this time in American society when wealth absolutely abounds and money sloshes around in staggering amounts, between 18 and 20 percent of all children are living in poverty. (The numbers for Black children and Hispanic children are 36 percent and 34 percent, respectively)" (DaSilva, p. 189).

It is important to note that there is still a strong correlation between race and class.

Unfortunately, being Black and Latino often still translates into being poor, since only 15 percent of the intensely segregated White schools in the nation have student populations in which more than half are poor enough to be receiving free or reduced price meals. By contrast, a staggering 86 percent of intensely segregated Black and Latino schools have student enrollment in which more than half are poor by the same standards. A segregated inner-city school is almost six times as likely to be a school of concentrated poverty as is a school that has an overwhelming White population (Kozol, p. 20).

There is a stark difference in the incidence of upper-class and lower-class students in selective higher education institutions. Upper-class and lower-class schisms in education continue to grow due to the impact of what eminent sociologist Max Weber termed “status honor.” This occurs when “people care not only about how much money and influence they have but also about how they are regarded by others. Those who held on to their power over time and across generations were able to do so because they had figured out how to maintain status honor for themselves and their offspring” (Mitchell, 2001, p. 33).

Thus, the complex world of collegiate admissions is often difficult to navigate for lower-class students since “privileged people create the ladders others must climb to move up in the world” (Mitchell, 2001, p. 4). Bourdieu argued that "cultural capital is not simply a matter of what is transmitted in families, it’s a statement about an unequal system in which 'what is transmitted' in middle-class families corresponds with 'what is valued in society' " (Vincent, p. 439). Collegiate attainment is solidly influenced by the intersection of education and class.

Additional class data continues to reveal a telling story in terms of actual attainment. As of 1972, 9 percent of both Black and Hispanic students going on to highly selective colleges came from the most socio-economically advantaged fourth of society. As of 2004, 35 percent of Hispanic and 49 percent of Black students at such institutions came from such socioeconomic background. The proportion of white students at such (selective) institutions who hail from the wealthiest fourth of society has remained unchanged at about 70 percent throughout the period the researchers studied (Schmidt, 2010, p. 1).

In 2012, "30.3 percent of all Americans have finished college and earned a four-year bachelor's degree or higher. Only 8.3 percent of students from low-income families earn a bachelor's degree by their mid-20s. High achieving, high-income students are 2.5 times as likely to graduate college as high-achieving students from low-income backgrounds" (The Promise of College Completion. Kipp's Early Successes and Challenges, p. 6, 2012). Table 3 further illustrates the disparity in college graduation rates between the bottom- and top-income quartiles.

Table 3: The Promise of College Completion, Kipp

	Starting Population	**Graduate High School**	**Enroll in College**	**Graduate College by Age 24**
Top-income quartile: more than $108,284	100	93	90	82
Bottom-income quartile: 0 to $36,080	100	70	41	8
All U.S. students	100%	83%	62%	31%

Kipp, The Promise of College Completion. Kipp's early successes and challenge. Mortenson, Tom, Bachelor's degree attainment by age 24 by family income quartiles, 1970 to 2009, U.S. Census Bureau

Domestically and globally, the variations in school expenditures between the rich and the poor are striking**.** For example, "Taylor and Piche (1991), on a study of per-pupil expenditure by U.S. school boards, found a range from $1,752 in the richest district to $1,324 in the poorest, with many states having a 2.5 to 1 or 3 to 1 ratio between high-expenditure and low-expenditure groups of districts" (DaSilva, p. 23). However, relevant social class comparisons in educational spending included not only school expenditures per pupil, but also additional social capital in the home. More globally, "an Australian study of household expenditure found high income couples spending an average of $8.82 per week on books and periodicals, while sole-parent providers (roughly equivalent to AFDC recipients in the United States) spent $2.06 (Whiteford, Bradbury & Saunders, 1989) (Da Silva, p. 22). In addition, it is thought that expenditures on books and reading materials such as *Business Week* and *The Economist* are early precursors to high verbal aptitude. These variations significantly impact the academic achievement of working-class children and it is no surprise that "children from working-class, poor and minority ethnic families continued to do worse than children from rich and middle-class families on tests and examinations, were more likely to be held back a grade, to drop out of school earlier, and were much less likely to enter college or university" (De Shano, p. 14).[v] It is clear that class plays a key role in minority student achievement, but contextual factors such as family support, academics, and extracurricular activities are also vitally important to student achievement.

Contextual Framework

Family Legacy

Generally, what leads to successful college admissions is a combination of a student's academic history, references, and extracurricular activities. Admission to elite colleges includes these factors, but also others such as higher standardized test scores, financial ability to pay, early applicant benefits,[ix2] and legacy status, many of which are unavailable to minority applicants (Mitchell, 2001, Golden, 2006, Steinberg, 2010, Kahlenberg, 2010). Avery (2003) also notes the benefits of early application in the selective admissions process and argues that upper-income students, who are often positioned for elite admittance from an early age, are often the beneficiaries of this particular admissions practice because one needs to accept the offer before knowing the financial aid package. This practice discriminates against individuals from lower income groups. Furthermore, low-income minority students, who are first-generation college students, are often unable to benefit from legacy advantages. In fact, recent statistics indicate that students living in low-income families are four times more likely to drop out of high school than their wealthier peers (National Center for Educational Statistics, 2004) (Close, p. 31).

Traditionally, alumni of selective colleges have advocated for their offspring to receive the same status and privilege accorded them by their prestigious degrees. In the current discussion, there are still subtle and not so subtle ways to identify legacy applicants. There is a space on most college and graduate school applications to note whether a parent or relative is an alumnus of the school. Information sessions are

sometimes held exclusively for legacy applicants.

Historically, "social institutions, such as family and schools, are designed to teach individuals how to behave within those socially created gender expectations." (Coleman, 2007, p. 5) Sternberg (2010, p. 7) argues that, “until the 1960s, most students were admitted to selective colleges on the basis of their parents’ social class. It was believed that one’s social class would predict in great measure one’s potential for future positive leadership.” Conversely, privilege has long been an important criterion in educational access. A longer discussion regarding legacy admissions could reveal a system of “privileged families and the impressive organizational machinery they have developed to pass their comfortable social positions on to their children. Privileged people create the ladders others must climb to move up in the world” (Mitchell, 2001, p. 4). This historical privilege is often characterized by a sense of familiarity with the parent’s alma mater, which potential applicants may visit with them, during their reunions or class gatherings. The often-intimidating hurdle of applying to Ivy League or selective colleges for minorities is considerably diminished for legacy applicants.

A third concern that will be addressed in this investigation is that, despite a long-standing emphasis on recruiting minorities to elite colleges, elite college campuses remain largely white and the minorities who are enrolling are largely affluent.

Currently, at many selective institutions, “students of color remain relative newcomers on campuses initially built to serve Anglo-Europeans. The basic character of American higher education evolved over two full centuries before African American

young people, let alone Latino and Asian American students, were welcome to attend college with whites" (Mitchell, 2001, p. 142).

Laird (2005, p. xiv) found that, the best of those children (minorities) overcome enormous pressures to achieve. Yet they must compete to get into selective schools that face ever more applications for limited spaces. "Minority children have shown that they can jump extraordinary hurdles with weights on their feet, but they haven't jumped as high as those students who were trained from birth and given springs for their shoes…"

Attention to minority enrollment in selective colleges is not a new phenomenon. In fact, "President John F. Kennedy held a meeting in Washington with a handful of leaders of elite universities urging them to 'make a difference' by recruiting minorities" (Soares, 2007, p. 112). "The 1970s marked the beginning of what we might call the 'Affirmative Action' era in higher education, with many White institutions that had previously limited the enrollment of students of color now actively seeking to diversify their student bodies" (Tatum, 1997, p. 6).

Selective college admissions continue to be a research focus among many scholars of higher education (David and Karen, 1998, Mitchell, 2001, Avery, 2003, Golden, 2006, Kahlenberg, 2010). Indeed, *"*2010 was the toughest [year] ever to get into a top college. This was the result of three factors: largest high school graduating class in history, seniors submitting more applications to more colleges, and a larger number of international kids interested in top name colleges" (Chester, 2011, p. 6). This trend has continued in later years.

In summary, factors that many white, privileged students may take for granted, including a family legacy at selective colleges, familiarity with elite colleges, and an inner access to the customs, rules, and preference of elite college admission officers, are not available for many lower-income minority students. Therefore, the legacy advantages must be replaced by outside factors such as accelerated outreach agencies or outside guiding forces such as guidance counselors or mentors.

Family Support

Applicants who are accepted to select colleges typically have considerable parental and family support behind the application process. That can be portrayed through spending significant resources for academic tutoring, coaching, and extracurricular activities, as well as parents being present at high school activities, meeting with the student's teachers and staff, and advocating on behalf of the student. Middle-class families are structured to prepare their children for school, to be available to the school for communication about the child, and to provide for the child those experiences (e.g., sports, music lessons, or sit-down family dinners) that teach the social skills of school (e.g., delaying gratification, paying attention, deference to authority, and performance under pressure). The lower a family's economic status, the more difficult it is to provide this support (Coleman, 2006, p. 1). There is evidence (Spera, 2005) that the more a parent attends to his or her child's academic progress, the better that child will do in school. This finding holds true across class, gender, and cultural lines (Bogenschneider, 1997; Jeynes, 2003; Coleman, 2006).

Parents who are involved in school activities, such as attending parent-teacher

conferences, monitoring their children's progress, and helping with homework are more likely to have children who are performing well academically (Bogenschneider, 1997, p. 719). Moreover, parental involvement in school has been associated with teacher outcomes; teachers are more apt to believe that children of highly involved parents are achieving up to their ability, compared with children of less-involved parents (Stevenson & Baker, 1987; Bogenschneider, p. 719).

European Americans, being the economically dominant group in the United States, are more likely to feel confident engaging in school-based parental involvement (Okagaki & Frensch, 1998; Mena, p. 492). Higher SES and higher parental academic achievement are associated with higher levels of parental involvement (Mena, p. 500). In addition, better-educated parents are more involved in activities that supplement their children's education (Stevenson & Baker, 1987), whereas less-educated parents are less willing or able to become involved in their children's education (Bogenschneider, p. 720). Single-parent families are less apt to interact with the school and the teacher, but are as interested in their children's education and as likely to work with their children at home (Bogenschneider, p. 720). When a school does not feel accountable to a parent or group of parents to meet the needs of a particular child or group of children, it is less likely to adjust the curriculum to meet those needs (Bacete, & Remirez, 2001; Okpala, Okpala, & Smith, 2001; Coleman, 2007).

One study by Clark (1983) that "examined low SES Black students' achievement and underachievement in their family context noted that high achieving Black students had parents who”:

- Were assertive in their parental involvement.
- Kept abreast of their children's school progress.
- Were optimistic and tended to perceive themselves as having effective coping mechanisms and strategies.
- Set high and realistic expectations for their children.
- Held positive achievement orientations.
- Set clear, explicit achievement-oriented norms.
- Established clear, specific role boundaries.
- Deliberately engaged in experiences and behaviors designed to promote achievement.
- Had positive parent-child relations characterized by nurturance, support, respect, trust, and open communication (Ford, Thomas, 1997, p. 3).

Another study measured parental involvement in school and reported perceptions of parents' involvement in their school—whether parents attend school programs for parents, watch students in sports or activities, help choose courses, help with homework when asked, and monitor school progress (Bogenschneider, p. 723). "Both mother and father's involvement was positively associated with grade point average at a .01 significance level. Correlations ranged from .14 to .25" (Bogenschneider, p. 725). In other words, parental involvement is a positive factor in increased grade point averages

and academic achievement.

Factors observed among Latinos include the following: economic, social, and language proficiency disadvantages as well as cultural misunderstanding when interacting with schools (Hill & Torres, 2010). This can create a hesitancy among parents to engage actively with their students' teachers, classrooms, and attendance at extracurricular activities. One study researched "home-based parental involvement practices (i.e., educational encouragement, monitoring, and support) and their impact on students' academic persistence"…with a sample of 137, ninth-grade Latino students in a northeast high school. This was a low-income population as evidenced by eligibility for free or reduced lunch (77% of the sample). Using a structural equation model, the authors found that the relationship between "home-based parental activities and students' intentions to complete the next school year is mediated by students' school beliefs (i.e., perceptions of school responsiveness, school engagement-trouble, academic attitudes, and academic self-efficacy)" (Hill & Torres, 2010).

These studies confirm that parental involvement, whether evidenced through active school participation and support or home-based support through encouraging and prioritizing the students' educational endeavors, has an impact on students' academic achievement.

Social cognitive theory (Bandura, 1977) argues that positive academic outcomes result in large part from the student's level of academic self-efficacy. Research has consistently found that higher levels of self-efficacy are associated with higher levels of

achievement. (Close, 2007, p. 32). It is evident that parental and familial support can help augment feelings of academic self-efficacy among students.

Extracurricular Activities

Middle-class families are structured to prepare their children for school, to be available to the school for communication about the child, and to provide for the child those experiences (e.g., sports, music lessons, or sit-down family dinners) that teach the aforementioned social skills of school (e.g., delaying gratification, paying attention, deference to authority, and performance under pressure). The lower a family's economic status, the more difficult it is to provide this support (Coleman, 2007, p. 1).

Class is a key influence, shaping the 'cultural logic of childrearing' (Vincent, 2012, p. 431). Many high-income black parents seek to engage their students in particular social activities because "Black middle-class parents also sought to arm their children against racism, to help them resist the often subtle, but insidious positioning of Black children as inferior in a White-dominated society" (Vincent, p. 436). Bourdieu argues that the talents children honed at a young age become naturalized as they grow older, as do the 'modes of acquisition of culture' (1984:66) – the assumption that the activity is worthwhile, the money to pay for musical instrument lessons, the space in which to practice, and the encouragement to continue (Vincent, p. 434).

In semi-structured interviews with 62 parents, extracurricular activities including "sport, performing arts (dance, drama and singing mainly), instrument lessons; Black-led organizations; supplementary school or tutoring; and other (including youth groups such

as Brownies/Cubs or army cadets) and also youth groups at church were examined" (Vincent, 2012, p. 429). The encouragement of these activities is defined by Lareau's "concept of concerted cultivation" (Vincent, p. 439). Hill (1999) and Lacy (2004) noted careful strategies adopted by American Black middle-class parents concerned with both preparing their children for success in a white-dominated society, and also with maintaining their links to Black communities, cultures, and histories. Hill describes this as 'dual socialization' (Vincent, p. 432). Class is also prioritized in the Lareau analysis; affluent Black and White middle-class parents in her study had the same strategies of concerted cultivation. That study found that in determining parental childrearing styles, practices, and priorities, social class is more important than race (Vincent, p. 434). The activities that are involved in concerted cultivation are precisely the activities that selective admission officers are evaluating and valuing on students' admission applications.

Vincent found that the childrearing strategies of the working-class and poor parents emphasize, by contrast, the 'accomplishment of natural growth.' These parents believe that as long as they provide love, food, and safety, their children will grow and thrive. They do not focus on developing their children's special talents (Vincent, p. 231). Unfortunately, providing love, food, and safety are not the components that will allow low-income, minority students to stand out in a competitive selective applicant pool. Activities such as advanced musical training and athletic competition, including lacrosse, tennis, swimming, equestrian, and gymnastics, are the talents that upper-class parents actively cultivate in their offspring to yield admittance to competitive colleges such as

Amherst, Williams, Duke, UCLA, Yale, and NYU.

Family Makeup

In addition to stellar extracurricular activities, high school graduation is a prerequisite for attending a selective college, and family factors related to high school attrition include the following: parental job status, parental expectations for their child's education, family income (Piog & Magee, 1997), one or two parent families, attachment (Astone & McLanahan, 1991), family support (Catterall, 1998; Garett, Antrop-Gonzalez, & Velez, 2010), and encouragement, parental involvement, and parenting style (Rumberger, Ghatak, Poulus, Ritter, & Dronbusch, 1990).

The parent's education also impacts student achievement through school involvement. Determining the highest level of education completed by each parent was measured in three categories. Low education included families with a parental education level of high school completion, moderate education included families with an educational level from some college to a college degree, and high education included families with an educational level beyond the completion of college. School involvement of mothers and fathers was greater in the high-education families of both boys and girls than in the moderate- or low-education families of boys and girls (Bogenschneider, p. 725). Finally, both mothers and fathers in families with two biological parents were more involved than mothers or non-custodial fathers in either single-mother or mother-stepfather families (Bogenschneider, p. 725). In summary, increased family involvement, which positively impacts student achievement, was evident in parents who were highly educated.

Academics

Academic preparation for selective colleges often begins in primary and middle school grades in rigorous schools to which many ethnic minority students do not have access. Hamrick (2004) conducted a comprehensive literature review on the topic of college predisposition. His findings included the assertion that "even when controlling for eighth grade ability, Asian American and White students were more likely than Black, Hispanic, and Native American students to take college preparatory courses." This early academic preparation often paves the way for selective college admission. Conversely, barriers for inclusion are created if minority students are either not in schools that provide rigorous college preparatory classes or are systematically excluded from these courses by a process of prerequisites and selection. One of the standards for admissions into a selective college is "strength of schedule," and taking several advanced placement courses is the common standard for strength of schedule. Exclusion from high quality academic secondary programs has often paved the way for continued minority under-representation in selective colleges. Black and Latino students are often overrepresented in the lower-income class bracket; "a staggering 86 percent of intensely segregated Black and Latino schools have student enrollments in which more than half are poor by lower-income government classifications. A segregated inner-city school is almost six times as likely to be a school of concentrated poverty as is a school that has an overwhelmingly White population" (Kozol, 2006, p. 20).

O'Brien (1998) also notes that African Americans and Hispanics are "increasingly isolated in inferior schools and both groups are far more likely than Whites to attend

schools in areas of concentrated poverty" (O'Brien, 1998).

In addition to not offering a rigorous academic program in many Title I schools that teach most ethnic minority students, schools have not done a good job of helping these students plan an academic program of study that leads to the type of program that is deemed appropriate for entrance into a selective college. For example, many districts that serve a larger percentage of ethnic minorities do not start Algebra until ninth grade, which makes it impossible to take calculus by senior year. Taking calculus, let alone doing well in it, is often a prerequisite for admission to a selective college. Another barrier to admissions is a lack of understanding on the part of guidance departments on what it takes to get into a selective college, with the consequence that the ethnic minority students they serve do not have the support to complete and submit competitive applications.

In many areas of the country, the poverty rate has a high correlation with the mobility rate within the school system (Mehanna & Reynolds, 2004; Pribesh & Downey, 1999). This means that poor children often do not have the educational continuity with a teacher or connections to a school that we know contribute to high academic performance (Battistich, Schaps, & Wilson, 2004; Karcher and Lindwall, 2003; Lindwall & Coleman, 2011, Coleman, 2007, p. 4). As schools increasingly become oriented towards post-secondary education as the next step in the career path (e.g., increased academic requirements for graduation), they become increasingly irrelevant to the employment possibilities within poor communities (Coleman, 2007, p. 3).

In the United States, allowing schools to be financed by the wealth of the community in which they reside feeds this replication. A high poverty area will not have the resources to meet its needs, unlike a wealthy community, that is more likely to have those resources (Ceballo, McLoyd, & Toyokawa, 2004; Kline, 1997; Portes & MacLeod, 1996; (Coleman, 2007, p. 5). In summary, inferior, poverty-stricken schools tend to have students who do not pursue rigorous courses of study, do not have college preparatory courses that includes advanced math curriculum, and have severely limited access to quality guidance counseling – all necessary precursors to selective collegiate admissions.

Counseling

A lack of quality, personalized college guidance counseling could be another key limiting component to lower-income minority representation in elite universities. Unlike selective private schools and public schools located in high-income communities like Milton or Brookline, MA, "it is not uncommon for a single college counselor to have a student load of 300 to 400 students, or even more" (Muska, p. 138). In a school such as Brooks School in North Andover, MA, a typical student to guidance counselor ration is 1 counselor to 50 students, a much more personalized approach.[vi]

The role of guidance counselors on selective college admissions is immeasurable, as they often lay the groundwork for students to navigate from a lower class to a higher-class status. A counselor can recommend testing resources, essay guidance, and interview outfits. Navigating class difference is complex, as an individual's social class membership is based not only on economic attributes but also on behaviors, appearance, relationships, and interactions with others, which reinforces the notion that "class is

considered to be in everything about a person, from the location of their home, to their dress, their body, their accent…there are ways this is produced, regulated, and lived" (Walkerdine et al., 2001, p. 38).

These students can be identified as ‘marginal people’ or ‘cosmopile"’ who "live at the juncture between two cultures and can lay a claim to belonging to both cultures and [being] raised in a second" (LaFramboise, Coleman, Gerton, 1993, p. 395). I argue that the guidance counselor is a key positive facilitator to help students acculturate, a person who "focuses on the acquisition of the majority group's culture by members of the minority group ... [Yet such a person,] while becoming a competent participation in the majority culture, will always be identified as a member of the minority culture" (LaFramboise, p. 397). For example, Rashid, a lower-class African American gaining admittance to an elite, often majority white college, "defined this type of concept for African Americans as the ability to function effectively and productively within the context of America's core institutions while retaining a sense of self and African ethnic identity" (LaFramboise, p. 397). I assert that the high school counselor can aid in this process of biculturalism by engaging "in a comprehensive, preventative, and developmental intervention that helps to promote a sense of belongingness" as students migrate from lower-class cultures to largely upper-class select college surroundings (Coleman and Lindwall, 2008, p. 3).[vii]

Personal Factors

Coleman states that, in addition to social and contextual stratification factors mentioned above, there are personal factors that influence minority student achievement

and minority student selective college admittance. These include intellective competence, since intelligence is the best-documented predictor of achievement (Duckworth, 2007, p. 1088), certain key social skills, and cultural identity. Development of particular personal characteristics (persistence, self-direction, resilience, confidence, sociability, etc.) forms the construction of a ‘focused self', and these traits are all conducive to strong minority student achievement (Vincent, p. 435). The following section will more closely examine personal factors of resilience which includes grit, and factors of motivation and perseverance. A selective subset of measures of grit will be examined in closer detail in the Methodology section. As described by Coleman, individuals who are able to use their social competencies in situations where they are at risk can be considered resilient. As indicated in this literature review, lower-income and ethnic minority students have to overcome structural and contextual factors in order to gain college admissions. It is the hypothesis of this investigation that those lower-income and ethnic minority students who gain admission into colleges, especially elites, are resilient. This next section will review what the current literature sees as key resilient factors, beginning with grit, motivation, engagement, and perseverance.

Resilience

Coleman distinguishes "between resilience as a process and resilience as a personal characteristic." Coleman notes, “if the individual with more risk factors than protective factors has a positive outcome, we refer to them and the outcome as being resilient” (Coleman, 2006, p. 1). These risk factors include, among others, the presence of poverty, mobility, substandard school systems, and fractured family systems.

Resilience: Grit

Grit is a subcomponent of Resilience, and as we examine achievement and success, research reminds us that "we know comparatively little about why, as James put it, most individuals make use of only a small part of their resources, whereas a few exceptional individuals push themselves to their limits" (Duckworth, 2007, p. 1087). One key characteristic that determines minority school achievement is grit. Grit is defined as:

> Perseverance and passion for long-term goals. Grit entails working strenuously toward challenges, maintaining effort and interest over years, despite failure, adversity, and plateaus in progress. The gritty individual approaches achievement as a marathon; his or her advantage is stamina. Whereas disappointment or boredom signals to others that it is time to change trajectory and cut losses, the gritty individual stays the course. Many were awed by the achievement of peers who did not at first seem as gifted as others, but whose sustained commitment to their ambitions was exceptional.

Low-income students who persevere and overcome risk to matriculate at a highly selective university demonstrate their ability to overcome their contextual and social stratification situations and allow them to demonstrate that indeed, "the gritty individual not only finishes tasks at hand but pursues a given aim over years. Grit is also distinct from dependability aspects of conscientiousness, including self-control, in its specification of consistent goals and interests" (Duckworth, p. 1089). Duckworth's

research identifies that individuals who achieve formidable success over time embody a "more plausible loci of individual differences or factors that predispose individuals toward engaging in deliberate practice and enable them to sustain high levels of practice for many years" (Duckworth, p. 1088). This trait is critical as we closely examine the long-term goal of attending a selective college, defined as highly competitive among Barron's Profiles of American Colleges, which requires years of completing academic and social tasks. Grit will be one of the measures identified on the Survey, and the instrument used with the Duckworth's GRIT Scale.

Discrimination: As a subnote, it takes an incredible amount of Grit to overcome hurdles of discrimination in the educational landscape. In addition to class differentials, discrimination based on race or ethnicity is also a contributing contextual factor in higher education that affects the admissions and retention processes. "Researchers have associated an individual's status as a racial or cultural minority with academic risk" (Borman and Overman, 2004, p. 178). Such discrimination based on race and income can occur when "schools that serve children of poverty and of color also may introduce risk factors by failing to provide a supportive school climate, by institutionalizing low academic expectations, or by delivering inadequate educational resources" (Borman, p. 178).

Despite four decades of affirmative action and a focus on increasing collegiate minority representation, students of color are still largely underrepresented in four-year elite college campuses (Cose, 1993; Edley, 1996; Armando, 1998; Mitchell 2001; Laird, 2005). This issue continues to be a significant focus area in higher education, because it

suggests that systematic exclusion from attending selective colleges reflects a systematic exclusion from access to powerful and economically valuable networks. The leaders of corporations, government, and the judiciary predominately attended selective colleges. If attendance at these colleges is a gateway to success, then ethnic minorities are systematically excluded from access to the highest levels of success. To further understand this process of exclusion, it is important to understand the process of getting accepted into these selective colleges.

There are additional consequences to discrimination; negative stereotypes that impugn "non-Asian ethnic minorities' intellectual ability...convey to the targets of these stereotypes that they are not seen as individuals, that they may not be fully valued or respected – that they may not belong in academic settings. These stereotypes can persist even in the collegiate atmospheres, and a sense of resilience must be instilled to overcome these discriminatory beliefs becoming ingrained into the minority psyche." (Walton, 2007, p. 3).

This can be understood from the perspective that "no matter how well one performs, one could be treated poorly and devalued which may cause people from stereotyped groups to be vigilant in academic and professional environments for cues that suggest that they are not fully included and valued." This can have a direct effect on their ultimate desire to succeed in the higher educational segment.

Even when an ethnic minority student has completed a rigorous academic program, there are other barriers to applying to and attending a selective college. One of

those barriers is “stereotype threat” (Steele, 1995). Steele defines stereotype threat as “the threat of being viewed through the lens of a negative stereotype or the fear of doing something that would inadvertently confirm that stereotype” (Tatum, 2007, p. 58). Tatum (2007) has shown that minority students in high achieving academic environments can be seen as “stigmatized” and notes that “stigmatized students must face the threatening possibility that should their performance be inadequate, their failure will only underscore the racial stereotype of alleged intellectual inferiority” (Tatum, 2007, p. 63). Avoiding this stereotype threat can often lead academically qualified minority students to be risk-averse and self-select out of even applying to selective colleges. The fear of getting rejected can supersede the joy of potentially being admitted.

When we discuss bicultural competence and skills used in particular contexts, one marker of academic risk is falling within two distinct cultures, whether those two cultures are wealth and poverty, or being White and an ethnic minority. “Academic risks may be associated with the potential discontinuity, or ‘lack of fit’ between the behavioral patterns and values socialized in the context of low-income and minority families and communities and those expected in the mainstream classroom ad school contexts” (Borman, p. 178).

Studies found that bicultural competence is the ability to effectively negotiate two cultures, either simultaneously or separately. Such bicultural competence displays cognitive similarities to being bilingual, but is significantly more demanding at the affective level (Coleman, 2007, p. 12). Nora’s (2004) college selection theory examined the dimensions of pre-college psychosocial factors, such as habitus and cultural capital,

that are associated with a minority student's fit at a particular majority institution, and determined the extent to which those factors were reflected in students' college choices, and established the effects those factors exert on measures of student satisfaction. The study revealed that final college selections were closely aligned with a student's comfort and fit with the (often Caucasian majority) institution. The ability to connect or "fit" with two cultures can also be a factor in school achievement. Furthermore, the lack of ability to navigate the White and African American culture in an academic context can be detrimental. "School failure may be interpreted as African Americans' attempt to form a personal identification; by failing to succeed in (a predominantly White) school, children demonstrate their distinctiveness from and opposition to the dominant White, European American culture" (Fordham, 1988; Fordham & Ogbu, 1986). Furthermore, Ogbu, in his 1993 Urban Review article coined the phrase "acting white" as a belief that superior academic performance is affiliated with majority whiteness. (Fordham, S. & Ogbu, J., 1993). To the extent that high-achieving African American children minimize their relationships with their communities, these children are criticized by their peers but are not fully accepted by White Americans. Fordham and Ogbu (1986) used the term "racelessness" to refer to the behaviors and experiences of these high achieving students (Arroyo, 1995, p. 2).

The core hypothesis in much of this literature is that the better a child's social skills, the more effectively he or she will be able to negotiate and reach key developmental milestones. In many cases, bicultural competence (which is the ability to use social skills as appropriate to a particular cultural context) are seen as playing a

central role in a child's emotional health and well-being, which also translates into positive academic performance (e.g., Parke & Welsh, 1998). The assumption in this paper is that social skill, applied in a situation of risk, is a positive individual resilience factor (Coleman, 2007).

Gender is also one of the key areas of social stratification that affects minority student achievement. For the purposes of this research, we will ask for gender identification, but differentiation between male and female students will not be a key focus of this study.

Resilience: Motivation

Results indicated that students who reported feeling connected to teachers and their school reported higher levels of autonomous motivation for attending school, more confidence (i.e., self-efficacy) in their academic ability, and better academic performance (Close, Solberg, 2007, p. 1).

Autonomous motivation occurs when one freely chooses to engage in a behavior and fully endorses this choice either out of interest or its importance to oneself. This has been associated with higher levels of perceived competence, higher academic achievement, and positive affective states (Close, p. 32). Controlled motivation occurs when a person engages in a behavior because of coercive forces, such as guilt or external pressure (Close, p. 32). With regard to motivation, participation in a pre-college counseling program could be motivated by controlled motivation delivered from a parental or familial authority figure, or by autonomous motivation fueled by personal,

self-directed goals. This research will delve further into this bi-modal distribution of motivation.

Resilience: Active Engagement

Active engagement is another personal factor that can affect minority student achievement. Jimerson defines student engagement in school as "having both a behavioral component, termed participation, and an emotional component, termed identification" (Jimerson, 2003, p. 3). Indicators of engagement include "participation in school-related activities, achievement of high grades, amount of time spent on homework, and rate of homework completion. Some researchers include measurements of delinquency, truancy, or misbehavior in their investigation of engagement." (Jimerson, p. 3). In addition, student engagement describes the act of “school bonding” or attachment to school, teachers or classmates. One personal example of school bonding was demonstrated when I asked my brother, Andrew, who is in his 40s, to recall names from our public school, grades K–6th, at P.S. 196 in Forest Hills, Queens. Not only did he recall the principal, Mr. Nierman, and vice principal, Mrs. Levy, he accurately recalled positive experiences with teachers Zahler, Lacy, Circus, Goldman, and Drotman, as well as Louie, the janitor. This school was on the whole a caring community that strove to foster active school engagement and attachment in its students of all colors. Results indicated that students who reported feeling connected to teachers and their school also reported higher levels of autonomous motivation for attending school, as well as more confidence (i.e., self-efficacy) in their academic ability, and that consequently they performed better academically (Close, Solberg, 2007, p.1).

Resilience: Perseverance

Resilience, or the ability to bounce back from unfortunate circumstances, is another essential skill that is critical for minority student achievement. According to Masten, "resilience refers to a class of phenomena characterized by good outcomes in spite of serious threats to adaptation or development, and in studies of resilience, the risk side of the definition has been operationally defined in diverse ways, including socioeconomic status (SES) measures, divorce, [and] massive community trauma" (Masten, 2001, p. 228). The process of developing resilience occurs when a person is facing a condition of risk and they are able to overcome the risk and experience positive outcomes. Coleman argues that "given the social stratification factors which put minority students at risk for failure or underperformance in schools, those students who succeed in school fit current definitions of resilience" (Coleman, 2006, p. 1). In this use (e.g., Wolin and Wolin, 1993), one identifies "the characteristics (e.g., personal traits such as persistence or interpersonal competence) that the individual uses to overcome the condition of risk" (Coleman, 2006, p. 2). In cases where a minority student may be challenged by lack of strong familial support, limited academic or counseling resources, and constrained options for extracurricular activities, resilience may be a pivotal attribute to overcome limited, daunting odds of success in the select collegiate arena. In such a case, where "probability suggests a negative outcome and it is not readily possible to determine the characteristics of those with positive outcomes, we focus on the outcome being resilient rather than the individual" (Coleman, 2006, p. 2). Another definition espoused by Masten (1994) "envisioned resilience as a developmental process occurring

over time, eventually characterized by good psychosocial and behavioral adaptation despite developmental risk, acute stressors, or chronic adversities" (Burman, p. 180). In addition, resilience is often not fostered in isolation. Ferguson (1998) noted that 'students' resiliency often depends on strong supportive relationships with their teachers; research suggests that teachers' beliefs, expectations and behaviors may affect African-American students more than Whites" (Burman, p. 181).

Kaplan (1999) notes that resilience is the positive outcome in response to stress. "Individuals are considered vulnerable to particular negative outcomes or to the absence of positive outcomes by virtue of being at risk" (Kaplan, 1999, p. 20; Gibson, p. 28). Resilience can also be defined as a general construct that reflects explicit "characteristics and mechanisms through which (individuals) operate that moderate the relationships between risk factors and outcome variables" (Kaplan, 1999, p. 20).

According to Luthar and Cicchetti's (2000) definition, resilience refers to a dynamic process encompassing positive adaptation within the context of significant adversity. Implicit within this notion are two critical conditions: 1) exposure to significant threat or severe adversity; and 2) the achievement of positive adaptation, despite major assaults on the developmental process (p. 543; Cooper-Gibson, p. 32). The ability of low-income minority students to develop resilience despite poverty, unstable families, constant mobility, and inferior educational facilities is the key ingredient that leads to sustained minority achievement.

Furthermore, Cox (1926) concluded that, holding constant a person's estimated

IQ, the following traits evident in childhood predicted lifetime achievement: “persistence of motive and effort, confidence in their abilities, and great strength or force of character” (Duckworth, p. 1088). “Perseverance is at least as crucial as intelligence...The most crucial inherent differences may be ones of temperament rather than of intellect as such” (Duckworth, p. 1088). Furthermore, the Terman longitudinal study of mentally gifted children found that “more predictive than IQ of whether a mentally gifted Terman subject grew up to be an accomplished professor, lawyer, or doctor were particular non-cognitive qualities as perseverance, self-confidence and integration toward goals” (Duckworth, p. 1088).

Because we have not consistently looked at what an individual does to overcome conditions of risk, I suggest that such a study of resilience is warranted, not only to identify the conditions of risk and the positive outcomes, but also to identify the characteristics or behaviors of the individual that contributed to the outcome (Coleman, 2006, p. 2).

In summary, we have established that college education is critical to an individual's achievement levels, and that historically selective colleges choose admitted applicants from a select group of largely privileged individuals, whether through legacy or class delineations. Graduates of top boarding schools are largely the recipients of upper-middle to upper-class stratification, intact family compositions, quality school systems, and involvement in numerous and elite extracurricular activities. As previously noted, class is often defined as a system of income, status, and wealth, and in the absence of these poignant variables for low-income students, outreach programs such as TRIO

and Upward Bound can bridge the gap to minority student achievement and admission to selective colleges.

As previously noted, resilience is the ability of an "individual with more risk factors than protective factors (to have) a positive outcome, (and) we refer to them and the outcome as being resilient" (Coleman, 2006, p. 1). In summary, a low-income minority student who has performed at high academic levels, has achieved a high level of standardized testing, and has overcome difficult social scenarios of discrimination and difficult contextual factors of limited extracurricular activities, no collegiate legacy, and constrained familial support would be a prime candidate of an individual who has exhibited strong resilience skills. Such a student would be well positioned to benefit from a mediating offering such as a targeted college outreach program.

College Outreach Programs

College outreach programs can be useful in helping poor ethnic students overcome the barriers to admission at selective colleges, and the next section of this review will identify outreach programs that help bridge the gap between the pre-existing situation of such individuals and acceptance to a selective college. The literature is clear that there is a large opportunity gap in terms of access to selective colleges and universities between lower-income and upper-income individuals. It is also clear that being an ethnic minority increases the difficulty of closing that gap. There are, however, several ways in which this gap can be overcome. One of the most important and systematic approaches is to improve the academic rigor and effectiveness of schools in

lower income areas. Until that happens, one alternative is to focus on the effectiveness of programs that are designed to help individuals in those programs cross the gap.

There are numerous college admission outreach programs such as A Better Chance (ABC), Prep for Prep, Posse, Create your Dream, and Bottom Line that have targeted the low-income or minority college applicant to help navigate this complex process of collegiate admissions (LaGuardia, 1998; Gullat, 2003; Avery, 2004).

The Create your Dream (CYD) is a “youth development program dedicating to nurturing the talents and dreams of students in underserved areas of Atlanta which was founded in 1994.” Mentors develop long-term strong relationships with groups of students beginning in the third grade until high school graduation; this includes a College Readiness Program, which incorporates college essay assistance and financial assistance for SAT and application fees (www.createyourdreams.org). In addition, “The Education Resources Institute (TERI) in Boston, have received Federal Funds to run projects through the TRIO programs, which were created in 1965 to help disadvantaged students enter and complete college."

Gear Up is a newer program in which "colleges form partnerships with middle schools in low-income areas, providing tutors and mentors to motivate students to pursue a college education” (Burd, 2000). GEAR UP is “a comprehensive outreach program seeking to enhance awareness and readiness for college among low-income middle school students. After controlling for students' preprogram test scores and school characteristics, findings indicate that students participating in GEAR UP and in a

comparison group gained in their reading and mathematics scores" (Cabrera, 2006, p, 80). The program funds partnerships between high-poverty middle schools and colleges and universities, community organizations, and businesses to work with entire grade levels of students, beginning no later than the sixth grade and staying with these students through high school. In addressing grade-cohorts, the program's strategy is systemic, integrating multiple partners in efforts to elevate youngsters' and parents' awareness of college as an option, their college aspirations, and their level of preparedness for college, both academically and financially (Cabrera, p. 82).

Cabrera's research study employed a multilevel, repeated-measures design and analytical procedures to examine the effects of exposure to CIP programs and activities on two measures of readiness for college. The results of this study are more suggestive than conclusive in answering that policy question. They provide evidence that comprehensive and coordinated intervention programs may, indeed, be more effective than traditional approaches to promoting the reading and math skills of low-income students as they progress toward college entry (Cabrera, p. 94).

Yampolskaya et al., (2006) found that there is value in examining the amount of time spent in different program activities. They also found that students classified as "high participation" showed significant improvements in grade point average, whereas those classified as "low participation" did not.

One study evaluated GEAR UP students who had participated in the program for six years from four school districts in a "rural, western region." There were 187

participants. The study utilized a standard multiple regression to "determine the accuracy of the independent variables (hours of participation in tutoring, mentoring, advising, college visits, summer programs, and educational field trips and total hours." Results of significance include the fact that participation in advising was positively correlated with college-track course completion, whereas participation in tutoring was negatively correlated with college-track course completion.

Programs such as A Better Chance (ABC) allow a select group of lower income minorities to gain scholarships to elite private schools. Attendance to these secondary schools allows these ethnic minorities access to the type of rigorous academic programming and college guidance support that is not systematically available to their peers in Title I public school systems.

Another approach that has been undertaken in several cities (e.g., Milwaukee and Boston) has been to remove lower-income students from their poverty-stricken surroundings and enable them to attend resource schools in more affluent neighborhoods outside the school district in which the student resides. The Boston example is METCO, which was started in 1996 as a voluntary school desegregation program in lieu of having school districts merge to achieve racial balancing within a region. METCO transports minority children from Boston's urban neighborhoods to predominantly White suburban schools. "When METCO students complete their four years at suburban high schools, they attend four year colleges at twice the rate of their peers attending the Boston city schools. They also perform at much higher rates on state mandated achievement tests"

(Ogletree, p. 273). These programs target low-income students with guidance counseling before they attend college.

In the 1970s and ‘80s several federal educational initiatives were designed to improve educational equity and access of low-income and underrepresented minorities into institutions of higher learning. There are programs that are targeted to collegiate access among low-income students or minorities, but there is still much to learn about their effectiveness.

Armando (1998) notes, “The creation of more educational opportunities and greater access to higher education students has become a major policy priority of the higher education community.” Current findings suggest that these private-public partnerships were somewhat successful in achieving goals to improve high school preparation and college enrollments for minority and disadvantaged students. Ward (2005) noted that the decrease in the achievement gap during the 1970s and 1980s is related to the proliferation and positive impact of TRIO programs, e.g. Trio and GEAR UP (Gaining Early Awareness and Readiness for Undergraduate Programs), during a time when unprecedented gains were made championing the rights and educational needs of low-income minority students. The Education Resources Institute (TERI) in Boston has received federal funds to run projects through the TRIO programs, which were created in 1965 to help disadvantaged students enter and complete college.

Programs such as ABC and Prep for Prep also provide low-income students with college preparatory schooling and guidance counseling in preparation for selective

college admissions. Gullat (2003) summarized the effect of four programs – Baltimore College Bound, Career Beginnings, Sponsor a Scholar, and Upward Bound – and found that high standards for program students and staff, personalized attention for students, adult role models, peer support, K–12 program integration, strategically timed interventions, long-term investment in students, school/society bridge for students, scholarship assistance, and evaluation designs all contributed to the positive results of these interventions. Key questions included: Is college-going behavior intrinsic to individuals, or is a curricular and counseling change in schools the best way to instill it in more students? (Gullat). [viii]

Another example of a pre-college program is the COACH (College Opportunity And Career Help) model. Avery (2004) researched the non-profit college admissions coaching model through the COACH non-profit that he founded. Avery interviewed college students at five schools over three academic years (1998, 1999, and 2000) to study Early Admissions at selective colleges. Research participants included 25 students each from Harvard, MIT, Princeton, and Yale. He identified the COACH success rate in each step in the application process. The COACH program paired Harvard students with three public Boston high schools to assist with college and financial aid applications. During the 2001–2002 year, 34 "coaches" worked with 282 students from Concord-Carlisle High school. The students were administered a baseline study in the fall on background and educational aspirations and in the spring on college applications and post-high school plans. Milestone questions included PSAT and SAT scores, whether the student had met with a counselor 4+ times, applied to college, visited colleges, had

submitted college applications, and where they planned to attend college. Avery discovered that COACH students get the message that there are large returns to be had from going to college and that COACH students felt encouraged to apply to college. The research subject areas and questions will be useful background to my collegiate counseling focused survey.

A more recently established collegiate access program is Bottom Line. Bottom Line's Mission Statement is as follows: "To help disadvantaged high school students get into college, graduate and go far in life" (www.BottomLine.org, 8/13). They operate four on-site college counseling programs in Boston, Worcester, New York, and Chicago. Their student population includes a large percentage of minority students. They note that of the general population, "11% of low-income, first-generation college students graduate within six years" (Pell Institute). By contrast, since 1977, 74% of their (program participants) college graduates have graduated within six years." In addition, they have a strong track record of getting many low-income domestic Black and Latino youth into selective colleges. During an interview with their CEO, banners of selective colleges including Harvard, BC, BU, Northeastern University, Dartmouth, and UMass Dartmouth were prominently displayed on the office wall and represented the college choices of past program participants.

This college admissions program includes an extensive personalized counseling network that provides support to 784 high school seniors with a student/counselor meeting, on average, eight-to-ten times over the course of a year (Bottom Line Annual Report, 2012). The caseloads of the counselors and qualifications are as follow. Each

counselor has on average 50–60 students, and counseling sessions range from 60–90 minutes. All of the counselors have college degrees including those from Boston College, Brown, Holy Cross, Colgate, Middlebury, Northeastern, Harvard, and Smith. Many of them are recent college graduates who have chosen to counsel students as an early career choice. Most of the counselors appear to be in their twenties.

In summary, there are several factors that distinguish successful college outreach programs. The three brackets include strong academics, financial resources, and high staffing support systems. Commonalities include academic and college preparatory schooling; access to resource rich schools and extracurricular activities; financial aid and scholarship assistance; multiple year, long-term, highly personalized staff engagement and support; and the ability for students to be highly involved in the program.

Gaps in Literature

Existing studies show that college is beneficial, that selective colleges provide numerous excellent benefits, that minority students – specifically low-income minority students – are underrepresented in selective colleges, and that numerous outreach programs with targeted guidance counseling sessions such as Prep for Prep, A Better Chance, and TRIO have attempted to address this gap.

This comprehensive review of programs that aim to increase the applications to selective colleges and universities suggests that the core elements of an effective program are numerous. Perna (2002) suggests that four crucial elements foster college attendance: college tours, visits, and fairs; promoting rigorous course taking; parental involvement;

and beginning to talk about college by eighth grade. The eleven elements identified as most important include the four listed above and the following: college awareness and exposure; goal of promoting academic skills; parent college awareness; parent assistance with financial aid forms; parental involvement in student activities; SAT/ACT training; and tuition reimbursement (Cates, 2011, p. 324).

Although evaluation efforts have not documented the longitudinal effectiveness of such programs (pre-college programs targeting low-income, first generation, and historically underrepresented groups), analyses of national survey samples reveal that higher academic achievement, among other factors, strongly predicts the likelihood of college enrollment (Cabrera, p. 81).

In addition, strong parental involvement has also been linked to higher student achievement as research on college choice has documented the complex process parents and students undergo in becoming aware of and ready for college; a process that begins as early as seventh grade, when parental encouragement plays a major role in initiating the college planning process (Cabrera, p. 81).

An area for further research is "the relationship between how different program components are associated with various outcomes." Perna (2002) called for further research to better understand the effects of discrete program elements and combinations of elements. Gandara and Bial (1999) stated, "One of the critical components for future research is determining which program elements are responsible for helping prepare students for postsecondary education." In addition to the importance of program

elements, personal factors that exist among outreach program participants are also important for assessing their contributions to success.

The goal of this investigation is to test the hypothesis that the lower income ethnic minority youth who participate in programs such as Bottom Line and who apply to, get in, and attend selective colleges and universities can be identified as a function of certain personal factors that include motivation, grit, and perseverance – three core aspects of resilience – as opposed to economic or racial background. In other words, when class and race are held as constants, resilience predicts the outcome.

CHAPTER 3: METHODOLOGY

The purpose of the study is to test the hypothesis that resilience factors help predict admission to selective colleges for ethnic minority students. This chapter discusses the methods used to collect and analyze data to answer the study's research questions. It further outlines the research methodology and rationale, the research questions, the research design and procedures, and the analysis and interpretation of the data.

Methodological Framework

For the most part, the research methodology framework will explain in detail how personal, contextual, and structural factors influence selective college admittance among this low-income minority population. The purpose of this investigation is to articulate an effective model for helping ethnic minority youth from lower-income families to seek and gain admission to highly selective colleges and universities. This investigation will entail a critical analysis of personal factors found in students participating in a college outreach program that supports the college admission process for ethnic minority youth from lower-income families. To investigate and answer the lines of inquiry of the study, a quantitative research design was used that takes into account the aims of the inquiry, the resources available, and the population on which the inquiry focused (Zielonka, p. 66).

In this investigation, the dependent variables are collegiate admission outcomes. Dependent variables are “those that depend on the independent variables; they are the outcomes, effect, or results of the influence of the independent variables. Variables that

are predicted by at least one other variable are classified as endogenous. An endogenous variable can be predicted by another variable and be predictive of a third variable, but an exogenous variable can only be a predictor and cannot be predicted by another variable included in the model" (Quintana, 1999, p. 487). In this investigation, the dependent variables will be admission into a) selective colleges, b) non-selective colleges, and c) no admission into college.

Independent variables are those "that (probably) cause, influence, or affect outcomes. They are also called treatment, antecedent, or predictor variables" (Creswell, p. 52). In addition, exogenous variables function only as predictors and not as criteria. The hypothesis being tested is that minority students who get accepted into selective colleges are more resilient than their peers.

Research Questions

The organizing research questions for this study center on the relationships between personal factors in the minority student achievement model and selective collegiate admissions. The research was guided by the following questions:

1. To what extent do interventions among contextual factors increase the selective collegiate outcome?
2. To what extent do relevant personal factors (independent variables) individually and collectively predict how participants in an effective pre-collegiate program get admitted into a selective university?

3. Is there a moderating effect between active participation in these programs elements and personal factors on college admission outcomes?

Participants

Setting: The setting to test these hypotheses will be a non-profit collegiate admissions agency named The Bottom Line that is headquartered and chartered in the state of Massachusetts. The geographical setting was chosen purposefully after an extensive review of contextual collegiate access agencies, because this agency targets low-income high school seniors who are applying to college. The Bottom Line organization presently has locations in Boston, MA, Worcester, MA, Brooklyn, NY, and Chicago, IL.

The organization is eight years old and has a tradition of "helping low-income first generation youth get into college, graduate from college, and go far in life by providing guidance from the beginning of the college application process until college graduation." The organization enrolls over nine hundred students per year encompassing seniors in high school through college graduation. Typically, 74% of their college students have graduated within six years, more than twice the graduation rate of similar students across the country. During the 2011–2012 academic year, the College Success Program's counselors worked with 784 high school seniors. Full-time counselors worked with students through every step of the process: identifying a list of possible schools to which to apply, brainstorming and editing essays, submitting applications, acquiring financial aid, and ultimately, deciding on a school (Bottom Line 2012 Annual Report). All of the counselors hold college degrees. The counselor compensation package was

comparable to other non-profit organizations in the area with starting salaries in the $30,000–40,000 range.[ix]

The Bottom Line organization will be utilized as a research site in this study for several distinct reasons:

Their program takes into account personal factors such as intellectual competence, as well as structural factors such as income and class. The majority of students who are accepted into their program have to meet 200% of the Federal Poverty Line threshold and hold a minimum of a 3.0 grade point average. The program also targets students during a crucial time in the college decision-making process. Students are recruited during the junior year of high school and begin their introduction to the Bottom Line components and counselor engagement in the summer of their senior year. As noted, the vision of Bottom Line is: "We work to ensure that every student can access and attain a college diploma, regardless of their family background or where they live. We believe that helping enough students from each community realize the dream of a college diploma can transform that community with lasting change" (Bottom Line 2012 Annual Report). This program allows us to hold constant factors related to income, racial background, and interest in going to college.

The mission of Bottom Line aligns well with the survey focus of examining low-income minority student admission to selective colleges.

The organization's two capstone programs are College Access and the Success Program. The major components of College Access are: 1) one-on-one counseling with a

college-bound high school junior or senior, 2) selection or matching of suitable colleges, 3) essay writing assistance, 4) help completing applications, and 5) navigating the financial aid process and securing scholarship resources (www.BottomLine.org). Prior to my study, the organization had a general sense of what were their most successful practices, but my research delved further into the specifics of that success by examining the personal, social stratification, and contextual factors of individual program participants who have already been accepted into college.

Several factors of this organization influenced the choice of this site and its students. These included the organization's recent work that resulted in "developing genuine relationships with students through frequent face-to-face meetings. On average, each student met with his or her counselor every two to three weeks, or 10 times throughout the year." [x]

As noted, such "guidance counseling is also a key component to effective outreach programs." The hypothesis that motivated and resilient students would be attracted to a program of this nature will be further tested through the quantitative instruments.

Population

Survey Sample: A purposive sampling procedure was used to identify student participants who were surveyed. Yin (2011) notes that purposive sampling is best chosen in a deliberate manner in order to obtain the broadest range of information and perspectives on the subject of study. "Units [i.e. participants] should include those that

might offer contrary evidence or views, especially given the need for testing rival explanations." (Yin, 2011, p. 88)[xi] (See data source table for specific survey and data content.)

Efforts were made to maximize the number of student participants in the study. A minimum sample size of 150–200 is considered desirable in a (survey) study (Quintana, 1999). The size of the sample must be taken into consideration before generalizing to other populations. Detailed information about the sample is provided in Table 4.

At the time of the study there were 500 students in the Boston location of Bottom Line, 300 in the New York location, 150 in the Worcester location, and 50 in the Chicago location. The study targeted a percentage of the Boston students, and the Evaluation Director approached the New York and Chicago locations on my behalf regarding their students' possible inclusion in the study. The high schools from which the students came included public and private high schools in the Northeast area. Student program and non-program participants were n=150+ to allow for modest attrition. Student participants were enrolled in their senior year in private and public high schools in the Northeast and the Midwest. Boston high schools were ranked with a nominal ordering from 1 to 99 as determined by the DART High School ranking (See Appendix E). The 12th grade focus was chosen, because the college admissions' final selection is often concentrated in a students' senior year.

Because the results of this study might be of direct benefit to the organization, I anticipated the organization would be willing to participate in this research (von Zielonka, p. 69).

Table 4: Target Profiles of BL Participants

Populations	**Non-profit Agency**
Students	**150+**
African-American/Hispanic	50+
Multi-racial	10+
First language other than English	10+

- Student Requirements: individuals who had been accepted into the non-profit collegiate admissions program through their application process by spring 2014. The application process acceptance method was critical, as it screened for High School GPA, Low-Income Status (low SES), and High School Year. [xii]

- The majority of student research participants had a GPA of 3.0 or higher as they targeted selective colleges that typically have more rigorous academic requirements. The students were first in family to expect to complete college.

Following participant selection, the appropriate consent was obtained from all students. Each student was assigned an identification number, which I used to track student participation in survey components, as well as to maintain confidentiality in subsequent data analysis.

Instruments and Reliability:

The survey instrument was administered once to measure the variability of personal factors exhibited at the beginning of the Bottom Line program in early summer after the submission of college admission application documents in November/December. This survey captured collegiate outcomes in March/April. College selectivity rankings were cross-ranked with the U.S. News and World Report college selectivity index (Appendix G). The content and format of the survey questionnaire designed for the study were decided by an analysis of several instruments, including the following three sources: (1) the Grit Survey developed by Duckworth (2007); (2) the Success Identity Survey developed by Scott Solberg (2007); and (3) demographic, personal, and familial data obtained from the Bottom Line admissions application document.

Procedures

A preliminary meeting was held with the Bottom Line CEO, Greg Johnson, to introduce the study, at which time the primary researcher signed a confidentiality agreement. In addition, a meeting with the organization's Director of Evaluation, Andrew MacKenzie, was held to inform him of the purposes of the study and to request his support in the distribution of the survey. After meeting the requirements of the Boston University Research Review Board and after receiving Bottom Line's written approval to conduct the survey, the following procedures were designed in order to maximize student participation in the study:

Participant Recruitment

- The process for gathering participants was:
  - Researcher contacts the CEO of program, who had verbally agreed to allow access to the list of student program participants.
  - A pre-survey memorandum advising students of the study was sent by the Bottom Line founder, David Borgal, to the organization. This memorandum described the purpose and importance of the study, encouraged their participation in it, and guaranteed their anonymity and confidentiality.
  - The Bottom Line operations manager signed up participants with an informed consent form, with a signed copy going to the primary researcher's file (See appendix C).
  - Those volunteering to participate in the study were offered an abstract of major findings after the data is collected and analyzed. The Consent Form Letter (Appendix C) and the questionnaire (Appendix I) were distributed. The estimated completion time was 15-minutes. (Von Zielonka, 2003, p. 73).
  - A follow-up thank you note of appreciation was electronically generated to students after they completed and submitted the questionnaires.

The Bottom Line Founder, Dave Borgal, contacted each individual participant by email and followed-up by email to confirm online survey participation.

Please note that the Bottom Line application currently has a student waiver regarding general research participation, which was not used in this study in lieu of a separate informed consent form.

Consent Forms

The student participants 16 or older were generally targeted. If they were younger than 16, I included additional sample consent form language:

> You must be 16 years of age or older to consent to participation in this research study. If you consent to participate in this research study and to the terms above, please sign your name and indicate the date below. You will be given a copy of this consent form to keep for your records. (Adapted from Marvasti and McKinney, forthcoming.) In the case of children (those under 18), the consent form must be signed by the child's parent or legal guardian and assented to as appropriate by the child (Protection of Human Subjects, 1996, 46:408) (Seidman, 2006 p. 51).

The consent form also covered Possible Uses of Survey Data; Seidman advises researchers "cast the widest net of consent conceivable in the future, e.g. publish something from their dissertation or base a presentation for a conference on research" (Seidman, 2006, p. 59). The consent form should also address remuneration. Seidman recommends to "normally present a token of appreciation" and that the form should state that the "participant is agreeing not to make any financial claim upon the interviewer or

what the basis of the remuneration will be." The participant thus has opportunity to join or not to join study on the basis of explicit information (Seidman, 2006, p. 60). The suggested remuneration for participation in my study was a $5 Target gift card.

Data Collection

The data gathering methodology included a review of Bottom Line documents and a self-completion survey questionnaire (Appendix I). The questionnaire gathered participants' demographic information and personal levels of student achievement from their response to the Bottom Line admissions application. The Grit Survey and Success Identity Survey utilized a fixed alternative or five-point Likert-type scale responses. The study comprised these phases:

1. Reading through the Bottom Line Application Results
2. Reviewing and verifying personal In-depth surveys
3. Verifying survey results based on college admission rates. Collegiate rankings were numerically coded based on US News & World Report (2015).

Instrument

To test the hypothesis that there is a moderating effect on college admissions for those who actively participate in outreach programs with positive contextual factors and personal factors, this investigation will employ a correlation analysis methodology in its surveys. The survey design provides a quantitative or numeric description of trends, attitudes, or opinions of a population by studying a sample of that population. From sample results, the researcher generalizes or draws inferences to the population (Creswell, 2014, p. 154).

It was hypothesized that an in-depth survey will yield substantial directional information regarding to what extent individual low-income minority students possess specific personal, social, and contextual factors that contribute to their final college selection outcomes. The surveys of the low-income minority students during their critical senior year aimed to describe and understand college admittance outcomes through research questions (Boeije, p. 11).

Document Collection

To examine students' experience, the following data sources (Table 5) were used:

Table 5: Data Sources

Data Sources	Why Information is Relevant to Research Question	Collection Procedures	Analysis
Student Demographic Survey Responses	Background data: Student Age, High School, Family Income Status, GPA and SAT scores	Intake Survey upon application to admissions agency	Descriptive Analysis: Mode, Mean, Frequency, & Percentiles. These will provide quantitative descriptive data to correlate with final college admission decisions and published typical student profile data.
Student Surveys (Background: Administrators Meetings: Chief Executive Officer, Director, Evaluation)		Students: Online Surveys 1) on publication of admission results/decisions by April 15	Content survey and logistic regression analysis to be interpreted through Dr. Solberg's Student Success survey model and Duckworth Grit survey models.
Organization Published Documentation Admissions Agency	Read annual reports, and coaching curricula to further my understanding of setting and students' academic backgrounds.	Collect from CEOs, operations managers, and published internet data.	Review and summarize key facts from published documentation. These data will provide background for agency and student high school background for research study.

Researcher field notes and self-memoranda. After the survey, the researcher wrote up self-memoranda noting her impressions of the survey data (Table 6).

Table 6: Data Collection Timeline

Student Participants	Phase One: I Bottom Line Application Data (May)	Phase Two: In-depth surveys (June)	Phase Three: College Admission Decisions Final Report (October)

Jennett, Pauline

Analysis

The research goal was to submit data to a series of discriminate correlation evaluation analyses to determine the moderating effects between active participation in the outreach program (Bottom Line), contextual factors (parental, family, school, community outreach), and personal factors (e.g. success identity: motivation, and resilience) as independent variables.

Descriptive statistics included frequency distributions, percentages, measures of central tendencies, and standard deviations. Measures of central tendency included the mean or average of the n = sample size, median = middle score, mode- = most frequent score, the midrange = highest plus lowest score divided by two, the range = the difference between the highest and lowest score, and the standard deviation, plus a set of sample scores, which is a measure of variation by formula (Triola, 1994). The correlation statistics included Spearman Rho correlation tests, and the data was analyzed using Statistical Packages for the Social Sciences (SPSS) at Boston University.

Furthermore, an analysis of the sample linear correlation coefficient, where r

measures the strength of the linear association or relationship between the paired x and y values in a sample, was utilized. The multiple regression equation expresses a linear relationship between a dependent variable y and two or more independent variables (x1, x2....x4), for example, grit and resilience. Finally, the stepwise regression analysis, whereby independent variables are treated for inclusion in the regression "equation" was a key analytical step in the survey review (Trioli, p. 581). "Stepwise regression is a semi-automated process of building a model by successively adding or removing variables based solely on the *t*-statistics of their estimated coefficients. Properly used, the stepwise regression option puts more power and information at your fingertips than does the ordinary multiple regression option, and it is especially useful for sifting through large numbers of potential independent variables and/or fine-tuning a model by poking variables in or out" (Duke.edu).

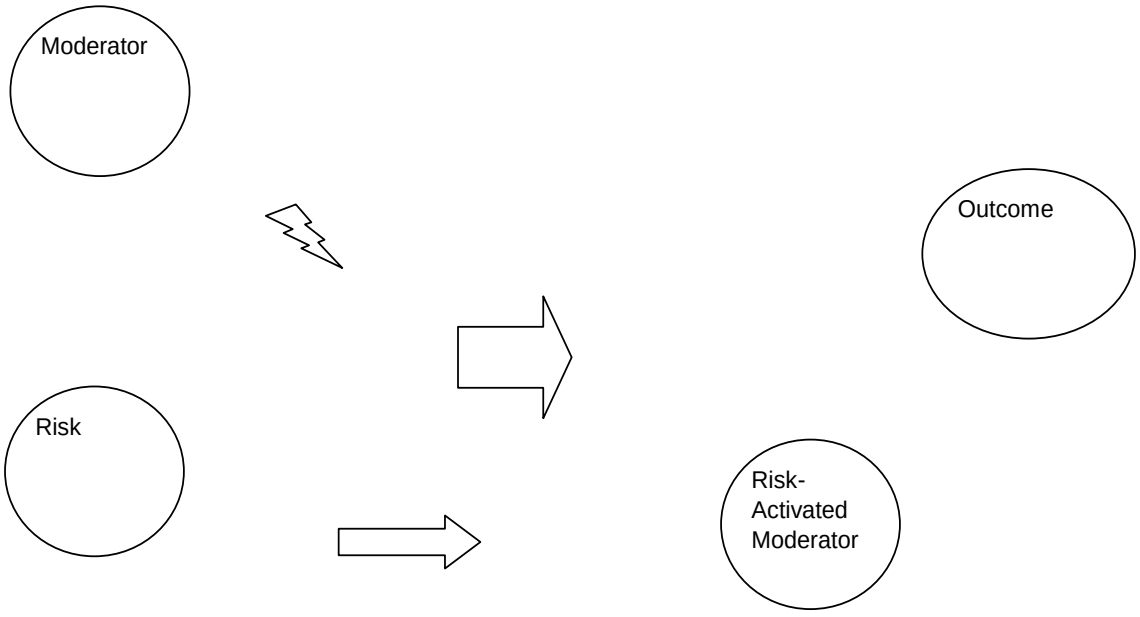
As I have noted, resilience is a key independent variable in Coleman's minority student achievement model, as it represents an important personal factor in the process. Masten also posits that a "relatively small set of global factors are associated with resilience, [and that these] include connections to competent and caring adults in the family and community, cognitive and self-regulation skills, positive views of self, and motivation to be effective in the environment" (Masten, p. 234).

In her analysis, Masten utilizes a "variable-focused approach [which] uses multivariate statistics to test for linkages among measures of the degree of risk or adversity, outcome, and potential qualities of the individual or environment that may

function to compensate for or protect the individual from the negative consequences of risk or adversity" (Masten, p. 229).

In addition, in multiple regression analysis, "a regression coefficient, whether standardized or not answers the question: for every one-unit increase in an independent variable, what change is expected in the dependent variable – controlling for the effects of all the other independent variables." (Vogt, 2007, p. 148) The dependent variable in our model is selective college admissions.

Figure 3: Examples of Interaction Models from Resilience Research



Masten, A. S. (2001). Ordinary magic: Resilience processes in development. American Psychologist, 56(3), p. 231.

In this investigation, the intervention strategies found in outreach programs such as Bottom Line can assist in moderating the total impact of risk factors such as lower class status, low income, and limited family support. Masten notes that interventions such

as “Head Start, Fast Track and the Abecedarian Project...have a developmental systems perspective and they target multiple systems in their intervention...they all focus in developmentally sensitive ways on building competence and fostering healthy adaptive systems" (Masten, p. 234). Furthermore, intervention strategies...could focus on adding more assets; theoretically, if enough assets or resources were added to a child's life, the outcome variable of interest could be maintained at normative levels, counterbalancing the negative effects of high adversity. The concept of *compensatory effects* refers to the idea that enough positive assets could offset the burden in a child's life from one or many risk influences. Asset-building interventions are based on this assumption that [within] the strategy of mediated influence, intervention can be mediating attributes.

Masten astutely asks, "How do assets, risks and protective factors in resilience models influence each other over time?" (Masten, p. 230).

One relevant research study that captures this dynamic is Ladd's 2013 study on Grade-School Children's Social Collaborative Skills Links with Partner Preference and Achievement. He examined the association between grade-schoolers' skill use and their social and academic competence in school and determined that a correlation did exist. Ladd's research plan was to:

a) Build and populate a taxonomy of collaborative skill types.

b) Begin to validate skills that are included in the taxonomy by testing the hypothesis that specific skill types are associated with relevant social and scholastic outcomes.

c) Establish that more needs to be learned about collaborative social skills.

d) Determine whether grade-schoolers who used collaborative skills have higher levels of social and scholastic competence (Ladd, 2013, p. 157).

With Ladd's and Coleman's work in mind, this investigation tested the hypothesis as to whether, how, and to what extent high school students who used resilience skills had higher levels of acceptance into selective colleges. Such ways of analyzing survey answers and debriefing that content with a peer researcher have the potential to yield a deeper understanding of the complex nature of selective college guidance and college admissions counseling for future minority and low-income applicants.

In addition, it is critical to revisit Coleman's "resilience model of minority student achievement [which] presents a definition of resilience (Coleman and Karcher, 2001; McCubbin, 2001, 2004) that emphasizes the need to distinguish between resilience as a process and resilience as a personal characteristic, and [describes] the model of minority student achievement that integrates social stratification, contextual, and personal factors as they facilitate or constrain achievement" (Coleman, 2006, p. 1). The emphasis on the personal factor of resilience is an ongoing cogent aspect to low-income minority achievement in the collegiate landscape.

A limitation of this research was the inability to examine an unlimited amount of personal, social, and contextual factors, or for that matter unlimited outreach programs that can make a positive impact on the outcome of minority student achievement and minority student selective collegiate outcomes. This research, therefore, focused on only

a select few factors from these arenas, including motivation, grit, and perseverance/resilience, factors that have been deemed critical through prior research.

Threats to Validity and Reliability

As I analyzed the research data, it was important to examine issues of validity and reliability that should be contained to produce solid theoretical constructs. Validity examines the "extent to which an account accurately represents the social phenomena to which it refers" (Marvasti, p. 113). The researcher must be open to the process of reading answers through careful exploration; she must approach her research interests with a certain sense of naiveté, innocence, and absence of prejudgments (Moustakas, 1994, p. 85) (Seidman, p. 26).

There were several threats to validity that raised potential issues about the individual survey design and the researcher's ability to draw conclusions about the effect of the students' experience. Each is described below along with the methods that will be used to control for these threats.

Researcher bias occurs when a researcher approaches a theory or situation predisposed to a certain position. In her study of working-class American women, Luttrell advocates that researchers name the tensions, contradictions, and power imbalances that they encounter in their work, rather than attempting to eliminate them (Lutrell, 2000).

Validity also means ensuring that the data is reliable. As the survey research is conducted, "internal consistency over a period of time leads one to trust that [a study

participant] is not lying to the interviewer" (Seidman, p. 18). I reviewed the internal consistency of each student's responses to ensure that answers given over the course of different survey sections aligned with one another. A graduate research assistant, Jimin, re-verified deidentified survey results and collegiate admission percentages. In addition, Dr. Allan G. Harbaugh, Boston University School of Education Clinical Assistant Professor, reviewed logistic regression data results.

Data was also obtained from multiple sources (including survey answers and self-memoranda) on a monthly basis to triangulate findings. A final caution about reliability is that "it is important to verify the survey data are consistent over the course of the survey cycle. The reliability of reports is controlled by the usage of Intercoder reliability, where other observers are asked to review analysis findings and see if they agree with the conclusion (Marvasti, p. 115). The data is only as good as the survey summaries. Polkinghorne (1988) “argues that reliability is not the stability of the measurement, but rather the trustworthiness of the notes” (Webster, p. 21), or dependability of the data (Webster, p. 93).

The analysis that follows was garnered from reviewing over 2000 college admission rates of minority high school students. Additionally, results from an 80-item questionnaire that was completed by 199 high school students were collected. The raw data was downloaded from SPSS where line and bar graphs were created to illuminate trends. The findings are largely driven by the research questions and the collected data. They also include the most frequent themes that emerged from the quantitative data.

Summary

In summary, this in-depth correlation analysis research project on low-income minority students during their collegiate application guidance counseling process has complex components, but can be a critical descriptor of ways that low-income minority students can position themselves in a stronger manner for selective college admissions. Careful evaluation of the plan and IRB approval ensured that the sensitive, ethical components of this study were handled with care in order to provide enlightening research results on the question at hand. The paucity of lower-income minority students in selective colleges compared with other cohorts of students is an important matter, and the reasons for it are worth investigating. I trust that this study will provide additional useful information on low-income minority experiences that can lead to future policy or curriculum recommendations in high schools and/or non-profit college admission agencies, and that these will improve the odds of low income minority students applying for, being accepted to, and succeeding in selective higher education spaces.

CHAPTER 4: FINDINGS

Introduction

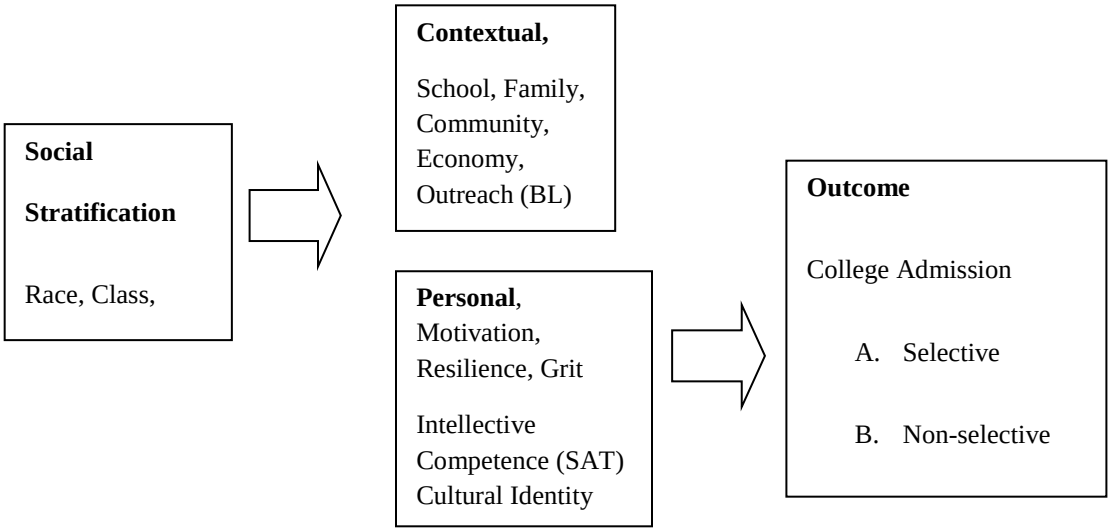
The purpose of this study was to explore the critical personal, contextual, and structural factors that contribute to selective college admittance among low-income minority high-school students. Coleman's process model for minority student achievement provided the conceptual model for understanding the relationship among personal, social stratification, and contextual factors that affect admission to selective colleges. As a reminder, "given the social stratification factors which put minority students at risk for failure or underperformance in schools, those students who succeed in school fit current definitions of resilience" (Coleman, 2006, p. 1). The interaction among these factors has long-term implications for selective college acceptance among low-income/minority students. Data from the Bottom Line admissions survey and composite personal scale by Solberg and Duckworth were used to estimate the model's parameters.

This chapter reports the analysis of these data and provides an overview of the surveyed minority low-income high school student in aggregate, which focuses on some of their most salient descriptive features. This chapter also reviews the statistical regression analysis of the surveyed student personal characteristics based on the results of their selective college application results, followed by the findings. The raw data for most of these findings are included in the Appendix. Referencing these reports, the chapter provides an interpretation of these findings.

This chapter also presents the hierarchical and backwards stepwise regression

utilizing the model solution to create simulated data output from which the significance of certain independent variables were used to construct the increased likelihood of the dependent variable, namely, selective college admissions among low-income/minority students. The selective college model consists of the following (Figure 4):

Figure 4: Minority Student Selective College Model



(Coleman, H.L.K., (2006). Midian student achievement: A resilient outcome? In D. Zinga (Ed.). Navigating Multiculturalism: Negotiating Change, Cambridge Scholars Press p. 3)

The following research questions were examined to better understand the relationships between personal factors in the minority student achievement model and selective collegiate admissions practices.

1. To what extent do interventions in contextual factors modulate the selective collegiate outcome?
2. To what extent do relevant personal factors (independent variables) individually and collectively predict how participants in an effective pre-

collegiate program are admitted into a selective university?

3. Is there a moderating effect on college admission outcomes between active participation in these programs and personal factors?

Descriptive Analysis

In this chapter, I note summary descriptive findings. Namely, certain ethnic groups within the minority factions were more predisposed to avail themselves of the resources provided by a college access intervention program.

A review of the data reveals that 1000 survey links were emailed to high school students in the Massachusetts, Illinois, and New York City regions, and 199 students completed the surveys in summer 2015 for a return rate of 20%. To be eligible for the survey, the students had to be participants in the Bottom Line program and be a current high school senior. Several key characteristics of this target population were income (average household incomes were targeted to be $40,000 or below) and grade point averages (GPA) with target average GPAs 3.0+.

Student Profiles

Sample Size/ Gender

Table 7 depicts total respondents, n = 199, and shows the sample breakdown is majority female with n =153 or 76.9% respondents and n = 46 or 23.1% male respondents. This mirrors the larger trend in higher education enrollment, which is skewed towards females, since “nearly 60 percent of college students today are women” (Bae, Choy, Geddes, Sable & Synder 2000).

Table 7: Total Bottom Line Survey Respondents

Sex				
	Frequency	Percent	Valid Percent	Cumulative Percent
Female	153	76.9	76.9	76.9
Male	46	23.1	23.1	100.0
Total	199	100.0	100.0	

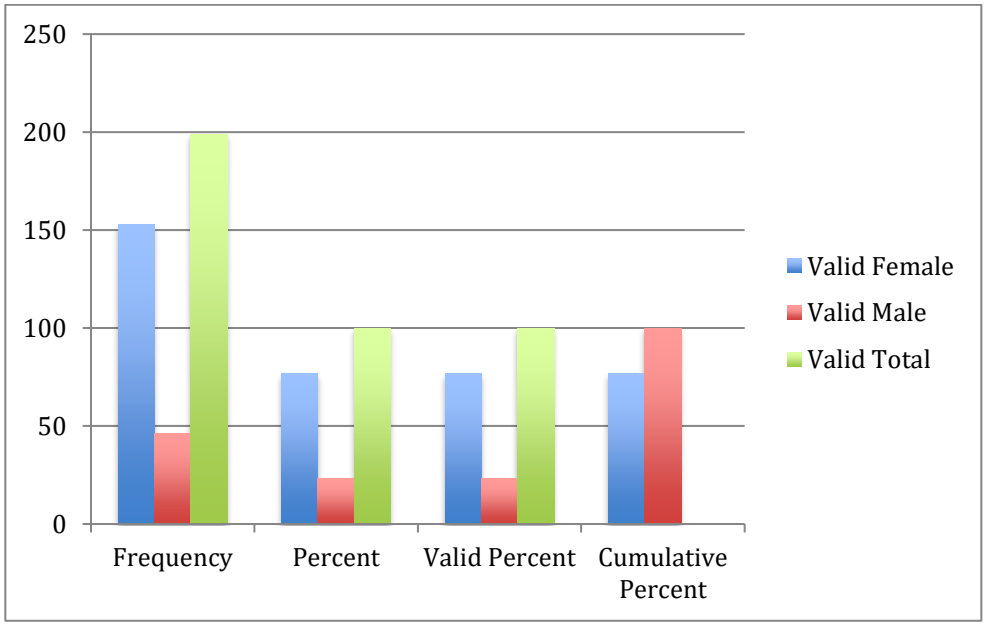
BL 2014 Student Application Data

Specifically, several drivers for this include a higher incidence of blue-collar job opportunities for men and increased career options, such as union jobs including plumbing and brick laying, which are often more dominated by males. Critically, "among low-income and minority students, young women are 25 percent more likely than young men to enroll in some form of postsecondary education…while women have made considerable inroads into traditional white-collar male jobs, they have had significantly less success moving into skilled blue-collar occupations" (England & Farkas 1986; Reskin & Roose 1990) (Jacobs, p. 4). Males may perceive more readily available career options without taking on the debt and sacrifice of a college education.

Furthermore, "higher non-cognitive skills and college premiums among women account for nearly 90 percent of the gender gap in higher education" (Jacobs, p. 1). Delving further into non-cognitive skills reveals that traditionally "poor 'non-cognitive' skills among boys include the inability to pay attention in class, to work with others, to organize and keep track of homework or class materials, and to seek help from others…leading to poor high school performance, which decrease the chance of being accepted to college" (Jacobs, p. 4). Recent initiatives, such as the My Brother's Keeper

Initiative that target increased minority male participation in higher education, attempt to dismantle male barriers to collegiate achievement. This gender disparity highlights the critical role that programs such as Bottom Line have to carry low-income/minority males over the hallowed thresholds of selective colleges. See Figure 5: Bottom Line Surveyed Frequency and Percent: (Gender) below.

Figure 5: Bottom Line Surveyed Frequency and Percent: (Gender)



BL 2014 Student Application Data

Race/Ethnicity

Table 8 presents descriptive statistics for participating ethnicities, and shows that the vast majority of student participants were minorities, largely composed of Asian, African-American, and Hispanic students. White respondents completed only 5 (or 2.5 percent) of the 199 completed surveys. There are also 33 different ethnicities represented in the student-surveyed population, including the "other" category (5.1 percent). The

ethnicities in which the student population is most prominent include Dominican, Chinese, Haitian, Mexican, and Puerto Rican. The table below (Table 8) notes the specific ethnicity group breakdowns.

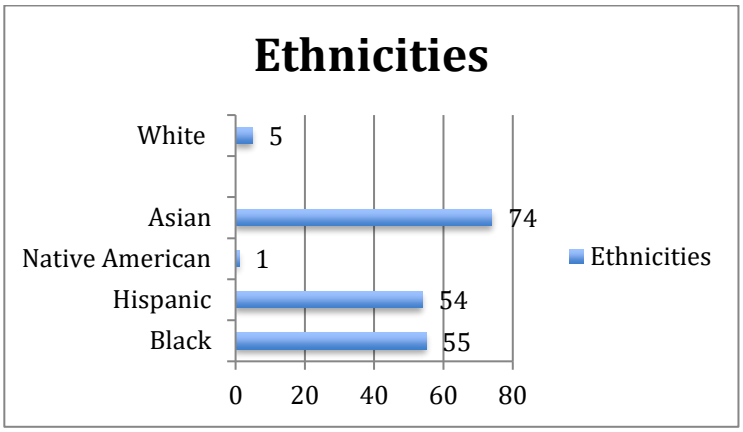
Table 8: Description of Surveyed Participating Ethnicities

Bottom Line Total Respondents	199	100.0%
Black	55	27.6%
Hispanic	54	27.1%
Native American	1	.5%
Asian	74	37.2%
White	5	2.5%

BL 2014 Student Application Data

Of note, the large immigrant community in this population could be a result of "the high goals expressed by most immigrants and their efforts to guide their children in the direction of educational success provide a powerful impulse forward. These influences help explain why many Haitian and Mexican youths, coming from poor and discriminated families, do well academically" (Portes, p. 105). A primary reason cited for immigration is to create better opportunities for their children, and education is one factor seen to expedite family success.

Figure 6:Bottom Line Surveyed Student Ethnicities



BL 2014 Student Application Data

Among this immigrant community, the lower income minority immigrant often has special challenges. Specifically, the immigrant community can be divided into two segments – one group is composed largely of "highly skilled professionals primarily from Asia who fill high-demand positions in engineering, the medical professions and other technical options. The other consists of unskilled labor and manual workers primarily from Latin America, the Caribbean, and some Southeast Asian countries. The former does very well in higher education" (Baum, Flores, p. 172). To an outsider, an immigrant may be monolithic, but the variations across ethnicities play a critical factor in our sample student composition. As we evaluate the origin of our student population, who are primarily first generation college students, it is not surprising to encounter students from certain Latin America, Caribbean, and Southeast Asian communities that are not from the highly skilled professional segment.

In addition to income and professional disparities, parental college graduation rates often affect their offspring's' college success rates. Baum notes:

> In 2000, children of immigrants were nearly as likely as children in native families to have a father with a B.A. degree…however, the averages obscure the reality that 50 to 80 percent of foreign-born fathers from Africa, Japan, Korea, Hong Kong, Taiwan, India, Pakistan/Bangladesh, and Iran were college graduates, compared with only 4 to 10 percent of fathers from Mexico, the Caribbean, Laos, and Cambodia (Baum, p. 173).

The Bottom Line program targets first generation college graduates, and so it is not surprising to see an overrepresentation of certain "underprivileged" immigrant groups. It is also important to note that many of these immigrant populations are not native English speakers. Baum states that "applying for college and financial aid – a complex task even for students with English-speaking parents who are themselves college graduates – is far more difficult for the children of non-English speaking immigrants, even those who are themselves fluent" (Baum, p. 177). The difficulties of managing complex forms can be mitigated by the individual guidance counselor instruction found at Bottom Line.

Finally, the manner in which certain immigrant populations migrated to the United States can also affect long-term achievement. For example, historically "southeast Asian refugees, such as Vietnamese and Laotians, enjoy a certain advantage by virtue of a positive governmental reception that included considerable resettlement assistance. By contrast, Haitian and Mexican immigrants combine modest average human capital with a governmental stance that defined them as potential illegal aliens and treated them

accordingly" (Portes, p. 78). One's initial reception in the U.S. can impact one's short-term resources, student reception, and access in the secondary educational arena. Negative rhetoric concerning Mexicans still abounds, as we see for example in the incendiary comments of 2016 Presidential Candidate, Donald Trump, who also happens to be a graduate of a selective institution, the University of Pennsylvania. Overcoming a deficit in cultural capital and new language skills can be strong drivers to seek out intervention programs to level the collegiate playing field among immigrant families.

A. African/Black students: Among the minority respondents, 27.6% of the surveyed students were Black or African American, including African America/Hispanic or Latino, and African-American/Other. If we review individual African regions, several countries are represented including Nigeria, Sudan, and Somalia. Table 9 shows that among our Afro-Caribbean student population, Haiti has the largest percentage of students, with a frequency of 13.

Table 9: Bottom Line Surveyed Top Ethnicities

Top Ethnicities	Students	Percentage
Dominican	22	11.1
(Asian)	20	10.1
Chinese	17	6.5
Haitian	13	8.6
Mexican	10	5.0
Puerto Rican	9	4.5

BL 2014 Student Application Data

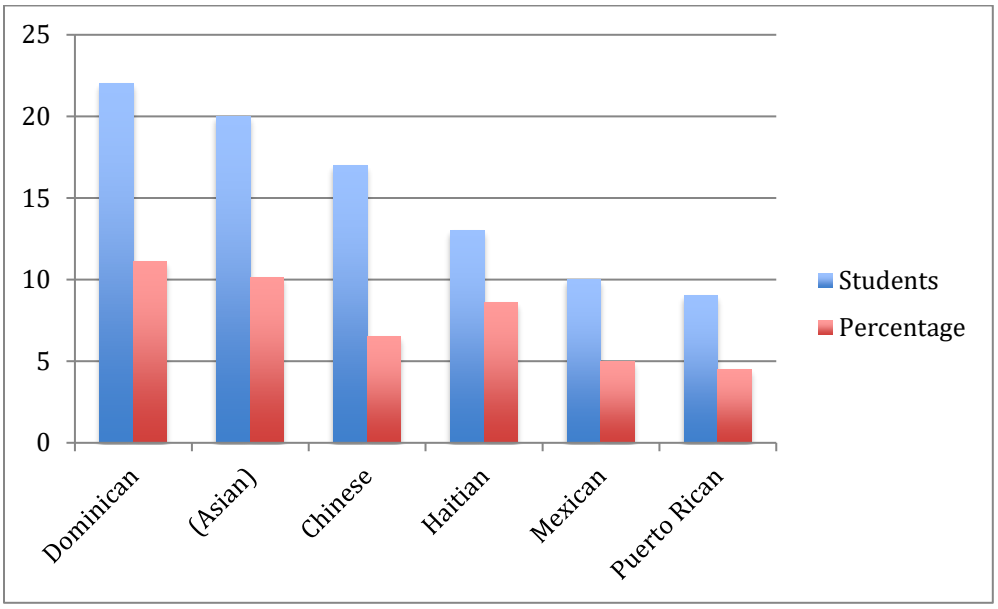
Among black immigrants, certain ethnic traits also emerge. Historically:

> "Black immigrants are less likely than native-born blacks to have the characteristics that tend to reduce college enrollment rates. They more often come from two-parent families, attend private schools, and live outside rural areas than do native-born blacks. They are often less likely than native-born blacks to have low test scores. Black immigrant success, particularly evident in the frequency of enrollment in selective colleges and universities is, however, limited to those from select countries. Other groups of black immigrants, including Haitians, face significant hardships." (Baum, p. 182).

Immigrant collegiate success seems to be greater among certain segments, which may be why there is lower participation from certain predominantly black countries including Nigeria, Ghana, and Barbados in the sample.

B. Hispanic/Latino students: Among the minority respondents, 27.1% of the survey student population was Hispanic or Latino, or Hispanic or Latino, White. As we see in Figure 7, among the Latino population certain ethnicities emerge in larger percentages, namely Dominican, Mexican, and Puerto Rican at 22, 10, and 9 percentage frequencies respectively.

Figure 7: Bottom Line Surveyed Top Student Countries



BL 2014 Student Application Data

C. Native American students: A smaller percentage, 0.5 percent of the surveyed students, was American Indian or Alaskan Native or Pacific Islander, Hispanic or Latino, and the category "other" represented 5%. Native American students have typically been grossly underrepresented in higher education due to the historic placement of reservation schools. Karen Francis-Begay, Assistant VP of Tribal Relations at the University of Arizona notes familiar themes for low Native American student collegiate engagement: "Many families are alarmed at the 'sticker price.' Second, distance from home. Many parents want their students to be close to home. Third, financial aid and scholarships. Many families worry about whether their student will get funds to cover a majority, if not all, of the cost of a college education." (Begay, 2016) This population, which has been often marginalized on tribal reservations, often requires special targeted recruitment efforts to address their barriers to higher education success.

D. Asian students: People hold many positive beliefs about Asians and the higher education landscape, particularly about their intellectual aptitude and strong family support systems. Asian students represented 37.2% of our minority population. Among the Asian community, the largest student populations were Chinese (17) and Vietnamese (10).

It is important to note the widely-published disparities among Asians who are often considered "model minorities" in contrast to other minority groups, including African American and Latinos. For example, Victor Bascara (2006) describes the model minorities as "a testament to the success of the incorporative capacities of the United States, politically, economically, and culturally; …while Asian Americans were held up as shining examples of hard work and good citizenship, African Americans were positioned as loud, complaining and lazy" (Lee, S. J., p. 4, 5, 2015). Of note, model minorities often do not include Southern Asian groups, such as Vietnamese, which are represented in this study. Similar to the darker-skinned hierarchy in the African-American community, darker skinned Asian citizens are often placed on the lower portion of the status pyramid. The study focus on specific ethnic students of color is significant since "a racial gradient continues to exist in U.S. culture so that the darker a person's skin is, the greater is the social distance from dominant groups and the more difficult it is to make his or her personal qualifications count" (Portes, p. 47). Despite these hurdles, it is encouraging to see Vietnamese students taking advantage of the Bottom Line resources. Education is important to this segment. In fact, "the Vietnamese have come to believe that education is the chief means to achieve this goal and they have

adjusted their cultural patterns to orient the younger generation toward educational and occupational attainment." (Portes, p. 67)

Due to the inability to clearly label all of the distinct Asian origins, White and Asians are analyzed in contrast to the African-American and Latino population when we control for race in the regression analysis.

High Schools

We further examine the high schools our student population attended. The three school districts included in this study are in metropolitan areas in New York, Massachusetts, and Illinois, which serve large populations of low-income, minority student populations, and represent 86 high schools. The cities included are Bottom Line target cities, and also represent areas "most heavily affected by new immigration" (Portes, 2001, p. 23). The majority of these high schools are public, exam, and charter high schools.

It is critical to examine some of the features of individual high schools because "research suggests that schools also play a large role in educational outcomes, whether through the structural characteristics of educational systems or through specific policies related to schooling, especially those related to the enacted curriculum and curricular standards" (Schmidt et al., 2001; Schmidt, 2015, p. 371). For perspective, when I examined the DART levels, which is a Massachusetts high school ranking, I encountered disparities, with outliers such as Boston Latin Academy, which require passing a rigorous admissions test and which, based on a DART ranking of 90 on a scale of 1 to 99, is one

of the top ranked Massachusetts schools.[1] Appendix D notes the Dart rankings of the Massachusetts high schools.

When we consider selective collegiate admissions, feeder schools still exist, among them Milton Academy, Phillips Exeter, and Boston Latin, as well as Sidwell, and Germantown Friends Schools. [xiii2] The feeder schools often charge tuition in the tens of thousands of dollars. Of note, low-income students admitted via blind admissions can attend some feeder schools for free when parents' income is $75,000 or less. These students have access to high secondary school resources and are not typically Bottom Line participants.

Among low-income students, high schools are predominantly public schools with no tuition or test schools with higher rigorous academic standards. In Table 10, the high schools with frequencies of nine or greater are n = 45, or 23.1 percent of the sample.

Table 10: Bottom Line (BL) Surveyed High School Frequency

Frequencies

Statistics

HighSchool Freq

N	Valid	199
	Missing	0

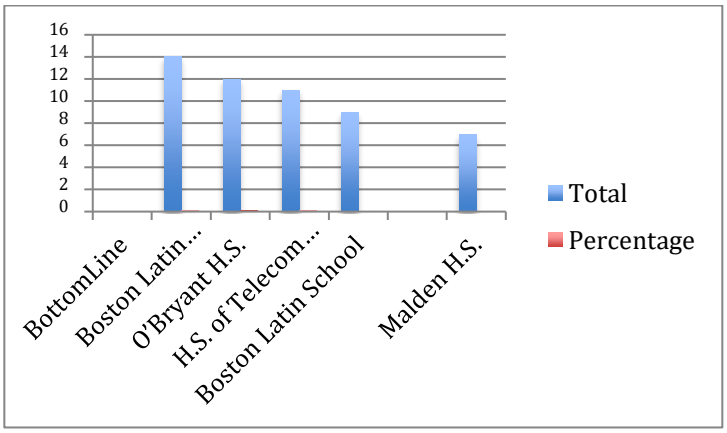
HighSchool Freq

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High school frequency < 9	153	76.9	76.9	76.9
	HighSchool frequency =>9	46	23.1	23.1	100.0
	Total	199	100.0	100.0	

BL 2014 Student Application Data

Figure 9 notes that high schools with the greatest frequency levels were Boston Latin Academy, Ma (14), O'Bryant High Schools, MA (12), and High School of Telecommunication and Performing Arts, NY. Focusing on these "feeder" Bottom Line high schools could constitute a crucial factor in future recruiting targets. Of note, exam schools including Boston Latin Academy and Boston Latin School, which are highly rigorous, had several students admitted to the most selective colleges.

Figure 8: Description of Top High School Percentage



BL 2014 Student Application Data

In fact, the student admitted to 17 colleges with the highest SAT score was drawn from the NY exam school, Hunter College. Critics may wonder if Bottom Line is drawing from the cream of the crop with their top students selected from the higher performing and more rigorous exam mandated public schools?

Table 11: Admitted Colleges for Surveyed Student with Highest SAT Score

Student Ethnicity/Gender	High School	SAT Score	Admitted Colleges (selected)
Latino Female	Manhattan Hunter Science H.S.	2240	Dartmouth, Emory, Rice University, SUNY Binghamton, University of Rochester, Vanderbilt, Wellesley, CUNY Hunter, University of Southern California

Quality high school rankings were gathered for the Massachusetts schools based on their DART High School Background (http://www.mass.gov/edu/government/departments-and-boards/ese/programs/accountability/accountability-and-assistance-system-overview.html)

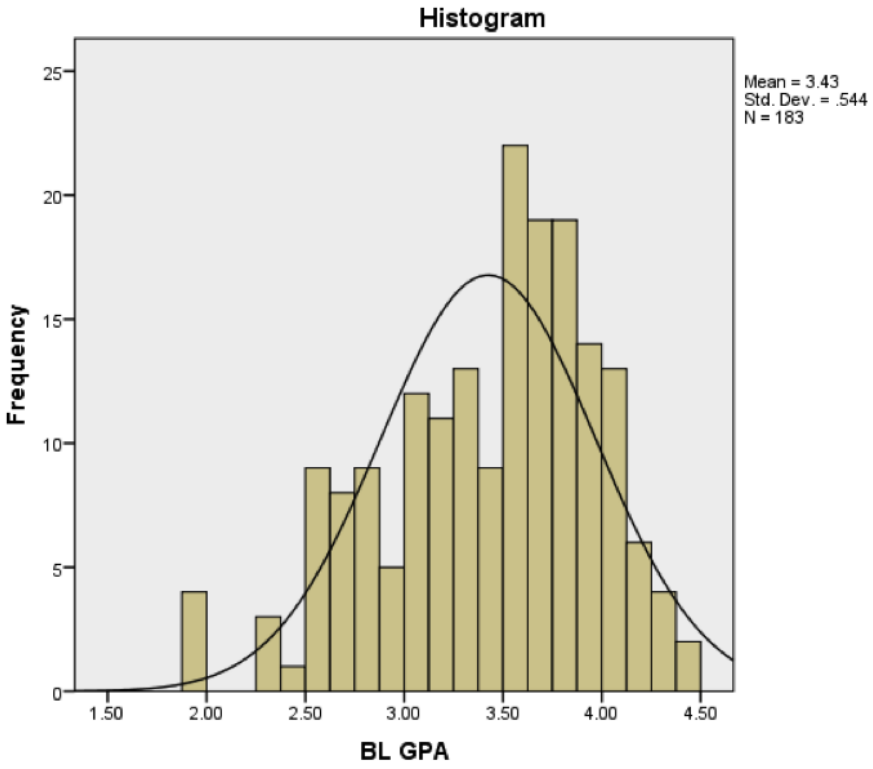
Table 12: Bottom Line Surveyed High School Frequency

Students	Total	Percentage
Bottom Line	199	
Boston Latin Academy	14	7%
O'Bryant H.S.	12	6%
H.S. of Telecom Arts and Tech	11	5.5%
Boston Latin School	9	4.5%
Malden H.S.	7	3.5%

BL 2014 Application Data

A. Average High School GPA: As we examine the average high school GPA as an independent variable among n = 183 students, it is important to note the evaluative limitation across a set of high schools with varying degrees of rigor. For example, "grades are less than a perfectly valid indicator of academic achievement because they are influenced by other factors. Grading scales are not universalistic in different types of schools, and they vary significantly by school systems" (Portes, p. 247). Despite these limitations, this study utilized a GPA of 3.0 as a target for students who would be stronger candidates for selective college admittance. This is also the target GPA for the Bottom Line program so there is a smaller incidence of students who achieved less than a 3.0 GPA. For the entire sample, in Figure 9, the minimum noted GPA was 1.93, and the maximum was a 4.47 with a mean of 3.4251, and a std. deviation of .54397.

Figure 9: Bottom Line Surveyed Student GPA Histogram



Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
BL GPA	183	1.93	4.47	3.4251	.54397
Valid N (listwise)	183				

BL 2014 Student Application Data

B. SAT: The SAT test is a key quantitative variable or data point that a college admissions officer utilizes to screen a college application. Most students take this standardized test in their junior year in order to submit college applications in their senior year.

The current SAT (Standardized Aptitude Test) consists of three sections. These sections include "The critical reading section which includes reading passages and sentence completions... The writing section includes a short essay and multiple-choice

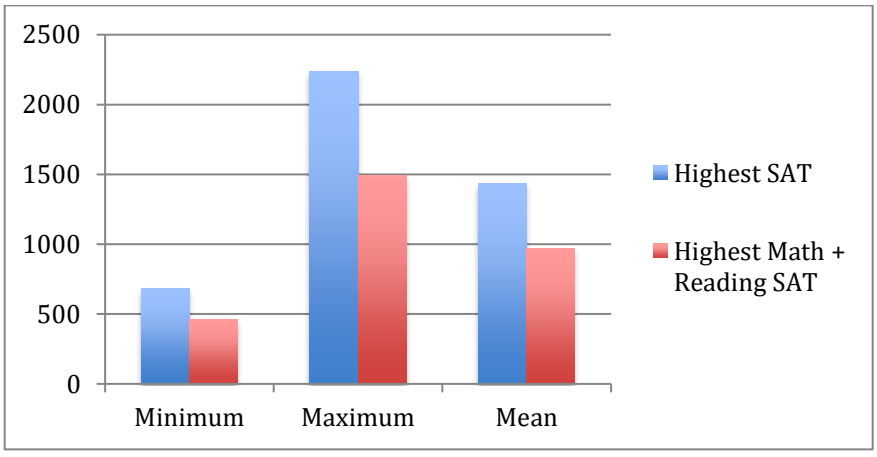
questions on identifying errors and improving grammar and usage.

The mathematics section includes questions on arithmetic operations, algebra, geometry, statistics and probability" (https://sat.collegeboard.org/about-tests/sat).

Data have shown that historically minority students excluding Asians "score significantly lower than majority students on the SAT. In 2005, black high school seniors who took the SAT scored an average of 100 points lower than white students in both the math and the verbal sections, and Hispanic students scored on average about 70 points lower than whites in both sections." (College Board 2005) (Bial, Rodriguez, 2007, p. 20) As noted, middle and upper income white students often have additional resources, e.g. private or customized tutoring, to gain higher SAT scores.

In Figure 10 and Table 13, SAT scores were provided for n = 181 students. The minimum SAT score was 680, and the maximum SAT Score was 2240 out of 2400 possible points. The Mean was 1431 with a Std. Deviation of 277.521.

Figure 10: Surveyed Bottom Line Student Personal (SAT) Range Descriptives



BL 2014 Application Data

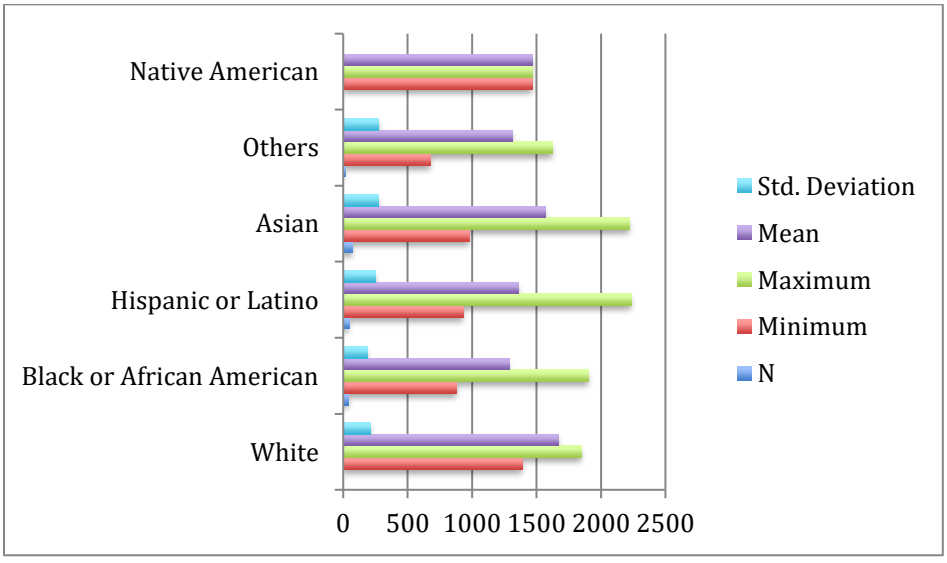
Table 13: Surveyed Student SAT Descriptives

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Highest SAT	181	680	2240	1431.16	277.521
Highest Math + Reading SAT	183	460	1490	966.89	188.250

Table 14: Surveyed Student SAT Descriptives (by ethnicity)

Statistics	**N**	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**
White	4	1390	1850	1667.50	213.600
Black or African American	43	880	1900	1286.74	191.507
Hispanic or Latino	45	930	2240	1356.89	250.416
Asian	74	980	2220	1569.46	273.114
Others	14	680	1620	1312.14	277.078
Native American	1	1470	1470	1470.00	
Total	**167**				

Figure 11: Surveyed Student SAT by Ethnicity Graph



BL 2014 Student Application Data

In Table 14 and Figure 11, as we evaluate SAT by ethnicity, several trends emerge. The highest median SAT scores were found among Whites (n=4) at 1667, with a Std. of 213.6, and Asians, (n= 74) at 1569.5 and Std 273.

The two lowest medians were Black, (n = 43) at 1286.7 with a Std of 191.5, and Others (n = 14) at 1312.1 and a Std of 277.0. Latinos outperformed Blacks with a median SAT score of 1356.8 and a Std of 250.

Colleges

Bottom Line provided individual college acceptance and rejection outcomes for each surveyed student. The rubric for defining the dependent variable of gaining admittance to a selective college was colleges that accept fewer than 50% of students who applied. This selectivity index was cross-referenced with the Barron's college ranking index to further reinforce the selectivity of these colleges from a regional and national perspective.

The selectivity data included normal college acceptances and provisional acceptances, and an analysis without provisional acceptances, which produced a nominal difference. Provisional acceptances are acceptances that are granted if a student meets additional admittance criteria. For example: two colleges that provided provisional acceptances to students in the sample included Syracuse and UMass Boston. (See Appendix D)

As noted in chapter 2, top elite domestic colleges have an average admissions acceptance rate of only 15% (Muska, 2011). Among the selective colleges that Bottom

Line students chose to attend, a larger percentage were public colleges and universities including the University of Massachusetts (UMass) college system represented by UMass Boston and UMass Amherst, the State University of NY (SUNY) represented by Stony Brook and Albany, and CUNY (City University of NY) including John Jay and City College.

The top private colleges students attended include Boston University, Northeastern, Suffolk, and Wheaton College. (See Appendix: Figure 5 – College Attending Final List). The majority of students admitted to selective colleges are not attending top Ivy League colleges with the exception of Harvard or Brown University, or a top Liberal Arts college with typical acceptance rates below twenty percent. The admitted college selectivity of this sample ranges from 30 to 49 percent, which, albeit under the 50 percent criterion, is not in the most selective class range. A few elite exceptions are in the selective college sample set, including acceptances to Harvard, MIT, and Williams College.

As a reminder, research by Bowen and Bok (1998) supports the theory that "graduates from the most selective institutions (those with the highest average SAT scores for entering freshmen) had significantly higher average incomes than graduates from the less selective institutions" (Avery, 2003, p. 5).

As we more closely examine ethnicity and the top colleges selected by the Latino population, country preferences emerge. For the children "of Mexican immigrants, parental preference is for children not to leave home for college. Ruth Lopez Turley has

found that immigrant parents, particularly those of Hispanic origin, feel this preference strongly." (Baum, p. 181) The Bottom Line organization has had success in students gaining admittance to selective colleges that often do not require Latino students to leave home, e.g. City University of New York, University of Massachusetts, and local four-year colleges.

In Figure 13, the top seventeen colleges among n =109 students include seven colleges that meet the selectivity criteria of admitting fewer than 50% of their applicants. The majority of the selected schools are large urban universities in Boston (e.g. BU, BC, Northeastern University) and New York City (CUNY, NYC, and City College). These schools meet the criteria of selectivity *and* of having close access to the student's home, which emerges as a key theme for many immigrant families.

McPherson notes "the criteria for selectivity were defined as accepting 50 percent or less of applicants… (there are approximately 1,800 four year colleges); when you include community colleges, the 50 percent criterion qualifies about 6 percent of the more than 3,100 institutions of higher learning in the U.S. as selective." (McPherson, 1990, p. 54) Carnevale & Rose further define selectivity as the top ten percent of colleges and note a "special focus on the nation's most competitive 146 four-year colleges, which constitute the top two tiers in Barron's guide to colleges." (Carnevale & Rose, 2003, p. 102). To further delineate the Barron categories, they are:

I. Most Competitive or Highly Competitive – colleges receive applications from many more students than they can enroll and reject far more than they accept.

II. Very Competitive or Competitive – The median test scores identify the middle of the most recent freshman class; half of the admitted students had scores lower than the median and half were above.

III. Competitive – Students of average ability are admissible to most of the colleges and universities

IV. Less Competitive – Students are admitted to virtually all of these schools

As we further examine the selectivity ratio as defined by U.S. New & World Report, it is necessary to define their collegiate categories. For example, a "national university" is defined by the "Carnegie Foundation for the Advancement of Teaching" as comprised of "280 institutions (173 public, 100 private and seven for-profit) that offer a wide range of undergraduate majors as well as master's and doctoral degrees; some emphasize research." (U.S. New & World Report Best Colleges, p. 73)

By contrast, regional universities have more localized brand reputations. They also offer a "full range of undergraduate majors and master's programs; the difference is that they offer few, if any, doctoral programs. The 620 universities in this category are not ranked nationally but rather against their peer group in one of four regions – North, South, Midwest and West – because in general, they tend to draw students most heavily from surrounding states." (U.S. New & World Report Best Colleges, p. 92).

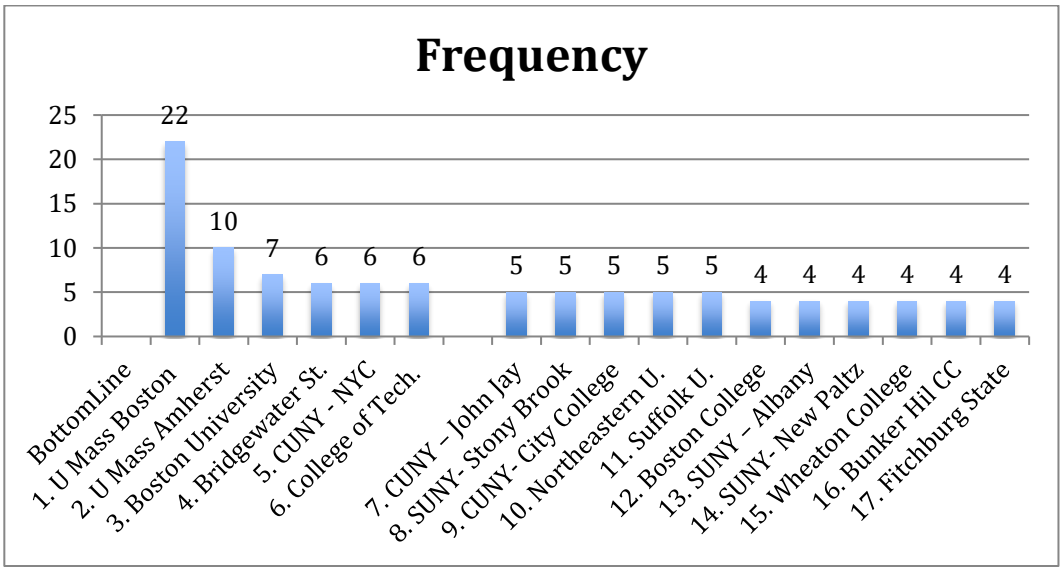
The top 17 colleges that Bottom Line students attend have the following characteristics:

Table 15: Description of Surveyed Top Selected Colleges

Top colleges	Frequency	Selectivity	National Ranking (U.S. News)	Regional Ranking (U.S. News)	Barron's College Ranking
Bottom Line	199				
1. U Mass Boston	22	70	215		Very Competitive
2. U Mass Amherst	10	63	76		Very Competitive
3. Boston University	7	37	42		Most Competitive
4. Bridgewater St.	6	81		141 (North)	Competitive
5. CUNY - NYC	6	34			Highly Competitive
6. College of Tech.	6	71			
7. CUNY – John Jay	5	53		122 (North)	
8. SUNY- Stony Brook	5	39	88		Highly Competitive
9. CUNY- City College	5	34		65 (North)	Highly Competitive
10. Northeastern U.	5	32	42		Most Competitive
11. Suffolk U.	5	42			Competitive
12. Boston College	4	32	31		Most Competitive
13. SUNY – Albany	4	56			
14. SUNY- New Paltz	4	44		25 (North)	Competitive
15. Wheaton College	4	74			Highly Competitive
16. Bunker Hill CC	4				
17. Fitchburg State	4	74		141 (North)	Competitive
Total					

BL 2015 Admit Data

Figure 12: Surveyed Student Frequency Graph: (College selected to attend)



2015 BL Student Admit Data

Household Income

SES remains a critical component in higher education admissions since, "in addition to racial disparity, the large majority of individuals who attend the most competitive colleges continue to be from the highest socioeconomic bracket; these students represent households making more than $200,000 annually (Karen and Dougherty, 2005) (Bial, Rodriguez, 2007, p. 20). The focus of this study was on the underserved population of low-income students admitted to selective colleges.

As noted, the students targeted for this program came from households whose incomes were $40,000 or below. There were a few outliers that were accounted for in the final analysis, as we compared AGI > $40M vs. AGI < $40M. For the entire sample, 181 respondents provided household income data, and the mean household Adjusted Gross Income (AGI) was $20,861.94, with a standard deviation of $17, 779. The data in Table

16 confirms that the majority of participating students were in the lower-income classification.

Table 16: Descriptives: Surveyed Family Actual Gross Income Table

	N	Minimum	Maximum	Mean	Std. Deviation
Actual AGI	198	0	84943	20987.40	17736.414
Valid N (listwise)	198				

BL 2014 Student Application Data

Methods

Statistical Analysis

As we move from the descriptive data to a more in-depth analysis, the measures employed in this study aggregate students' measures on personal and contextual independent variables. This study addressed the question of whether variations in admittance to a selective college among low-income students is related to contextual or personal differences among low-income SES groups, and the research involved a series of statistical models controlling for GPA > 3.0, and Household Income (HHI) > $40M.

The goal of this investigation was to test the hypothesis that intervention programs such as Bottom Line that were successful at getting lower income ethnic minority youth to apply to, get in, and attend selective colleges and universities attract and maintain students with higher levels of personal factors including factors of resilience, motivation, grit, and perseverance. To explore this question, we addressed it with distinct, but related research questions.

The specific questions this investigation addresses include:

- To what extent do interventions among contextual factors modulate the selective collegiate outcome?
- To what extent do relevant personal factors (independent variables), individually and collectively, predict how participants in an effective pre-collegiate program get admitted into a selective university?
- Is there a moderating effect between active participation in these programs elements and personal factors on college admission outcomes?

The initial analysis included reading through 199 student survey respondents twice. Survey respondents were de-identified for anonymity, and the number of admitted colleges per student and the percentage of selectivity of each college were rechecked with the principal investigator and a graduate-level research assistant. In addition, collegiate selectivity rankings were numerically coded based on the US New & World Reports, 2015 Edition. SPSS was utilized to analyze selectivity collegiate rate and average admittance rate. Finally, each dependent variable for four-year college selectivity was coded into two buckets. Admittance to selective colleges was defined as colleges that accept less than 50% of their applicants. (McPherson, 1990, p. 54)

Table 17: Students Admitted into Selective School

Student who got admitted from selective school

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	non-selective school	79	39.7	39.9	39.9
	selective school	119	59.8	60.1	100.0
	Total	198	99.5	100.0	
Missing	no admission into college	1	.5		
Total		199	100.0		

BL 2015 Student Admit Data

Table 18: Students Admitted into Selective School without PA- Provisional Admittance

Student who got admitted from selective school without PA

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	non-selective school	79	39.7	40.1	40.1
	selective school	118	59.3	59.9	100.0
	Total	197	99.0	100.0	
Missing	no admission into college	2	1.0		
Total		199	100.0		

BL 2015 Student Admit Data

In Table 17 and Table 18, the number of students who were accepted to non-selective schools was n = 79 or 39.7 percent of the total student population. The number of students who were admitted to selective schools was n = 118 or 59.7 percent of the sample. There was one student who was not admitted into either a four-year selective or non-selective college, but the sample size of one was too small to create an individual coding bucket. Of note, the majority of students (sixty percent) were accepted to selective schools.

Table 19: Admit Descriptive Statistics

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Highestadmisselectivity	198	6	76	44.91	15.248
Highestadmisselectivity without PA	197	6	100	47.26	16.065
#of acceptance	198	1	18	6.21	3.003
#of acceptance without PA	198	0	17	5.69	2.893
Ave.Selectivity	198	23.00	82.63	62.2888	11.19187
Average Selectivity without PA	197	23.00	100.00	63.1711	11.81168
Valid N (listwise)	197				

BL 2015 Admit Data

As we review the descriptive statistics for selectivity ratios, to total observations is 198, since only one student was not accepted to a four-year college. The highest admission selectivity ratio was 6, with one student gaining admittance to highly selective Harvard College.

In Table 19, the maximum selectivity ratio was 100, which included students who were provisionally admitted to colleges. In Table 15, the mean highest admission selectivity ratio was 44.91 percent with a standard deviation of 15.248. The average minimum selectivity ratio was 23 percent and the maximum average selectivity with provisional acceptance was 82.63, with a mean of 62.2888 and a standard deviation of 11.19187 percent. The minimum number of acceptances to a four-year college was 1, and the maximum number of acceptances was 18, with a mean of 6.21, and a std. deviation of 3.0003. The student who was accepted to 18 schools was an outlier, since the mean was slightly over 6 schools. Specifically, thanks to “the Common Application, a service that began in 1975 with fifteen colleges and is now used by more than five hundred

institutions, students today apply to many more colleges than they did in the past because they can easily submit most, if not all, of the same essays and applications data to multiple colleges" (Blumenstyk, p. 30). The common application, which allows students to apply to more than one college with a single application, has made applying to multiple colleges, for example six, logistically easier for high school students.

Sub-scale averages: Among the eleven individual subscales, in Table 20, the mean is between 3.0 and 4.0, with a notable exception of the perseverance undecided scale, which would be identified as a personal factor in the Coleman Model. These questions had a mean of 2.3607, which was lower than the other variable means. This lower average seemed to be consistent, and developmentally appropriate, with the views of a high school senior who is applying to college, who may be unsure about their short and long-term future. (Note perseverance questions below.)

Perseverance: (undecided subscale)

- I still can't think of what I will do as an adult.
- I find it difficult to see clearly what I like and what interests me. This is why I can't decide yet.
- It isn't clear to me what is really important for me.
- Although I have thought about it for a long time, I still don't have a clear idea of what I want to do.

Table 20: Sub-scale Averages

	N	Minimum	Maximum	Mean	Std. Deviation
(personal) meaning of school sub scale, Q6-Q15	199	2.17	4.80	3.5791	.49430
(personal) enjoying school sub scale, Q16-Q19	189	1.25	5.00	3.4497	.74026
(contextual) community, peer subscale, Q20-Q23	189	1.00	5.00	4.0635	.94070
(contextual) family support, family involvement and support sub scale, Q24-Q27	189	1.00	5.00	4.0582	.80675
(contextual) family support, family support sub scale, Q28-Q35	189	1.00	5.00	3.9247	.86784
(contextual) community, youth development and leadership subscale, Q36-Q42	189	1.57	5.00	3.8330	.80547
(personal) perserverance, undecided subscale, Q43-Q46	183	.25	5.00	2.3607	1.15834
(personal) perserverance, resilience self-management subscale, Q47-Q58	172	1.83	5.00	3.8847	.73046
(personal) motivation, use of Resources subscale, Q59-Q63	172	2.00	5.00	3.7814	.70263
(personal) motivation, Goal Setting and Pursuits Subscale, Q64-Q73	172	1.40	5.00	3.8413	.79449
(personal) grit subscale, Q74-Q84	170	2.00	5.00	3.7321	.58677
dummy variable fore sex	199	0	1	.23	.423
dummy variable for AGI	199	0	1	.15	.354
dummy variable for Race	199	0	1	.60	.491
Valid N (listwise)	170				

BL 2015 Student Survey

Multiple Regression Analysis

To re-summarize, the purpose of this investigation was to review the extant literature on this topic so that we can articulate a model of best practices and then survey

attendees of an effective collegiate intervention program to understand how they prioritize the usefulness of these best practices. Some high potential, but low-income students of color manage to get noticed and accepted by selective colleges, and the purpose of this correlation analysis survey study is to understand how doors are opened for some and how we could work toward putting resources and policies in place that would open doors for others.

This quantitative study provided a closer examination of the personal factors, including resilience, motivation, and engagement, that affect the collegiate admission outcomes of high potential low-income students of color.

The identified Measures were:

- Outcome measure – Selective or non-selective college admittance
- Independent variable – Personal, Contextual, Social Stratification Measures

Model Query: Data Analytic Technique

In order to answer the research questions, a Simple Linear Regression model, y=b0 +b1x+e, was analyzed in an effort to predict a continuous dependent variable y from an independent variable x.

The Logistic Regression equation is as follows:

$Logit(Y) = \ln [Pi/(1- Pi)] = \beta 0 + \beta 1X1 +...+ \beta nXn$ $Logit(Y) = \ln [Odds)] = \beta 0 + \beta 1X1 +...+ \beta nXn$

Logit(Y) =Predicted value of dependent variable

ln Pi (1-Pi) Pi/(1-Pi) =Odds of experiencing an event

= Natural log =Probability of experiencing an event =Probability of not experiencing an event

β0 β1 Xn = Intercept =Regression coefficient

(Logit coefficient) =Independent (or explanatory) variable

Logistic Distribution- S Curve

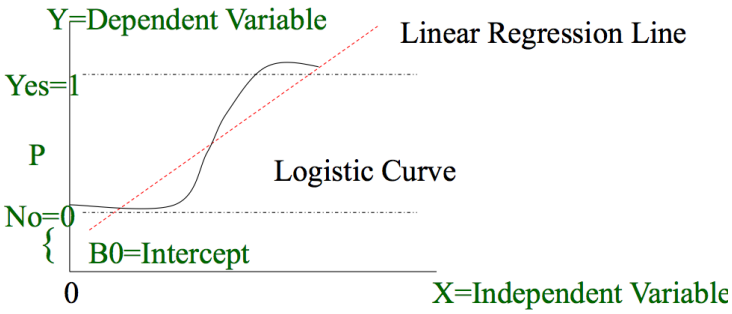


Fig. Logistic Curve for a Dichotomous Dependent Variable

Source: Menard, 1995. Applied Logistic Regression Analysis

Log Odds Ratio

$$\ln\left(\frac{p}{1-p}\right)=\beta_0+\beta_1 x$$

Odds Ratio

$$\frac{p}{1-p}=e^{\beta_0+\beta_1 x}$$

Intercept= Value of dependent variable when the value of X=0

Slope or Logit Coefficient = The amount of change in Y (logged odds of Y) for each unit change in X

Also interpreted as odds ratio

X= an independent variable (predicted value Y depends on the value of X)

Probabilities, Odds, and Log Odds (Logit)		
Probability (Pi)	**Odds (Pi/(1-Pi))**	**Logit=Log odds= ln(Pi/(1-Pi))**
0.999	**999.0**	**+6.9**
0.5	**1.0**	**0**
0.001	**.001001**	**-6.9**

Analysis: The individual variables were analyzed separately and aggregately. The critical outcomes are noted below in Table 21.

a. Model Coefficient Relationship

Table 21: Bottom Line Surveyed Spearman Rho Correlation

	Student who got admitted from selective school	Highest SAT	(personal) meaning of school	(personal) enjoying school	(personal) perseverance, undecided	(personal) resilience self-management	(personal) use of resources	(personal) goal setting and pursuits	(personal) grit	(contextual) peer	(contextual family involvement	(contextual) family support	(contextual) youth development and leadership	Sex	AGI	Race	BL GPA	# Office Visits
Student who got admitted from selective school	1.000	.379**	-.030	-.055	.129	-.078	-.146	.016	-.069	-.133	-.079	-.021	-.209**	.009	-.013	-.264**	.339**	.019
Sig. (2-tailed)	.	.000	.675	.450	.082	.313	.057	.830	.374	.069	.279	.772	.004	.904	.861	.000	.000	.788
N	198	180	198	188	182	171	171	171	169	188	188	188	188	198	198	198	182	198
Highest SAT	.379**	1.000	.030	.033	.006	-.028	.000	.027	-.046	.003	-.009	.065	-.016	.129	.032	-.450**	.379**	.157*
Sig. (2-tailed)	.000	.	.692	.670	.934	.730	.998	.740	.571	.967	.909	.397	.837	.084	.666	.000	.000	.035
N	180	181	181	173	167	156	156	156	155	173	173	173	173	181	181	181	166	181
(personal) meaning of school	-.030	.030	1.000	.405**	-.200**	.220**	.265**	.297**	.326**	.095	.130	.178*	.181*	.043	.152*	-.074	.065	.028
Sig. (2-tailed)	.675	.692	.	.000	.007	.004	.000	.000	.000	.195	.076	.014	.012	.549	.032	.298	.380	.690
N	198	181	199	189	183	172	172	172	170	189	189	189	189	199	199	199	183	199
(personal) enjoying school	-.055	.033	.405**	1.000	-.138	.342**	.396**	.370**	.271**	.205**	.330**	.219**	.359**	-.116	.077	.029	.067	.042
Sig. (2-tailed)	.450	.670	.000	.	.063	.000	.000	.000	.000	.005	.000	.002	.000	.113	.290	.693	.380	.567
N	188	173	189	189	183	172	172	172	170	189	189	189	189	189	189	189	173	189
(personal) perseverance, undecided	.129	.006	-.200**	-.138	1.000	-.347**	-.331**	-.328**	-.398**	-.165*	-.294**	-.341**	-.146*	.009	-.066	.025	.003	.051
Sig. (2-tailed)	.082	.934	.007	.063	.	.000	.000	.000	.000	.025	.000	.000	.049	.905	.371	.736	.967	.489
N	182	167	183	183	183	172	172	172	170	183	183	183	183	183	183	183	167	183

BL 2015 Student Survey

To determine if the variables are too closely related, we examine the Spearman Rho r coefficients; the variables are "between -1 and +1, and +1 indicates a perfect positive relationship, and 0 indicating no relationship." (Muijs, p. 125) The Spearman Rho data is illustrated above in Table 21. The data indicate that there are not independent factors that are close to 1, to indicate a perfect positive relationship.

This analysis can test whether "variables are too strongly correlated with one another….[because] it can cause problems in estimating the relationship between the dependent and predictor variables, as it becomes hard to calculate the individual contribution of each variable… and whether they are measuring the same thing." (Mugs, p. 155) These correlations reveal relationships between indicators across independent variables. They examine which indicators correlate most strongly with the other indicators and which correlate more weakly. They also provide additional clarity and insight into which variables tend to correlate closely with other variables.

b. Model Variable Consistency

To answer the question if the independent variables in the model measure the same thing, I analyzed Internal consistency reliability through reviewing the Cronbach's alpha. This is a "measure of the correlations between all the variables that make up the scale. ... If items measure the same concept they will be highly correlated with each other, but it is sensitive to the number of items used." This measurement is between 0 and 1; therefore a "Cronbach's alpha above 0.7 is acceptable for research purposes." (Mujs, p. 217) The 'meaning of school,' and 'enjoy school' scale are slightly below .7 at .643, and

.649 respectively. In Table 22, the remainder of the scales has Cronbach's Alpha above 0.7, which is deemed acceptable for research purposes.

Table 22: Bottom Line Reliability Statistics of Cronbach's Alpha

Scales	Cronbach's Alpha	N of items
Meaning of School	.643	10
Enjoy School	.649	4
Undecided	.910	4
Resilience, Self-management	.985	12
Youth development	.893	7
Use of resources	.936	5
Goal setting, pursuits	.976	10
Grit	.771	11
Community and peer	.871	4
Family involvement	.908	4
Family support	.889	8

BL 2015 Student Survey

c. Multiple regression analysis

This quantitative research took place during summer 2015. This time period allowed me to capture collegiate admission outcomes after the spring college admission notification letters had been received. The survey data from the Bottom Line application form and the Duckworth Grit and the Solberg success surveys were collected during June 2015. An informed consent form was embedded into the electronic survey form. The steps to prepare the data for the regression analysis included reviewing each student

participant and all of the colleges that either accepted or rejected each student. I then input the selectivity ratio for each college from U.S. News and World Report. I verified the results with a master's level research assistant. Each college selectivity ratio or the dependent variable was encoded as 1 for selectivity below 50 percent or 0 for selectivity above 50 percent.

Table 23: Bottom Line Model Dependent Variable Encoding

Dependent Variable Encoding

Original Value	Internal Value
non-selective school	0
selective school	1

Categorical Variables Codings

		Frequency	Parameter coding (1)
dummy variable for Race	White and Asian	66	1.000
	Black, Hispanic (Latino), and Other	88	.000
dummy variable for AGI	=<40000	128	1.000
	>40000	26	.000
dummy variable fore sex	Female	115	1.000
	Male	39	.000

BL 2015 Admit Data

Social Stratification Independent Variables

The initial analysis also included creating a code for social stratification factors, race, SES, and sex. In coding for race, sex, and income, we eliminated any missing data that did not have a fully completed personal characteristics survey.

The racial composition of this population resulted in a sample size of White and

Asian, n = 66, and the majority, Black, and Hispanic (Latino), n = 88. We previously noted the overrepresentation of whites and Asians from certain regions in selective colleges, as the literature review has discussed in length the critical presence of race within the higher educational selective college arena. Regarding gender or sex, we previously noted the larger presence of females within the higher educational realm at large.

Regarding coding for SES, as a reminder, surveyed students were predominantly lower income as SES remains a critical component in higher education admissions, because, "in addition to racial disparity, the large majority of individuals who attend the most competitive colleges continue to be from the highest socioeconomic bracket; these students represent households making more than $200,000 annually" (Karen and Dougherty, 2005) (Bial, Rodriguez, 2007, p. 20). As we evaluated contextual, social stratification, and personal factors among this student population, "contemporary debates in the Unites States and other countries have placed a strong emphasis on contextual factors in education, in particular on the relative contribution of student poverty to educational inequality and aggregate achievement (Schmidt, 2011, p. 380). As previously noted, poorer schools typically have fewer resources to prepare their students for selective college admittance.

By examining separately, the personal, contextual, and social stratification effects on our student population seeking entrance to selective colleges, the analytical results below show the impact of successful collegiate access interventions in the United States.

Regression analysis: Hierarchical

The two analyses that were conducted were hierarchical regression and model trimming (backward and forward stepwise) that were utilized to answer research question 1 and 2. The final step of the hierarchical regression model is to place all of the variables in the model, which included the Social Stratification block + Contextual factor block + Personal factor block.

Social Stratification Factors

To answer the research question if social stratification factors have an impact on selective collegiate admission for our sample population, we tested the impact of race, gender, and income on the dependent variable outcome. The first series of analysis was conducted utilizing the Coleman model.

The Beginning block that we examined in SPSS initially includes no variables in the model, which results in a 64.9% accuracy of predicting the dependent variable for gaining admittance into a selective or non-selective college (Table 24).

Table 24: Bottom Line Surveyed College Admits Classification Table[a,b]

Observed			Predicted		
			Student who got admitted from selective school		
			non-selective school	selective school	Percentage Correct
Step 0	Student who got admitted from selective school	non-selective school	0	54	0
		selective school	0	100	100.0
	Overall Percentage				64.9

BL 2015 Admit Data

The Constant is included in the model, and the cut value is .500.

We first included the independent variables in the Social Stratification block, which include Gender, Income, and Race. The three structural variables; Race, AGI (income), and sex are coded below in Table 25: Bottom Line Dependent variable encoding.

Table 25: Bottom Line Dependent variable encoding

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	154	77.4
	Missing Cases	45	22.6
	Total	199	100.0
Unselected Cases		0	.0
Total		199	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
non-selective school	0
selective school	1

Categorical Variables Codings

		Frequency	Parameter coding (1)
dummy variable for Race	White and Asian	66	1.000
	Black, Hispanic (Latino), and Other	88	.000
dummy variable for AGI	=<40000	128	1.000
	>40000	26	.000
dummy variable fore sex	Female	115	1.000
	Male	39	.000

BL 2015 Admit Data

Missing cases means that there were missing data on some of the variables included in the analysis, which was n = 45 out of 199 students.

The dependent variable is coded as 1, which represents being accepted by the selective school. The selective school selectivity rate is defined as a university, which has an acceptance rate less than .5.

Table 26: Omnibus Tests

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	4.899	3	.179
	Block	4.899	3	.179
	Model	4.899	3	.179

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	194.638[a]	.031	.043

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	.473	4	.976

BL 2015 Admit Data

In Table 26 the Omnibus Tests of Model Coefficients is used to check that the new model (with explanatory variables included) is an improvement over the baseline model. It uses chi-square tests to see if there is a significant difference between the Log-likelihoods (specifically the -2LLs) of the baseline model and the new model. If the new model has a significantly reduced -2LL compared to the baseline then it suggests that the new model is explaining more of the variance in the dependent outcome and is an

improvement. Here the chi-square is not significant (chi-square=4.899, df=3, p=.179) so our new model with social stratification variables does not depict that this is a better model. But the model does depict that it is a good fit since the Hosmer and Lameshow Test is not significant. The Hosmer and Lameshow test is used to determine the goodness of fit of the logistic regression model. It can also be viewed as a chi-square goodness of fit test for data that is grouped together. One possible reason for this result is that the chi-square is very dependent on the sample size.

Baseline Model Fit

As we examine the overall baseline model fit, we also review the Cox & Snell and Nagelkerke results; these numbers indicate modest improvement in fit over the baseline model; 0 – 0.1 would indicate poor improvement in fit, 0.1 – 0.3 modest improvement, 0.3 – 0.5 moderate improvement, and more than 0.5, strong improvement. It gives the comparison between predicted scores and the actual scores.

In Table 27 the Pseudo R-square (Negelkerke R Square) depicts that only 4% of the variance in the dependent variable outcome can be explained by social stratification variables in the model.

Table 27: Classification Table

Classification Table[a]

Observed			Predicted		
			Student who got admitted from selective school		
			non-selective school	selective school	Percentage Correct
Step 1	Student who got admitted from selective school	non-selective school	0	54	.0
		selective school	1	99	99.0
	Overall Percentage				64.3

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	gender(1)	.211	.402	.275	1	.600	1.235	.561	2.715
	family_income(1)	.203	.454	.201	1	.654	1.226	.504	2.982
	Race_D(1)	.769	.361	4.542	1	.033	2.158	1.064	4.378
	Constant	-.017	.565	.001	1	.976	.983		

a. Variable(s) entered on step 1: gender, family_income, Race_D.

In Table 27, with the inclusion of social stratification variables of gender, race, and sex in the model, the overall accuracy is correctly predicted at 64%.

When we examine the Race variable within the social stratification block separately, we find that race has a significant effect (Wald=4.542, df=1, p<.05). The b coefficients for Race are significant and positive, indicating that increasing presence of being White (less than 5%) or Asian (depicted as 1 in the Social Stratification Block) is associated with increased odds of being accepted into a selective university. The Exp (B) column (the Odds Ratio) tells us that students from majority group (White and Asian) are two (2.158) times more likely than those from a minority group to be accepted into a selective college. It is interesting that even among low-income whites, compared to Blacks and Latinos, “historical practices of racial discrimination in times of economic

wellbeing, (e.g., separate and unequal schools during the post-World War II boom) make it more difficult for members of those discriminated groups to take advantage of economic opportunities." (Coleman, 2007, p. 4)

Regarding Asians, this supports the theory of the model minority that may continue to be a positive component even with first generation Asian students. Of note, the average SAT scores for the minority groups, Latino and African-American, are lower than the Asian and White groups.

There is no significant effect of the social stratification gender and family income independent variables on the dependent selective college admittance variable.

Contextual Factors: To answer the second research question, to what extent do interventions among contextual factors modulate the selective collegiate outcome, we tested the impact of contextual factors on the selective collegiate admittance outcome. The Contextual Block variables in the model included family involvement, family support, peer effect, and youth development and leadership.

Table 28: Bottom Line Omnibus Tests of Model Coefficients

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	6.577	4	.160
	Block	6.577	4	.160
	Model	11.476	7	.119

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	188.061[a]	.072	.099

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

Classification Table[a]

			Predicted		
			Student who got admitted from selective school		
	Observed		non-selective school	selective school	Percentage Correct
Step 1	Student who got admitted from selective school	non-selective school	11	43	20.4
		selective school	12	88	88.0
	Overall Percentage				64.3

a. The cut value is .500

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	10.449	8	.235

BL 2015 Admit Data

When the contextual block is added into the model in Table 28, it is not statistically significant (chi-square=11.476, df=7, p>.05). The first and the third table

show that this model does not increase the prediction of getting admitted to a selective college. The Hosmer and Lemeshow test should be non-significant to demonstrate the model is a good fit.

In this investigation, the dependent factor of increased admittance to selective colleges is not modulated by the associated or presence of contextual intervention factors alone, and contextual factors did not help predict the outcome.

It is critical to note that when we add contextual independent variables, we have maintained our overall accuracy at 64.3% (compared to 64.3% when social stratification independent variables are entered in the model), and Race remains significant.

Table 29: Variables in the Equation

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	gender(1)	.219	.416	.277	1	.599	1.244
	family_income(1)	-.037	.472	.006	1	.938	.964
	Race_D(1)	.815	.373	4.772	1	.029	2.260
	peer	-.311	.255	1.483	1	.223	.733
	family_invol	-.100	.298	.114	1	.736	.904
	family_support	.238	.254	.876	1	.349	1.268
	youth_dev_leadership	-.477	.279	2.921	1	.087	.621
	Constant	2.815	1.542	3.333	1	.068	16.692

a. Variable(s) entered on step 1: peer, family_invol, family_support, youth_dev_leadership.

BL 2015 Admit Data

Personal Factors: To answer the question, "to what extent do relevant personal factors (independent variables) individually and collectively predict how participants in an effective pre-collegiate program get admitted into a selective university?", we tested the impact of personal factors on the outcome.

We continue to evaluate the hierarchical regression model to analyze the effects of the personal independent variables in the model. The Personal block or independent variables consist of: SAT, meaning of school, enjoy the school, use of resources, grit, goal setting, self-management and so on.

Table 30: Omnibus Tests of Model Coefficients

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	27.334	8	.001
	Block	27.334	8	.001
	Model	38.810	15	.001

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	160.727[a]	.223	.307

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Classification Table[a]

			Predicted		
			Student who got admitted from selective school		
	Observed		non-selective school	selective school	Percentage Correct
Step 1	Student who got admitted from selective school	non-selective school	29	25	53.7
		selective school	11	89	89.0
	Overall Percentage				76.6

a. The cut value is .500

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	9.131	8	.331

BL 2015 Admit Data

When we compared this model to the social stratification and contextual blocks, we determined that the personal block provides a statistically significant improvement p < .001 (Table 30). The Hosmer and Lemeshow test should also be nonsignificant (.331) to demonstrate a good model fit.

The Personal factor blocks are deemed to be very important, because when we review the explanation of the variance of the Y (Pseudo R square increase), we see approximately 30% of the variance in Y is explained by the personal block.

In Table 30, the addition of the personal block collectively predicts a 76.6 % correct prediction, compared to a 64.3% accuracy with just the structural and contextual block, which is a 12.3%-point increase.

With the addition of Contextual and Personal Independent factors into the model, the variables of "youth development and leadership" have a significant effect (Wald=4.712, df=1, p<0.05 respectively), when other variables are being controlled.

Youth development and leadership subscale

Questions 36–42

III. Contextual

A. Family: Support

- (Youth Development and Leadership Subscale)
- I have a **mentor** (an adult at school, through school-related activities, or activities outside of school).
- I have a **peer-mentor** or have been a peer mentor to another student (at school, through school-related activities, or activities outside of school).
- I am exposed to different types of **role models** through my school, school-related activities, or activities outside of school.

- I have learned about or know how to speak up for myself.
- I participate in **extra-curricular school-related activities** (like sports, band, community service, or school clubs).
- I participate in activities outside of school (like church youth group, 4-H, or Boys and Girls Club).
- I participate in opportunities that help me develop my leadership skills.

As we examine the specific types of youth development, we see that students who scored higher on this scale are very active. They are involved in numerous extracurricular activities in and outside school, are peer mentors, and have exposure to numerous types of mentors. But, the reality is all types of youth development activities are not equal.

The same way that prep schools give you a head start in teaching you how to work, develop, and organize work, school, and home priorities, a mentor can also be that critical assist, and conversely incorrect advice from the wrong peers can be detrimental. I argue that students who leaned heavily on their BL counselors – and not close family or non-college educated family members – were more successful in selective college admittance. Their social capital shortcomings have to be filled by the correct individuals in the right amount since, "individual children at risk have proved particularly vulnerable to social-capital deficits. More hopefully, precisely such children are most susceptible to the positive benefits of social connectedness, if it can be provided." (Putnam, p. 299)

Social capital may be most crucial for families who have fewer financial and educational resources. Individuals who are too involved in youth development may have their mentors and counselors too widely dispersed among a variety of organizations. I

argue that Bottom Line provides a critical line of social support for their low-income constituency who often may lack strong family ties or role models. Bottom Line can become a surrogate family with surrogate "older brothers and sisters" (their counselors), who have successfully traversed the selective college landscape.

This value on community support has had prior critical incidence in select immigrant families.

Table 31: Variables in the Equation

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	gender(1)	.565	.480	1.384	1	.239	1.759
	family_income(1)	.338	.556	.369	1	.544	1.402
	Race_D(1)	.248	.452	.301	1	.583	1.282
	peer	-.301	.286	1.107	1	.293	.740
	family_invol	.097	.340	.082	1	.774	1.102
	family_support	.331	.318	1.085	1	.298	1.393
	youth_dev_leadership	-.865	.399	4.712	1	.030	.421
	HighestSAT	.004	.001	15.698	1	.000	1.004
	meaningofschool	-.261	.517	.254	1	.614	.771
	enjoy_school	.075	.320	.055	1	.814	1.078
	perserv_undecided	.137	.214	.410	1	.522	1.147
	perserv_resili_selfmanag	.871	.463	3.529	1	.060	2.388
	useresourse	-1.265	.496	6.510	1	.011	.282
	goalsetting	.351	.397	.785	1	.376	1.421
	grit	.295	.439	.450	1	.502	1.343
	Constant	-3.189	2.920	1.193	1	.275	.041

a. Variable(s) entered on step 1: HighestSAT, meaningofschool, enjoy_school, perserv_undecided, perserv_resili_selfmanag, useresourse, goalsetting, grit.

BL 2015 Admit Data

A. SAT – Personal Independent Variable: As we examine the individual predictive values of the independent variables in the Personal block, the model in Table

31 shows that the SAT and Use of Resource variables has a significant effect (Wald=15.698, df=1, p<.000 and Wald=6.510, df=1, p<0.05 respectively), when other variables are being controlled. For example, when other variables are being controlled, someone who has a higher SAT is 1.004 times more likely to be accepted by a selective university than a student who has lower SAT score.

Historically, SAT scores, along with a strong college application, have been utilized as a primary indicator of success for admittance to a selective college. Perna (2002) suggests crucial elements that foster college attendance include “college awareness and exposure, promoting academic skills, parent college awareness, parent assistance with financial aid forms and in student activities, SAT/ACT training and tuition reimbursement." (Cates, 2011, p. 324).

Participating students in the program have gained increased college awareness and exposure, gotten assistance with financial aids and forms, and have taken the necessary steps to have competitive SAT scores, which together improve their odds of entrance into selective colleges. Interestingly, regarding the importance of test scores in the admissions process, Sternberg argues that “test scores are correlated highly, although not perfectly, with social class” (Sternberg, 2010, p. 7). [xiv] Students electing to participate in this successful intervention college admissions program are overcoming the limitations of traditional sub-par SAT scores of lower-income students to achieve in all areas of their college admissions application.

B. Use of resources – Personal Independent variable: However, the Use of Resources independent variable has a negative effect on the selective dependent variable. A student who is seeking to use the resources more is actually one third less likely to get into the selective school.

The Personal Use of Resources subscale (Questions 59 – 63 Personal: Motivation)

A. Use of Resources subscale

- To reach my goals, I actively seek out **support and guidance from others.**
- I try and get the most I can from every learning opportunity.
- I have a number of plans for after high school to fall back on if the one I prefer doesn't work out (for example in my life, school, career).
- My **family** plays an important role in helping me plan for my life after high school (for example in my life, school, career).
- My **school** provides me with support in planning for my life after high school (for example in my life, school, career).

Use of resources has a significant negative correlation relationship (significance of .1) with the independent variable, entrance into a selective college. Some of the key areas addressed in this subscale include reaching out to family and their school for support and guidance. At first glance, this may seem like a positive factor, but Bottom Line specifically provides personalized collegiate access counseling. These are students who are often in low resource schools with guidance counselors who often serve hundreds of high school students, and may be rushed and harried in their collegiate advice.

In addition, since the program specifically screens for first generation students, we assume that most of their parents are not college educated. Thus, the advice they are

receiving may be skewing them away from even applying to more selective schools, which may be located further away or be perceived to have a higher out-of-pocket cost. In addition, students who skewed higher on having a number of fallback plans after high school may have higher doubt in their abilities to access a selective college and therefore self-select out of applying.

It appears that the students who have made the most of this learning opportunity and have been admitted to a selective four-year college were able to disassociate from their family of origin's life planning advice and realize the limitation of their school counseling processes, leaning on the Bottom Line guidance more heavily.

D. Number of Programs (Extracurricular): I examined a frequency analysis to answer the question: Does the Number of Programs attended outside of the contextual collegiate access program effect the dependent variable, selective college admittance? The frequency analysis shows that as we examined n = 179 students, the mean of program participation was 1.17 and the median was 1.00. Furthermore, the minimum amount of program participation was 0 and the maximum was 7.

Table 32: Number BLCP

Frequencies

Statistics

Number_BLCP

N	Valid	179
	Missing	20
Mean		1.17
Median		1.00
Std. Deviation		1.160
Minimum		0
Maximum		7

Number_BLCP

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	57	28.6	31.8	31.8
	1	67	33.7	37.4	69.3
	2	33	16.6	18.4	87.7
	3	14	7.0	7.8	95.5
	4	7	3.5	3.9	99.4
	7	1	.5	.6	100.0
	Total	179	89.9	100.0	
Missing	System	20	10.1		
Total		199	100.0		

Correlations

		Number_BLCP	Student who got admitted from selective school
Number_BLCP	Pearson Correlation	1	-.210**
	Sig. (2-tailed)		.005
	N	179	178
Student who got admitted from selective school	Pearson Correlation	-.210**	1
	Sig. (2-tailed)	.005	
	N	178	198

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

BL 2014 Application data

The Correlation matrix with the dependent outcome variable depicts a Negative correlation if Number of BLCP is in the model (Hierarchical regression): Structure + Personal + Contextual + BLCP.

Table 33: Omnibus Tests of Model Coefficients

Block 4: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	5.299	1	.021
	Block	5.299	1	.021
	Model	45.347	16	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	150.367[a]	.259	.357

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Table 34: Classification Table

Classification Table[a]

Observed			Predicted		
			Student who got admitted from selective school		
			non-selective school	selective school	Percentage Correct
Step 1	Student who got admitted from selective school	non-selective school	31	22	58.5
		selective school	14	84	85.7
	Overall Percentage				76.2

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	gender(1)	.490	.503	.949	1	.330	1.632
	family_income(1)	.070	.585	.014	1	.905	1.072
	Race_D(1)	.224	.472	.225	1	.635	1.251
	HighestSAT	.004	.001	17.199	1	.000	1.004
	meaningofschool	-.472	.538	.768	1	.381	.624
	enjoy_school	.165	.335	.242	1	.622	1.179
	perserv_undecided	.179	.226	.631	1	.427	1.196
	perserv_resili_selfmanag	.651	.487	1.785	1	.182	1.918
	useresourse	-1.238	.499	6.148	1	.013	.290
	goalsetting	.362	.415	.760	1	.383	1.436
	grit	.443	.461	.922	1	.337	1.557
	peer	-.203	.296	.470	1	.493	.816
	family_invol	.075	.356	.044	1	.834	1.077
	family_support	.265	.333	.632	1	.427	1.303
	youth_dev_leadership	-.828	.416	3.958	1	.047	.437
	Number_BLCP	-.391	.175	4.970	1	.026	.677
	Constant	-2.504	3.023	.686	1	.407	.082

a. Variable(s) entered on step 1: Number_BLCP.

BL 2015 Survey Data

In Table 34, the number of students participating in the BLCP program (extracurricular) does have a significant effect (Wald=4.970, df=1, $p<.05$), when other variables are being controlled. When other variables are being controlled, someone who participated in a greater number of extracurricular activities has a worse chance of being accepted by a selective university, specifically almost a half (-.391) less likely than the student who participates in fewer activities.

To further analyze the impact on extracurricular activities on selective college outcome, a Manova was conducted to examine the interaction of BCLP activities, race, and selective college admittance. The finding was that the intersection of BCLP and the Use of Resources to students who were admitted to a selective college were not further impacted by the presence of race.

Table 35: MANOVA

Between-Subjects Factors

		Value Label	N
dummy variable for Race	0	White and Asian	67
	1	Black, Hispanic (Latino), and Other	104

Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.972	1957.111[b]	3.000	167.000	.000
	Wilks' Lambda	.028	1957.111[b]	3.000	167.000	.000
	Hotelling's Trace	35.158	1957.111[b]	3.000	167.000	.000
	Roy's Largest Root	35.158	1957.111[b]	3.000	167.000	.000
Race_D	Pillai's Trace	.038	2.180[b]	3.000	167.000	.092
	Wilks' Lambda	.962	2.180[b]	3.000	167.000	.092
	Hotelling's Trace	.039	2.180[b]	3.000	167.000	.092
	Roy's Largest Root	.039	2.180[b]	3.000	167.000	.092

a. Design: Intercept + Race_D

b. Exact statistic

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	BLCP	.054[a]	1	.054	.038	.845
	(personal) motivation, use of Resources subscale, Q59-Q63	.084[b]	1	.084	.169	.682
	Student who got admitted from selective school	1.369[c]	1	1.369	5.942	.016
Intercept	BLCP	189.387	1	189.387	134.031	.000
	(personal) motivation, use of Resources subscale, Q59-Q63	2336.582	1	2336.582	4682.264	.000

Multivariate Tests

The Multivariate Tests table is where we find the actual result of the one-way MANOVA. In Table 35, you need to look at the second Effect, labeled "**Race**", and the Wilks' Lambda row (highlighted in red). To determine whether the one-way MANOVA was statistically significant you need to look at the "**Sig.**" column. We can see from the table that we have a "**Sig.**" value of .092, which means $p > .0005$. Therefore, we can conclude that BLCP, and the Use of Resources subscale is not significantly dependent on race ($p < .0005$).

There was not a statistically significant difference in BCLP and Use of Resources subscale based on race, F (3.0, 167.0) = 2.18, $p < .0005$; Wilk's $\Lambda = 0.962$. (https://statistics.laerd.com/spss-tutorials/one-way-manova-using-spss-statistics-2.php)

Table 36: MANOVA

	dummy variable for Race	N	Mean	Std. Deviation	Std. Error Mean
Highest SAT	Black, Hispanic (Latino), and Other	103	1322.62	230.706	22.732
	White and Asian	78	1574.49	270.126	30.586
(contextual) community, youth development and leadership subscale, Q36-Q42	Black, Hispanic (Latino), and Other	115	3.8571	.80613	.07517
	White and Asian	74	3.7954	.80850	.09399
(personal) motivation, use of Resources subscale, Q59-Q63	Black, Hispanic (Latino), and Other	105	3.7638	.70262	.06857
	White and Asian	67	3.8090	.70705	.08638
(personal) perserverance, resilience self-management subscale, Q47-Q58	Black, Hispanic (Latino), and Other	105	3.8579	.72131	.07039
	White and Asian	67	3.9266	.74811	.09140

In summary, when other variables are being controlled, a student with a higher SAT score has a better chance of being accepted by a selective university; specifically, they are 1.004 times more likely to be accepted than the one who has a lower SAT score. However, Use of Resource has a negative effect on the dependent variable, and these students are one third less likely to get into a selective college. In addition, surveyed students who are participating in more youth and leadership related activity are also almost half as likely (0.391) to get into the selective school.

The model's logit regression is as follows:

$\log (p/1-p) = \text{logit}(p) = b_0 + b_1*x_1 + b_2*x_2 + b_3*x_3 + b_4*x_4 + b_5*x_5 + \ldots + b_{15}*x_{15}$

log(p/1-p) = logit (p) = -3.189 + .565*gender(1)+.338 * family income(1) + 0.248 * race(1) + .004 * HighestSAT - .261 * meaning of school + .075 * enjoy school + .137 * perseverance + .871 * self-management - 1.265 * use of resource + .351 * goal-setting + .295 * grit - .301 * peer + .097 * family involvement + .331 * family support - .865 * youth development

Backward Stepwise Model: The second analysis trimmed the model utilizing a backward stepwise regression to determine the most efficient way or best predictors to explain this model.

This analysis puts all of the independent variables in the model and then removes the variables one by one based on the lowest p value.

Table 37: Block 1: Method = Backward Stepwise (Likelihood Ratio)

Omnibus Tests of Model Coefficients

		Chi-square	Df	Sig.
Step 1	Step	38.810	15	.001
	Block	38.810	15	.001
	Model	38.810	15	.001
Step 2[a]	Step	-.055	1	.814
	Block	38.755	14	.000
	Model	38.755	14	.000
Step 3[a]	Step	-.098	1	.755
	Block	38.657	13	.000
	Model	38.657	13	.000
Step 4[a]	Step	-.217	1	.642
	Block	38.440	12	.000
	Model	38.440	12	.000
Step 5[a]	Step	-.250	1	.617
	Block	38.191	11	.000
	Model	38.191	11	.000
Step 6[a]	Step	-.413	1	.521
	Block	37.778	10	.000
	Model	37.778	10	.000
Step 7[a]	Step	-.338	1	.561
	Block	37.440	9	.000
	Model	37.440	9	.000
Step 8[a]	Step	-.550	1	.458
	Block	36.889	8	.000
	Model	36.889	8	.000
Step 9[a]	Step	-1.021	1	.312
	Block	35.869	7	.000
	Model	35.869	7	.000

Step 10[a]	Step	-.748	1	.387
	Block	35.121	6	.000
	Model	35.121	6	.000
Step 11[a]	Step	-1.401	1	.237
	Block	33.719	5	.000
	Model	33.719	5	.000
Step 12[a]	Step	-1.663	1	.197
	Block	32.056	4	.000
	Model	32.056	4	.000

A negative Chi-squares value indicates that the Chi-squares value has decreased from the previous step.

BL 2015 Admit Data

[5] Likelihood Ratio: Stepwise selection method with entry testing based on the significance of the score statistic, and removal testing based on the probability of a likelihood-ratio statistic based on the maximum partial likelihood estimates (include criteria: 0.05, exclude criteria :0.10).

Table 38: Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	160.727[a]	.223	.307
2	160.782[a]	.222	.306
3	160.880[a]	.222	.306
4	161.097[a]	.221	.304
5	161.346[a]	.220	.302
6	161.759[a]	.218	.300
7	162.097[a]	.216	.297
8	162.648[a]	.213	.293
9	163.668[a]	.208	.286
10	164.417[a]	.204	.281
11	165.818[a]	.197	.271
12	167.481[a]	.188	.259

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

BL 2015 Admit Data

Table 39: Hosmer and Lemeshow Test

Step	Chi-square	Df	Sig.
1	9.131	8	.331
2	7.102	8	.526
3	8.161	8	.418
4	6.828	8	.555
5	8.663	8	.372
6	7.251	8	.510
7	8.645	8	.373
8	8.286	8	.406
9	8.726	8	.366
10	7.647	8	.469
11	12.216	8	.142
12	8.329	8	.402

BL 2015 Admit Data

Table 40: Classification Table[a]

Observed			Predicted		
			Student who got admitted from selective school		
			non-selective school	selective school	Percentage Correct
Step 1	Student who got admitted from selective school	non-selective school	29	25	53.7
		selective school	11	89	89.0
	Overall Percentage				76.6
Step 2	Student who got admitted from selective school	non-selective school	29	25	53.7
		selective school	11	89	89.0
	Overall Percentage				76.6

Step 3	Student who got admitted from selective school	non-selective school	29	25	53.7
		selective school	11	89	89.0
	Overall Percentage				76.6
Step 4	Student who got admitted from selective school	non-selective school	30	24	55.6
		selective school	14	86	86.0
	Overall Percentage				75.3
Step 5	Student who got admitted from selective school	non-selective school	31	23	57.4
		selective school	11	89	89.0
	Overall Percentage				77.9
Step 6	Student who got admitted from selective school	non-selective school	30	24	55.6
		selective school	11	89	89.0
	Overall Percentage				77.3
Step 7	Student who got admitted from selective school	non-selective school	30	24	55.6
		selective school	10	90	90.0
	Overall Percentage				77.9
Step 8	Student who got admitted from selective school	non-selective school	30	24	55.6
		selective school	10	90	90.0
	Overall Percentage				77.9
Step 9	Student who got admitted from selective school	non-selective school	28	26	51.9
		selective school	12	88	88.0
	Overall Percentage				75.3
Step 10	Student who got admitted from selective school	non-selective school	27	27	50.0
		selective school	15	85	85.0
	Overall Percentage				72.7
Step 11	Student who got admitted from selective school	non-selective school	30	24	55.6
		selective school	14	86	86.0
	Overall Percentage				75.3
Step 12	Student who got admitted from selective school	non-selective school	27	27	50.0
		selective school	13	87	87.0
	Overall Percentage				74.0

a. The cut value is .500

BL 2015 Admit Data

Table 40 depicts that when there were 15 variables in the model the prediction accuracy was 76%, and when there were 4 variables left in the model it was 74%. This shows that there is not a large difference, which indicates this can be an efficient way to explain the model.

Table 41: Variables in the Equation

								95% C.I.for EXP(B)	
		B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Step 1[a]	Meaningofschool	-.261	.517	.254	1	.614	.771	.280	2.123
	enjoy_school	.075	.320	.055	1	.814	1.078	.576	2.019
	Peer	-.301	.286	1.107	1	.293	.740	.422	1.297
	family_invol	.097	.340	.082	1	.774	1.102	.566	2.146
	family_support	.331	.318	1.085	1	.298	1.393	.747	2.599
	youth_dev_leadership	-.865	.399	4.712	1	.030	.421	.193	.919
	perserv_undecided	.137	.214	.410	1	.522	1.147	.754	1.743
	perserv_resili_selfmanag	.871	.463	3.529	1	.060	2.388	.963	5.923
	Useresourse	-1.265	.496	6.510	1	.011	.282	.107	.746
	Goalsetting	.351	.397	.785	1	.376	1.421	.653	3.093
	Grit	.295	.439	.450	1	.502	1.343	.568	3.176
	gender(1)	.565	.480	1.384	1	.239	1.759	.687	4.504
	family_income(1)	.338	.556	.369	1	.544	1.402	.471	4.171
	Race_D(1)	.248	.452	.301	1	.583	1.282	.529	3.107
	HighestSAT	.004	.001	15.698	1	.000	1.004	1.002	1.006
	Constant	-3.189	2.920	1.193	1	.275	.041		
Step 2[a]	Meaningofschool	-.215	.479	.201	1	.654	.807	.315	2.064
	Peer	-.297	.285	1.083	1	.298	.743	.425	1.300
	family_invol	.106	.338	.098	1	.755	1.111	.573	2.155
	family_support	.330	.318	1.074	1	.300	1.391	.745	2.597
	youth_dev_leadership	-.861	.399	4.666	1	.031	.423	.194	.923
	perserv_undecided	.137	.214	.410	1	.522	1.147	.754	1.744

	perserv_resili_self manag	.864	.463	3.494	1	.062	2.374	.959	5.877
	Useresourse	-1.249	.491	6.471	1	.011	.287	.109	.751
	Goalsetting	.361	.395	.836	1	.361	1.435	.662	3.110
	Grit	.295	.439	.453	1	.501	1.344	.569	3.175
	gender(1)	.572	.479	1.426	1	.232	1.772	.693	4.529
	family_income(1)	.343	.557	.379	1	.538	1.409	.473	4.195
	Race_D(1)	.231	.446	.268	1	.605	1.260	.526	3.020
	HighestSAT	.004	.001	15.842	1	.000	1.004	1.002	1.006
	Constant	-3.256	2.910	1.252	1	.263	.039		
Step 3[a]	Meaningofschool	-.223	.478	.217	1	.642	.800	.314	2.043
	Peer	-.269	.271	.988	1	.320	.764	.450	1.299
	family_support	.365	.299	1.495	1	.222	1.440	.802	2.586
	youth_dev_leadership	-.825	.380	4.700	1	.030	.438	.208	.924
	perserv_undecided	.129	.212	.369	1	.543	1.137	.751	1.722
	perserv_resili_self manag	.849	.459	3.414	1	.065	2.337	.950	5.751
	Useresourse	-1.234	.488	6.393	1	.011	.291	.112	.758
	Goalsetting	.353	.392	.809	1	.368	1.423	.660	3.071
	Grit	.285	.436	.429	1	.513	1.330	.566	3.124
	gender(1)	.585	.478	1.498	1	.221	1.794	.704	4.575
	family_income(1)	.352	.555	.402	1	.526	1.421	.479	4.214
	Race_D(1)	.238	.445	.285	1	.594	1.268	.530	3.035
	HighestSAT	.004	.001	15.821	1	.000	1.004	1.002	1.006
	Constant	-3.093	2.863	1.167	1	.280	.045		
Step 4[a]	Peer	-.255	.269	.898	1	.343	.775	.458	1.313
	family_support	.362	.298	1.473	1	.225	1.436	.800	2.578
	youth_dev_leadership	-.842	.379	4.941	1	.026	.431	.205	.905
	perserv_undecided	.144	.209	.478	1	.490	1.155	.767	1.739
	perserv_resili_self manag	.866	.459	3.565	1	.059	2.377	.968	5.839
	Useresourse	-1.261	.484	6.770	1	.009	.284	.110	.733
	Goalsetting	.344	.394	.766	1	.381	1.411	.653	3.052
	Grit	.256	.430	.356	1	.551	1.292	.557	3.000
	gender(1)	.611	.475	1.650	1	.199	1.841	.725	4.674
	family_income(1)	.378	.553	.466	1	.495	1.459	.493	4.313
	Race_D(1)	.222	.445	.250	1	.617	1.249	.522	2.985
	HighestSAT	.004	.001	15.793	1	.000	1.004	1.002	1.006
	Constant	-3.767	2.490	2.290	1	.130	.023		
Step 5[a]	Peer	-.244	.267	.840	1	.359	.783	.464	1.321

	family_support	.329	.290	1.286	1	.257	1.389	.787	2.452
	youth_dev_leadership	-.869	.375	5.373	1	.020	.419	.201	.874
	perserv_undecided	.149	.208	.513	1	.474	1.161	.772	1.747
	perserv_resili_self manag	.861	.456	3.566	1	.059	2.366	.968	5.782
	Useresourse	-1.243	.483	6.610	1	.010	.289	.112	.744
	Goalsetting	.370	.392	.894	1	.344	1.448	.672	3.121
	Grit	.274	.427	.412	1	.521	1.316	.570	3.038
	gender(1)	.587	.473	1.538	1	.215	1.799	.711	4.547
	family_income(1)	.382	.554	.477	1	.490	1.466	.495	4.341
	HighestSAT	.004	.001	18.923	1	.000	1.004	1.002	1.006
	Constant	-3.912	2.461	2.527	1	.112	.020		
Step 6[a]	Peer	-.226	.264	.734	1	.392	.798	.476	1.338
	family_support	.327	.289	1.282	1	.258	1.386	.787	2.441
	youth_dev_leadership	-.817	.365	5.007	1	.025	.442	.216	.904
	perserv_undecided	.116	.200	.335	1	.563	1.123	.758	1.663
	perserv_resili_self manag	.870	.455	3.664	1	.056	2.388	.979	5.821
	Useresourse	-1.257	.481	6.819	1	.009	.285	.111	.731
	Goalsetting	.443	.374	1.402	1	.236	1.558	.748	3.244
	gender(1)	.594	.473	1.580	1	.209	1.811	.717	4.574
	family_income(1)	.397	.551	.519	1	.471	1.487	.505	4.380
	HighestSAT	.004	.001	18.651	1	.000	1.004	1.002	1.006
	Constant	-3.304	2.254	2.148	1	.143	.037		
Step 7[a]	Peer	-.228	.265	.740	1	.390	.796	.474	1.338
	family_support	.306	.287	1.139	1	.286	1.358	.774	2.384
	youth_dev_leadership	-.783	.360	4.738	1	.030	.457	.226	.925
	perserv_resili_self manag	.849	.453	3.509	1	.061	2.337	.961	5.680
	Useresourse	-1.284	.481	7.112	1	.008	.277	.108	.711
	Goalsetting	.412	.368	1.254	1	.263	1.510	.734	3.104
	gender(1)	.584	.472	1.532	1	.216	1.793	.711	4.519
	family_income(1)	.410	.551	.554	1	.457	1.507	.512	4.437
	HighestSAT	.004	.001	18.484	1	.000	1.004	1.002	1.006
	Constant	-2.712	2.014	1.813	1	.178	.066		
Step 8[a]	Peer	-.260	.260	.998	1	.318	.771	.463	1.284
	family_support	.312	.285	1.199	1	.274	1.366	.782	2.386
	youth_dev_leadership	-.784	.359	4.769	1	.029	.457	.226	.923

	perserv_resili_self manag	.781	.441	3.131	1	.077	2.183	.919	5.185
	Useresourse	-1.235	.471	6.877	1	.009	.291	.116	.732
	Goalsetting	.413	.369	1.249	1	.264	1.511	.733	3.117
	gender(1)	.530	.466	1.293	1	.255	1.698	.682	4.231
	HighestSAT	.004	.001	18.026	1	.000	1.004	1.002	1.006
	Constant	-2.072	1.810	1.310	1	.252	.126		
Step 9[a]	family_support	.236	.272	.751	1	.386	1.266	.742	2.160
	youth_dev_leadership	-.805	.356	5.108	1	.024	.447	.222	.899
	perserv_resili_self manag	.747	.442	2.860	1	.091	2.111	.888	5.017
	Useresourse	-1.258	.468	7.229	1	.007	.284	.114	.711
	Goalsetting	.425	.368	1.336	1	.248	1.530	.744	3.145
	gender(1)	.582	.464	1.578	1	.209	1.790	.722	4.442
	HighestSAT	.004	.001	18.089	1	.000	1.004	1.002	1.006
	Constant	-2.605	1.714	2.310	1	.129	.074		
Step 10[a]	youth_dev_leadership	-.801	.355	5.087	1	.024	.449	.224	.900
	perserv_resili_self manag	.729	.442	2.724	1	.099	2.074	.872	4.930
	Useresourse	-1.099	.425	6.692	1	.010	.333	.145	.766
	Goalsetting	.459	.363	1.598	1	.206	1.583	.777	3.225
	gender(1)	.547	.462	1.401	1	.237	1.728	.699	4.273
	HighestSAT	.004	.001	18.035	1	.000	1.004	1.002	1.006
	Constant	-2.284	1.671	1.868	1	.172	.102		
Step 11[a]	youth_dev_leadership	-.800	.354	5.113	1	.024	.449	.225	.899
	perserv_resili_self manag	.752	.443	2.890	1	.089	2.122	.891	5.051
	Useresourse	-1.052	.420	6.262	1	.012	.349	.153	.796
	Goalsetting	.458	.357	1.644	1	.200	1.580	.785	3.181
	HighestSAT	.004	.001	17.480	1	.000	1.004	1.002	1.005
	Constant	-1.879	1.628	1.333	1	.248	.153		
Step 12[a]	youth_dev_leadership	-.752	.351	4.600	1	.032	.471	.237	.937
	perserv_resili_self manag	.961	.413	5.422	1	.020	2.615	1.164	5.873
	Useresourse	-.906	.397	5.204	1	.023	.404	.186	.880
	HighestSAT	.004	.001	17.475	1	.000	1.004	1.002	1.005
	Constant	-1.635	1.614	1.025	1	.311	.195		

a. Variable(s) entered on step 1: meaningofschool, enjoy_school, peer, family_invol, family_support, youth_dev_leadership, perserv_undecided, perserv_resili_selfmanag, useresourse, goalsetting, grit, gender, family_income, Race_D, HighestSAT.

BL 2015 Admit Data

The backward regression model reveals that the independent variables: SAT, Use of Resources, perseverance – resilience – self-management, and youth-development remained in the final model as the best model predictors. The equation is below:

a. Logit (p) = -1.635 + 0.004(HighestSAT) - .752 * youth development + .961 * (self-management) - .906(useresource)

Forward Regression Model: The results of the forward regression model (Table 42) consistent with the significant results of the backward regression model. (See Table 39, Table 40, and Table 41.)

Table 42: Omnibus Tests of Model Coefficients

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	32.521	4	.000
	Block	32.521	4	.000
	Model	32.521	4	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	167.876[a]	.189	.261

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Classification Table[a]

			Predicted		
			Student who got admitted from selective school		
	Observed		non-selective school	selective school	Percentage Correct
Step 1	Student who got admitted from selective school	non-selective school	28	26	51.9
		selective school	13	88	87.1
	Overall Percentage				74.8

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	youth_dev_leadership	-.764	.351	4.735	1	.030	.466
	perserv_resili_selfmanag	.965	.414	5.434	1	.020	2.625
	useresourse	-.929	.396	5.512	1	.019	.395
	HighestSAT	.004	.001	17.405	1	.000	1.004
	Constant	-1.506	1.592	.895	1	.344	.222

The backward and forward regression model yields a new personal independent variable which is perseverance – resilience – self management.

Perseverance Scale

Personal: Resilience (47 – 58)

Resilience**:** Perseverance (Self management subscale)

- (I can) Describe my skills and abilities to a college admissions officer.
- (I can) Dress in a way that will help me to be successful during a college admissions interview.
- Achieve a satisfying career.
- Identify and examine your personal skills and abilities.
- Know how to interact with your professors in order to better your college career.
- Think about what the college requires you to do and the quality of the school environment during a college interview.
- Prepare for an admissions interview.
- Plan and carry out your career goals.
- Learn about different college opportunities before searching for a college.
- Deal effectively with personal challenges (for example, lack of confidence, ability).
- Develop questions to ask admission officers about the college.
- Understand how your skills can be effectively used in a variety of admission college interviews.

The factors in the self-management subscale are directly related to the student's perceived ability to manage the college admissions process in several areas, including how to conduct oneself in a college interview (asking pertinent questions and communicating their unique skills, knowing how to dress, etc.), how to prepare for the collegiate interview overall, and how to research general college opportunities. It is clear

that being immersed in a college admissions preparatory process along with hundreds of other similar achieving students has increased the confidence and effectiveness of this program student sample.

One scholar observes that this suggests that the previously noted role of perseverance as "the great equalizer may well be a myth and the reality is better characterized" as a driving variable in the midst of higher SES status" (Schmidt, 2011, p. 379). An individual in the upper class may well benefit from a stronger internal push to persevere against the odds. The scale of perseverance/ self-management/ resilience amongst our sample may be characterized as wholesale perseverance, but a closer look reveals that the students have achieved perseverance in a particular area – the ability to successfully navigate the collegiate admissions process, which is the very area that Bottom Line has targeted. It is therefore not accurate to suggest that a generalized sense of perseverance is the internal global personal factor and driver for success among this particular subgroup. For example, student Rebecca, who is currently attending Worcester State University, with an expected graduation date of 2016, states:

> I sought out Bottom Line's help when I was in high school because I knew I wanted to go to college, but I didn't know how to get there. I met with my guidance counselor at school, but I knew I would need more individualized support. My Bottom Line Counselor helped me navigate some pretty tough decisions and guided me toward a financially responsible option. (BL 2015 Newsletter)

James Coleman, a leading University of Chicago sociologist who popularized the study of social capital and studied the low dropout rates of Catholic and other religiously centered high schools, notes that:

> Students in public high schools, were three times as likely as Catholic high school students to drop out, students at non-Catholic private schools were more than twice as likely to drop out. Coleman hypothesized that such success is due not to the particular characteristics of the individual students, but rather to the social structure enveloping the school; the students' parents have multi-stranded relations with one another, both as fellow members of the local church and as parents of school chums. And these parent communities provide social resources to at-risk students and insulate the schools from pressures to water down their core curricula.

Coleman warned, we cannot understate "the importance of the embeddedness of young persons in the enclaves of adults most proximate to them, first and most prominently the family and second, a surrounding community of adults." (Coleman, 2006, p. 302)

In our research, Bottom Line has become the community of educated, college-astute adults who are close to them and, most importantly, who care about the high school students seeking college admission. They see them frequently during the year, have several events throughout the year for counseling sessions, and also expand their reach to one-off events including year-end parties and scavenger hunts.

These students have realized the value of igniting their respective social capital to achieve collegiate admissions success:

> In recent years social scientists have framed concerns about the changing character of American society in terms of the concept of 'social capital.' … The core idea of social capital theory is that social networks have value. Just as a screwdriver (physical capital) or a college education (human capital) can increase productivity (both individual and collective), so too social contacts affect the productivity of individuals and groups. (Putnam, p. 18)

III. Active Participation Effect

To answer the question: Is there a moderating effect between active participation in these programs elements and personal factors on college admission outcomes? I tested the impact of active participation on the dependent outcome.

To analyze the active program participation effect, I examined the descriptive statistics for the number of student office visits to the contextual intervention program over the course of one year. Table 43 shows that the minimum number of office visits was n = 3, and the maximum number of office visits was n = 15, with a mean of 9.16 and a Std. deviation of 1.807. Thus the majority of students were visiting their Bottom Line college counselors an average of 9 times, which equates to approximately one visit per month.

Table 43: Number of Office Visits: Descriptive Statistics

Descriptives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
# Office Visits	199	3	15	9.16	1.807
Valid N (listwise)	199				

Block 5: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	.000	1	.998
	Block	.000	1	.998
	Model	45.347	17	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	150.367[a]	.259	.357

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Classification Table[a]

			Predicted		
			Student who got admitted from selective school		
	Observed		non-selective school	selective school	Percentage Correct
Step 1	Student who got admitted from selective school	non-selective school	31	22	58.5
		selective school	14	84	85.7
	Overall Percentage				76.2

a. The cut value is .500

BL 2015 Admit Data

In addition, if we add the number of office visits into the hierarchical regression model: Structure + Personal + Contextual + BLCP + number of office visit, this added

independent variable does not improve the model, nor does it change the percentage of the corrected prediction value.

Table 44: Variables in the Equation

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	gender(1)	.490	.503	.948	1	.330	1.632
	family_income(1)	.069	.591	.014	1	.906	1.072
	Race_D(1)	.224	.476	.222	1	.638	1.251
	HighestSAT	.004	.001	17.157	1	.000	1.004
	meaningofschool	-.472	.539	.765	1	.382	.624
	enjoy_school	.165	.345	.229	1	.632	1.180
	perserv_undecided	.179	.226	.631	1	.427	1.196
	perserv_resili_selfmanag	.651	.488	1.778	1	.182	1.918
	useresourse	-1.238	.500	6.122	1	.013	.290
	goalsetting	.362	.416	.760	1	.383	1.436
	grit	.443	.462	.917	1	.338	1.557
	peer	-.203	.297	.466	1	.495	.816
	family_invol	.075	.357	.044	1	.834	1.078
	family_support	.265	.336	.621	1	.431	1.303
	youth_dev_leadership	-.828	.416	3.957	1	.047	.437
	Number_BLCP	-.391	.176	4.933	1	.026	.677
	@#OfficeVisits	.000	.120	.000	1	.998	1.000
	Constant	-2.502	3.172	.622	1	.430	.082

a. Variable(s) entered on step 1: @#OfficeVisits.

In summary, the number of Bottom Line (BL) office visits did not statistically significantly affect predicting the dependent selective variable in the model (Wald=.000, df=1, p=.998). This may also be dependent on the fact that there is relatively little variance in the standard deviation among noted office visits.

CHAPTER 5: DISCUSSION AND IMPLICATIONS

Introduction and Significance

The goal of this investigation was to answer the question, "Do intervention programs such as Bottom Line, that were successful at getting lower income ethnic minority youth to apply to, get in to, and attend selective colleges and universities tend to attract and maintain students with higher levels of personal factors including factors of resilience, motivation, grit, and perseverance?" In this chapter I argue that the extent that relevant personal factors (independent variables) individually and collectively predicted how participants in an effective pre-collegiate program get admitted into a selective program was highlighted through the significance of certain scales. This chapter summarizes my examination of the organizing research questions for this study, which centered on the relationships between personal factors in the minority student achievement model and selective collegiate admissions.

1. To what extent do interventions in contextual factors modulate the selective collegiate outcome?

2. To what extent do relevant personal factors (independent variables) individually and collectively predict how participants in an effective pre-collegiate program get admitted into a selective university?

3. Is there a moderating effect between active participation in these program elements and selective college admission outcomes?

In summary, I found that a variety of modeling strategies and statistical analyses, including logistic analysis, supported three specific relations. As I examined the social stratification factors of income, race, and gender I determined that gender and one measure of social class – income – did not in fact change the selective collegiate outcome. Coleman noted the historical significance of gender based on stereotypes, and the reality that "Gender, more appropriately, gender roles, are deeply influenced by the cultural history of the individuals who are establishing policies and practices that discriminate between people as a function of their secondary sex characteristics." In this investigation, gender did not have a significant impact on the selective collegiate outcome.

In addition, the surveyed students hailed from low-income families whose average Actual Gross Income was less than $40,000 annually. Coleman also reiterates that living under conditions of poverty, which was the reality for most surveyed students, remains **"**a condition of risk that has a direct impact on academic performance… and what it means is that one often lives in conditions that interfere with acquiring the skills and experiences that translate into high academic performance" (Coleman, 2006, p. 4) which can also include heightened mobility. Yet in this investigation, low income was not a significant negative factor on selective collegiate outcomes.

The analyses in Chapter 4 show that youth development, SAT, use of resources, perseverance, resilience, and self-management are the key factors that influence selective college admission results among low-income/minority high school students. Specifically,

(a) Selective college admittance among low-income student has a strong positive correlation to SAT scores, perseverance, resilience, and self-management.

(b) Low-SES students tend to be negatively impacted by increased use of resources, and youth development leadership factors.

Contextual Factor: Youth Development Implications (Extracurriculars)

As a reminder, "there are four major elements that historically comprise a child's mesosystem: his or her school, family, peers, and institutions such as a church or similar community organization. These are the contextual factors that influence minority student achievement" (Coleman, 2007, p. 6). The model identified the contextual factor of involvement in youth development activities. A common misconception among first generation families is that numerous extracurricular activities in an admission application are a positive thing. As a prior Harvard Business School admissions officer, I note that selective college admissions typically value selective extracurricular activities that are often cost-prohibitive to lower-class students. An informal interview with Kelly Sauls, prior associate director of admissions at the University of Virginia Darden School of Business and Director of Admissions at University of Virginia Frank Batten School of Leadership and Public Policy, confirmed that selective collegiate admissions personnel value a high level of expertise in few extracurricular activities. Sauls notes, "It is not necessary to have a title spread across several organizations; impact can be done without a title. For example, expert proficiency in sports such as lacrosse, soccer, tennis, or squash are often valued."

Scattered versus Focused Approach

The reality is that depth, not breadth, or a more focused versus scattered approach to extracurricular activities is rewarded more often at selective colleges. “Low income strivers” often face a deficit in access to higher priced extracurricular activities, as “affluent families have tripled the amount by which they outspend low-income families on enrichment activities like sports, music lessons and summer camps, according to Professor Duncan and Prof. Richard Murnane of Harvard.” (DeParle) As previously noted in the literature review, activities such as advanced musical training and athletic competition including lacrosse, tennis, swimming, equestrian, and gymnastics, are the talents that upper-class parents actively cultivate in their offspring to yield admittance to competitive colleges such as Amherst, Williams, Duke, UCLA, Yale, and NYU. In addition, select collegiate institutions were not established for minorities nor low-income students; they were originally created for an elite White European ruling class, and “as creators of policies and practices, their advantages accrue over generations, in the form of family wealth, that serve to continue the advantage even after the more overt discriminatory practices have been eliminated” (Coleman, 2006, p. 4). These resources directly translate into opportunities to engage in more elite extracurricular activities at a very young age, which allows advance levels of expertise during high school years.

The argument can also be made that certain critical traits can be encouraged in a more scattered, creative, adaptive approach that excels in numerous areas. For example, colleges such as Babson College and selective business schools in Stanford and Harvard are adapting entire curriculums for entrepreneurial concentrations that embrace a more

broad-based skill set. A notable historical figure, Paul Robeson, was an African-American who attended Rutgers College (class valedictorian) and Columbia Law School (1922) and who was also an accomplished actor, singer, debater, and athlete with proficiency in football, basketball, baseball, and track (Robeson, P. 1988). Under today's selective admission process, Paul Robeson may not have been a notable candidate due to his "unfocused" breadth of activities.

As we delved further into the research results, specific involvement in more BCLP activities had a negative relationship to selective college admissions. There are several ways to lessen this negative impact. If the college preparation process for BL were to begin sophomore or junior year, students could be advised to focus and limit their extracurricular activities to one or two strategic extracurricular activities during high school.

As we further examine the negative relationship of Use of Resources to selective collegiate admissions among our target group, the concept of depth versus breadth is further illuminated by scholars Deluca, Clampet-Lundquist, and Edin, in their book *Coming of Age in the Other America.* They studied lower-income inner city adolescents and found that the "deciding factor behind kids who meet their potential and those who wind up falling short" is often an "identity project, essentially a passion or hobby that helped motivate them." This "life raft" included passions as diverse as dancing, rearing pigeons, or Japanese anime. Their research found that "out of 116 youth who are not still in high school, 90 percent of those with an identity project graduated, while only 58 percent of those without one did so" (Semuels, p. 4). These projects helped propel

students into interests that allowed them to build depth and intellect around a particular pursuit, which helped them persevere to graduate high school and would be a positive factor to an admissions counselor who is actively looking for focused activities. Despite the fact that these are not "high ticket" extracurricular activities such as lacrosse or tennis, these unique 'identity projects' could create a very intriguing story of depth and commitment in a selective college essay.

Personal Factor: SAT Implications

This section takes a closer look at the personal traits, or lack thereof, that modulate a low-income student's selective college admittance. It can be argued that a student's lower personal SAT score is a significant risk factor for admittance into a selective college. Coleman notes, "The more risk factors an individual has, the higher the probability that he or she will experience a negative outcome than a person who has more protective factors in his or her life. If the individual with more risk factors than protective factors has a positive outcome, we refer to them and the outcome as being resilient" (Coleman, 2006, p. 1). The minority students in this investigation who achieved higher SAT scores in high school, despite their low-income status, have exhibited resilient tendencies.

The significant relationship of SAT scores to selective college admissions in this investigation may initially suggest that the Bottom Line program should consider expanding the program scope to include SAT prep in addition to essay and financial aid assistance. At first glance, the solution of partnering with an SAT prep program such as

Kaplan, Princeton, or an online portal such as FreeSAT.com, or of hiring SAT BL counselors could augment critical resources that upper-class children obtain to improve their standardized test scores.

As we explore this factor, it can be argued that the need is much greater than SAT intervention in high school. As schools increasingly become oriented towards post-secondary education as the next step in the career path (e.g., increased academic requirements for graduation), those schools become increasingly irrelevant to the employment possibilities within poor communities (Coleman, 2007, p. 3). Vocational programs often teach practical math skills including basic accounting. Higher-level mathematics including algebra, geometry, trigonometry, and calculus may not be deemed a necessity for low-income students. The critical need to lessen the selective college gap among lower income students is to improve early math literacy. In order to adopt and succeed in a rigorous high school curriculum that fosters SAT mathematical aptitude, students must encounter math by a certain age. Researchers often note the critical early adoption of algebra. Scholars note that "algebra is the key 'gatekeeper' for student access to upper-level high school courses in mathematics and science that are the drivers of high school graduation, college readiness, and college completion," and that:

> Preparing all students for rigorous mathematics and science coursework in middle school and early in high school helps to close the achievement gap among students from differing ethnic and socioeconomic groups…The trajectory for taking advanced high school coursework is set prior to 9th grade… The middle school years

> are when students decide which academic path they will take, so that broad-based, rigorous middle school coursework in mathematics and science can be a turning point for future student performance over the long-term (Evan, & Olchefske. (2006).

The Gateway to Student Success in Mathematics and Science (Microsoft and American Institutes for Research) November 2006 Economics Scholar, Roland Fryer, noted critical 2011 National Assessment of Educational Progress data that states that among eighth graders "there was not one city where more than 25 percent of blacks or Hispanics were proficient in reading or in math" (Bacon, p. 32). This highlights the urgency of addressing mathematical proficiency early among low-income students. For those students with constrained resources, entering programs similar to Bottom Line in middle school could have a significant impact. Researcher Begay exemplified this approach in Arizona when she reiterated the need for earlier collegiate intervention efforts. She noted, "The University of Arizona does a great job in providing an awareness to parents and students at the eighth-grade level of what to expect and how to plan for college. We also need to put a college awareness theme into the middle school and high school curriculum offerings and not just leave it to the high school counselors to carry the burden" (Begay, 2016).

In addition, "students from disadvantaged families often do not get timely advice on what high-school classes they must take to qualify for admission to a four-year college, what standardized tests they need to sign up for, or how to fill out the form that is the gateway to federal student aid, (FAFSA) …or 'college knowledge' that students need

exposure to as early as middle school" (Blumenstyk, p. 23). Optimally, a program like Bottom Line could identify students in their middle-school years. Such a college contextual counseling intervention would begin earlier than high school and would incorporate mathematics in the program curriculum to prepare for the SAT mathematical section.[xv]

Another program that focuses on early math intervention is The Algebra Project, which is a "national, nonprofit organization that uses mathematics as an organizing tool to ensure quality public school education for every child in America" (http://www.algebra.org/whoweare.php). This organization focuses on algebraic education in the early high school years to increase mathematical competency. NSF research conducted "from 2009–2013, demonstrates [that participants in] the Algebra Project… showed significant progress on their national math scores" (Algebra Project).

In summary, upper-class students with significant social and financial capital are often able to build on their strong mathematical skills when they pay for personalized SAT tutors and test-prep courses. Increasing SAT scores in low-income minority students is critical to increasing the outcome of admittance to selective colleges. The long-term goal is to reduce the role of standardized testing among all college application processes, but in the short-term the SAT remains a key gatekeeper to collegiate admissions success, as the model results indicate a significant correlation between SAT scores and selective college admittance. Programs such as Bottom Line are, rightfully, organized around addressing the non-academic factors that lead to college access and completion. Raising SAT scores is the responsibility of the schools that students are attending.

Personal Factor: Use of Resources Implications (Motivation)

The theory of resilience is often used "to describe the personal characteristic or characteristics of the person who overcomes a condition of risk." This use (e.g., Wolin and Wolin, 1993) identifies the characteristics (e.g., personal traits such as persistence or interpersonal competence) that the individual uses to overcome the condition of risk" (Coleman, 2007, p. 2). For a middle- or upper-class youth, additional support, in the form of wise, respected adults and mentors can be critical for their career and educational choices. For example, many "middle-class families are structured to prepare their children for school, to be available to the school for communication about the child, and to provide for the child those experiences (e.g., sports, music lessons, or sit-down family dinners) that teach the social skills of school (e.g., delaying gratification, paying attention, deference to authority, and performance under pressure). The lower a family's economic status, the more difficult it is to provide this support" (Coleman, 2007, p. 1).

Our data supported the thesis that among low-income families increased utilization of families and/or peers can actually hinder the ability to access a selective college. A dilution of the BL counselor advice can be the result of conflicting collegiate advice from multiple sources, including close family members without college degrees, or over-tasked school guidance counselors. Among more affluent families, "adolescents with high achieving, more academically motivated, and better behaved friends tend to do better in school, take more advanced courses, exhibit fewer behavior problems, and have higher college expectations, and attendance. Adolescents whose friends expect to and attend college are also more likely to do so themselves." Students in rigorous high

schools, including private and Catholic schools, are more prone to encounter high performing adolescent peers who steer them towards more selective colleges. (Cherng, 2012, p. 5)

Conversely, "without the intense supervision that many affluent students enjoy," students can choose to apply to less selective colleges close to family and boyfriends" (DeParle, p. 6). Scholars Schneider, and Stevenson astutely note that: "For all students, selecting colleges that align with their interests, skills and talents require a strategic planning process that relies on knowledgeable family and school personnel who can provide requisite information for making sound post-secondary choices." (Schneider, Judy, 2004, p. 6)

The importance of these critical social networks cannot be underplayed. In addition, advice from peers may also elicit faulty college advice. Economist Fry's popularity research discovered that while "white students' popularity increased with academic success, high achieving minority students suffered socially. Fry argues that this social pressure to underachieve has serious ramifications on how minorities do in school, and in admissions to elite colleges" (Bacon, p. 31). Students in middle- and upper-class families may celebrate their admittance to Williams or to Boston College as a true achievement, while minority lower-income students may reinforce the belief that they are "acting white" if they get in to such schools and that they are further distancing themselves from their communities.

It is important not to alienate BL students from their family of origin, but

balancing and prioritizing one-on-one BL counselor advice may be a critical strategic practice rather than overreliance on often over-worked school counselors, family members who may not be college educated, or peers who have not gone through a successful selective college admissions process.

Several options may be considered to counteract any dilution of the expert Bottom Line counselor advice. First, for example, students can be encouraged to keep a journal that notes collegiate advice obtained from sources outside of the BL counselor, so this advice can be measured against formal BL advice.

Second, to reinforce the astute counseling of the BL organization, BL "networkers" who have recently graduated from Bottom Line's college access program and are in their first years of college can be assigned and paid to be informal sounding boards in virtual or live communities to augment student's reliance on their neighborhood, family, or high school peer group. A scholar who has long advanced additional inclusive methods to determine selective college admissions among minority students is Deborah Bial. Through research in higher education and admissions and with the Posse Foundation, Bial created a "college adaptability index" designed to capture a set of non-cognitive traits that could identify student leaders who might be missed by traditional admissions processes (Bial, 2004).

> A critical trait of The Posse Foundation is the support of a peer network. Posse is a youth leadership development and college diversity program that connects student leaders to the best colleges

> and universities in the country. Posse began when one student said he would never have dropped out of college if he had had his 'posse' with him …The Posse Foundation develops partnerships with selective colleges and universities that agree to sponsor the program by providing full tuition leadership scholarships for each Posse Scholar. Each college partner selects a diverse group of approximately ten students each year for early decision admission…Posse Foundation Scholars persist and graduate from college at a rate of more than 90 percent. (Posse Foundation, 2005) (Bial, Rodriguez, 2007)

Utilizing a pre-college "posse" or social capital group for current Bottom Line students could create an additional network of social capital collegiate resources that can also help BL students navigate selective college access. These select groups of students can be drawn from previously identified top feeder high schools where BL has nine or more current students.

A third strategy could be to engage family members early in the BL process. Historically, "social institutions, such as family and schools, are designed to teach individuals how to behave within those socially created gender expectations" (Coleman, 2007, p. 5). Low-income families who may be recent immigrants are not intimately knowledgeable about the intricacies expected in many "social institutions" including selective college.

One example to counteract this risk factor is a contextual program, such as "Success in the Sciences," which "provides intense tutoring, advising, mentoring, motivation, and enrichment, for students poised to pursue graduate study" and engages the parents by providing support Saturday sessions for parents in Spanish and English (Brown-Glaude, xiii). Similar sessions for Parents of BL scholars could be implemented throughout the year.

Finally, I recently attended an alumni session of a specialized charter school in Harlem that showcased returning seniors who had been admitted to college and persevered to their sophomore year. Specific successful BL student case studies targeted by ethnicity (AA, Latino, and Asian) could be videotaped and sent in a DVD or email format to parents to increase the program familiarity and context.

Since a significant portion of the students are African-American and Latino, another tactic to build the BL counselor's credibility with family members who are often people of color could be to increase their knowledge through visiting and meeting with admission officers of Historically Black College and Historically Hispanic Institutions. A review of the data noted that fewer than five students were accepted to an HBCU, including Morehouse College. Table 45 indicates a selection of HBCUs whose selectivity admission rates are less than 50 percent. The common first generational student and parental fear of leaving home may be mitigated by Southern relatives of BL students who could provide additional social capital in terms of care and assistance.

Table 45: Historically Black Colleges

HBCU	US News Ranking	Selectivity %
Spelman (GA)	1	41
Hampton University (VA)	4	36
Tuskegee University (AL)	5	41
Fisk University (TN)	7	21
Florida A&M	8	45
North Carolina Central University	11	39
Delaware State University	13	26
Dillard (LA)	13	31
Johnson C. Smith University (NC)	17	37
Albany State University (GA)	28	27

U.S. News & World Report, 2015, p. 116

Personal Factors: Perseverance, Resilience, Self-Management Implications

The personal factor of perseverance was significant in our investigation of selective college admittance among surveyed students whose income and race placed them in high-risk academic categories. Another group of high-risk children are children of alcoholics. “Wolin and Wolin (1993), in a study of children who were raised in alcoholic families and were relatively well adjusted, found that the children developed a concept of personality that they call the resilient self. Their investigation found that these children shared several characteristics in common: insight, independence, relationships, initiative, creativity/humor, and morality. For the resilient child, as conceived by the

Wolins, this is an important balance to being independent. The next attribute is initiative or the willingness to take on and solve problems, to take on challenges and enjoy the process. This speaks to a willingness to be active in the face of adversity" (Coleman, 2007, p. 9).

BL surveyed students were able to persevere despite the odds towards a specific educational goal. Thus another concept that reemerges as we reflect on the significance of perseverance self-management scores is the utilitarian nature of hope through targeted perseverance efforts. Madura Soutter (2016) in an unpublished article entitled "Hope and Optimism in an Urban High School" notes the various types of hope that can be fostered in urban youth. Material hope can be understood as the concrete resources provided by educators to students to help them achieve their goals. This kind of hope can combat societal inequalities related to access, race and wealth, Madura notes. "Snyder et al.'s (2002) definition of hope theory incorporates identifying goals along with two key components: the strategies (or pathways) to accomplish those goals, and the motivation (or agency) to follow those goals." In many ways, Duncan-Andrade's (2009) material hope could be described as the "pathways" outlined by Snyder et al. (2002).

I agree that material hope remains a critical, tangible personal factor for these students. It is not enough to have "hero hope" that points to a successful college graduate role model who has overcome race or class structural inequities without giving a would-be student the tools to help them to dig out of their proverbial holes. Bottom Line has developed a tangible collegiate access curriculum and has resources in the form of

educated, motivated early-career Bottom Line counselors to interface with these students in a personal, caring manner.

Non-significant Scales

Selective independent variables such as grit turned out to be insignificant. Yet scholars (e.g., Duckworth) have highlighted the role of internal drivers such as grit to overcome difficult situations and to pursue long-term goals. Tyrone C. Howard, UCLA Associate Dean for Equity and Inclusion, notes, "It can be irresponsible and unfair to talk about grit without talking about structural challenges…educators and administrators tend to overestimate the power of the person and underestimate the power of the situation" (Sultan, pp. 3, 4). Low income often comes along with factors such as single-family homes, increased mobility across school systems, unemployment, and limited health care. Regarding the grit scale, Howard investigates the role of struggles and obstacles by asking questions such as whether "Whenever I get sick, I am able to go to a doctor, [or] I always have bus fare to get to school" (Sultan, p. 4). There are numerous societal ills associated with being poor or in a lower-income class, and Bottom Line has focused on increasing access to selective schools through personalized, targeted collegiate counseling that strives to overcome inadequate low-income school systems or first generation students that do not have "legacy" parents and family members to smooth their collegiate pathways.

As the Youth Development and Use of Resources indicators emerge as two significant negative predictors of selective college admission, they highlight the delicate relationships that members of the low-income minority student community must navigate

with their community, peers, family, and mentors. Disadvantaged children cannot achieve alone. Al Ries, marketing professional and author, aptly states: “Success in life is based more on what others can do for you than on what you can do for yourself” (Adamson, Forbes, March 2016). I argue that students who participate in the Bottom Line program have understood the confluence of their disadvantaged surroundings and the ability to reach behind them while standing on the shoulders of successful college-educated individuals, including their Bottom Line counselors. The students who are drawn to engage in a college outreach program may already have pre-existing higher measures of resiliency and grit, based on their self-selection in the program. A pre-survey earlier in their high school or junior high years could help capture the initial measures of grit inherent in this target population.

Future Implications

Selective college admissions continue to be a critical pathway for lower-income students to acquire economic stability. As noted by Chingos, “the more selective the institution is, the more likely kids are to graduate [;] there are higher expectations, more resources and more stigma to dropping out” (DeParle, p. 16).

Several key findings emerged, which included three key topics.

1) Academics matter – In terms of standardized testing (SAT) for selective college admissions, early mastery of mathematics is crucial to achieve well on the SAT.

2) Race matters – Despite the distinction between the low achieving and higher

achieving Asian populations, Asian and Whites as a whole are benefitting from higher SAT scores and their ethnic identity in higher selective admissions.

3) Activities matter – Breadth versus depth is key to extracurricular mastery and achievement for the selective collegiate admissions application.

In summary, as hypothesized, personal factors are critical in low-income selective college matters. Perseverance and hope in mastering the selective collegiate process through personalized, individualized coaching achieved through BL coaches remain a helpful approach. This coaching process could be augmented by launching the program earlier than senior year, enabling increased impact through adding an academic mathematical component, coaching participation in select extracurricular activities earlier in high school, expanding the exposure of selective schools to include HBCUs and HSIs, and creating a peer ambassadors or networking program and online social mentoring support to augment the BL advice from over-worked school counselors and well-meaning peers and family members.

The need for higher education will continue, as experts note: "By 2020, two-thirds of all jobs will require at least some education and training beyond high school (versus 28 percent of jobs forty years ago)" (Blumenstyk, p. 3). As the cost of living continues to increase, individuals with college degrees will be more poised for financial success, since "median earnings for bachelor's degree holders are 65 percent greater than for those with just a high-school diploma over a 40-year working career, according to latest data from the College Board" (Blumenstyk, p. 5). College education remains key to escaping

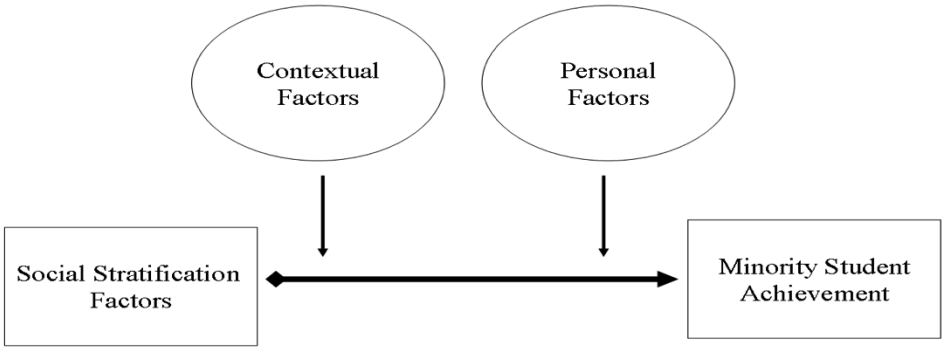
poverty in the United States.

In addition, the consideration of ethnicity in higher education will remain a key factor. This will be true across ethnic groups, as "the number of Hispanic students in any level of higher education more than doubled from 1976 to about 782,000 in 1990 and then nearly quadrupled by 2012, reaching almost three million" (Blumenstyk, p. 13). Critically, Hispanics and Blacks continue to lag behind whites and Asian Americans with college degrees: "In 2012, just 14.5 percent of Hispanics aged twenty-five years or older had a bachelor's degree, compared with 34.5 percent of whites and 21 percent of blacks. Among Asian Americans, 51 percent had a bachelor's degree" (Blumenstyk, p. 14). Continued successful college intervention efforts must be undertaken to rebalance these scales.

Finally, class and income will continue to be a key focus, as the U.S. Department of Education highlights the income disparity among low and upper class students: "Among students who enrolled in college immediately after high school, for example… in 2011, 82 percent of high-income students went on to college, while only 51 percent of low-income students did" (Blumenstyk, p. 22). And our literature review section noted, "Most of the white students went to one of the nation's 468 more-selective public and private four-year colleges, while most of the Hispanic and African-American students ended up at open-access two year and four-year institutions" (Blumenstyk, p. 28). Selective college admittance in this low-income, minority group will remain a key driver for higher education equalization for all. This investigation, however, demonstrates that it is academic competence and personal factors such as perseverance and hope that

predict which lower-income minority students will get into selective colleges.

Figure 13: Coleman Process Model of Minority Student Achievement



Process model of minority school achievement (Coleman, 2007, p. 3)

Looking at our study through the lens of the Coleman Achievement Model (Figure 13) reveals that a focused, contextual intervention program such as Bottom Line, that strategically utilizes critical factors including the positive use of SAT, perseverance, self-reliance, and stewarding in a positive manner, the influence of youth development programs and use of resources can continue to make inroads in eliminating the long-term inequity found in higher education through the loathsome historical chains of slavery, poverty, and discrimination.

Limitations of the Study

This investigation took place during summer 2015. This time period captured the collegiate admission outcomes after the spring college admission notification letters had been received. Limitations included gathering survey data from Bottom Line student participants from only three cities in New York, Massachusetts, and Illinois. Further research could investigate similar college admission assistance programs that target low-

income/minority students in a wider sampling of cities. It is critical to note that this may have a negative effect on the overall return rate of surveys, and there may be issues of scale reliability if we rapidly increase the scale of surveyed students.

In addition, the limitations of this sample size necessitate generalizing conclusions to the larger population. Replication of this study to a new class of high school seniors in the Bottom Line program could test the reliability of the significant factor results that emerged in the current model.

Future Suggestions for Research

This study offers several implications for future research. First, research is essential to better understand how low-income minority students overcome formidable academic barriers in accessing entrance to selective colleges. Research should continue to examine successful academic contextual intervention programs that focus on mathematics to ensure students are SAT ready in their high school years.

In addition, the overuse of their BL personal school and familial network can be at odds with the personalized, customized BL counselor intervention. Additional research on the effective integration of the social capital provided by familial and school counseling sources would be helpful to mitigate the deficit effects of excessive diverse sources of collegiate counseling and tips. Furthermore, research on the effectiveness of specific components of the “expert” sessions of the BL counseling can yield significant results if shared with the family at the beginning of the BL program.

Finally, a critical suggestion made in this study is to focus on decreasing the

number of extracurricular activities in which prospective college applicants enroll. Continued research on the most effective extracurricular activities in which low-income, minority children should engage would help focus the coaching efforts of this group. Limited funds may prohibit such children from engaging in more expensive extracurricular activities such as squash or ice-skating, but are there other options, such as lower-cost tennis lessons at the local community college or exploring theatre groups at the local church, that are considered positive in the selective collegiate arena. I envision reviewing a group of low-income minority students who have gained admittance to selective colleges and creating a "success" profile of extracurricular activities for this critical group.

In addition, further consideration should be given to determine how much intervention is too much? This non-profit organization provided personalized, individual coaching that continues throughout four years of college. Their collegiate interventions include campus visits by their counselors, care packages, birthday cards and post-graduation career placement services. Another emerging approach to complement collegiate counseling services access is The College Ambition Program (CAP), which is designed to "promote a college-going culture in schools." To enhance summer mentoring they instituted a "text nudge message" that reminded students of upcoming application deadlines, scholarships, and financial aid applications. The first-year results revealed that "students who received the nudge compared to students who did not receive the treatment were more likely to visit the CAP center. ($t = 19$, $p < .0001$)." (Schneider, Judy 2004) Adoption of the cost-effective approach (approximately $6 dollars) could replace more

costly intervention methods and allow broader adoption of certain elements of the program. Further research could delineate whether our non-profit organization is providing too much of an enabling factor for students. For instance, five to ten years post-graduation, will the participating students level of employment and/or overall success be maintained without the protective oversight of their collegiate intervention program?

In addition, a more critical analysis of the specific role of race, ethnicity, selective pertinent personal factors, and collegiate admission could be undertaken to delve further quantitatively and qualitatively into cultural differences and nuances and how they positively or negatively impact selective college admissions.

In summary, admittance to selective colleges, defined as colleges that accept less than 50% of their applicants (McPherson, 1990, p. 54), often leads to increased status, higher income, and more job opportunities. The benefits of selective college admissions include national or regional college brand prestige and elite alumni affiliation. This research focused on successful personal factors and identified several key areas including academics exhibited through SAT success, strategic mentoring focus, targeted perseverance efforts, and selective in-depth extracurricular adherence that affect selective college admissions among low-income students.

Scholars Martha J. Baily and Susan M. Dynarski of the University of Michigan note that the problem of "low-income" strivers is growing, not lessening. In fact, "thirty years ago, there was a 31-percentage point difference between the share of prosperous and poor Americans who earned bachelor's degrees, now the gap is 45 points" (DeParle,

p. 3). Further research to counteract the societal ills of poverty and racism amongst this critical college-going youth population will allow all diverse populations to succeed in a rigorous, selective college environment and position themselves for future personal, financial, and material success.

APPENDICES

APPENDIX A: DEFINITIONS

Affirmative Action: “any effort taken to expand opportunity for women or racial, ethnic and national origin minorities by using membership in those groups that have been subject to discrimination as a consideration” (Edley, 1996, p. 17).

Critical event: "as told in a story reveals a change of understanding or worldview by the storyteller" (Webster, 2007).

Data analysis: "conceptually connecting human artifacts with other meaningful information" (Marvasti, 2004, p. 155).

Data reduction: "the process of reducing data into more manageable and relevant segments" (Marvasti, p. 155).

Elite Colleges: Colleges that accept less than 50% of their applicants. (Mitchell, 2001)

Gatekeepers: "entities deciding for whom the gates will be opened, in this case with offers of admission to postsecondary schooling opportunities" (Muska, 2011, p. 42).

Higher Education: "postsecondary schooling, often referred to as “colleges and universities” (Sander, 2012, p. xvii).

Minority: "of race refers to traditionally “underrepresented” individuals including Blacks, Hispanics (or Latinos), and Native Americans (Gurin, 2004 p. 187). Blacks, Hispanics/Latinos, and Native Americans are also often referred to as “people of color” (Tatum, 1997, p. xv).

APPENDIX B: RESEARCH TIMETABLE

Month	Task
Confirm committee members	December 2013 - Dr. Hardin Coleman, Dr. Scott Solberg, Dr. Anjulet Tucker
IRB Process	August 2014
Proposal	August 2014
Contact participants	September 2014
Conduct Student Survey 1	June 2015
Review first survey results – committee	July 2015
Begin to analyze survey results/SPSS	August/September 2015
Confirm college admit outcomes – Survey	June 2015
Final Report	October 2016

APPENDIX C: Informed Consent: Students (2 signed copies)

Title of Project: The college admissions experience during High School Senior Year

Thank you for agreeing to participate in this study, in which data collection will take place from April 15, 2014 to December 31, 2014. This form details the purpose of this study, your rights as a participant, a description of the involvement required, and a description of the incentives provided to you.

1) The purpose of this study is to bring to light the experience of minority high school seniors and to show the complexity of their college admission process. The work gives special attention to how members of African-American and Latino student groups cope with the perseverance and motivation needed during the selective college process. Insights gathered by you and other participants will be used in writing a dissertation, which will be read by my dissertation committee at Boston University's School of Education. Insights will also likely directing the design of future research on the same topic.

2) Your participation in this survey study is voluntary. Please note that you may feel uncomfortable answering questions during the survey. Therefore, you also have the right to withdraw from the study at any time. In the event that you choose to withdraw from the study, all information you provide will be destroyed and omitted from the final report.

3) Benefits: This is an opportunity for students like you to present a balanced and unbiased perspective on their lives and can assist future students to make proactive, diligent choices to prepare for selective college admissions.

3) The expectations of time commitment are as follows:

- One survey questionnaire about your education and high school college application admissions process.
- These surveys will be scheduled during your High School senior year, in the spring.
- We request that you answer a number of in-depth questions in this survey questionnaire.

The incentives provided for your participation:

- $ 5 Target gift card
- Assisting your community.

4) The surveys will only be reviewed by professors and assistants involved in analyzing data for the purpose of this study. Though direct survey results from you may be used in the final report, your name and other identifying information will be kept confidential. All of these materials will be stored at Pauline Jennet's residence and will be destroyed by the end of the year 2016. No identifying labels will be attached to the survey (the survey will not be associated with your identity.) Also, in the event of publication of this research, no personally identified information will be disclosed. Your name will be changed to an alias in any publications or reports, and any details, which might identify you, will also be removed.

5) You are encouraged to ask questions or raise concerns at any time about the nature of the study or the methods I am using. Please contact me at any time at pauljett@aol.com, or 617 501-0015. You may also contact my research advisor, Dr. Hardin Coleman, at hcoleman@bu.edu or 617-353-x.

6) You may obtain further information about your rights as a research subject by calling the **BU CRC Institutional Research Board Office at 617-358-6115.**

Appendix D: Sample High School Background

www.bls.org - Boston Latin School - America's First Public School

With its roots dating back to 1635, Boston Latin School is a six-year college preparatory school which provides a rigorous academic program in the classical tradition and which fosters the pursuit of excellence. Latin School serves an economically and culturally diverse population of students in grades 7 to 12. It is also an institution that provides the groundwork for full participation in our economy and society, preparing students to be both productive citizens in a democracy and responsible adults who have an awareness of global issues.

Boston Latin Academy is a Boston Public exam school that accepts new students exclusively for grades 7 and 9. Students are admitted based on results of an entrance test, called the Independent Schools Entrance Exam (ISEE), and on grade point average (GPA). Each of these accounts for 50% of a student's score. Applicants must also prove Boston residency.

Mission

Boston Latin School seeks to ground its students in a contemporary classical education as preparation for successful college studies, responsible and engaged citizenship, and a rewarding

The academic requirements for graduation from Boston Latin School are:

- 4 years of English (grades 9–12) and a senior research paper

- U. S. History
- 3 years of science
- 4 years of high school mathematics starting with Algebra 1
- 4 years of modern foreign language
- 4 years of Latin for students starting in Class VI / 3 years for students entering in Class IV

Boston Latin Academy (BLA) was originally established in 1878 as Girls' Latin School (GLS), the very first college preparatory high school for girls established in the United States.

Appendix E: Massachusetts Dart Rankings

The overall DART ranking system is based on five levels.

Accountability and Assistance System Overview

By the Accountability, Partnerships and Targeted Assistance, Elementary and Secondary Education

- Massachusetts' state system places schools and districts on a five-level scale, ranking the highest performing in Level 1 and lowest performing in Level 5 Schools . The strength of this accountability system is undergirded by the state's 2010 Act Relative to the Achievement Gap, which provides tools, rules, and supports for the state to aggressively engage with schools and districts in Level 4 Districts and Schools and 5.

DART Ranking background

http://www.mass.gov/edu/docs/ese/accountability/school-effect-conditions.pdf

Appendix: DART Data

2015 Accountability Data - Boston Latin Academy

Accountability Information About the Data	
Accountability and Assistance Level	
Level 1	**2015 Level held harmless** **Very low assessment participation (Less than 90%)** **Focus on Afr. Amer./Black -White -Economically disadvantaged -Hispanic/Latino -ELL and former ELL -High needs -All students -**

This school's overall performance relative to other schools in same school type (School percentiles: 1–99)	
All students:	90 Lowest performing to Highest performing
This school's progress toward narrowing proficiency gaps (Cumulative Progress and Performance Index: 1–100	

About this Report

Accountability and Assistance Levels: All Massachusetts schools and districts with sufficient data are classified into one of five accountabilities and Assistance levels (1–5), with the highest performing in Level 1 and lowest performing in Level 5. In general, a district is classified into the level of its lowest performing school, unless the district was independently classified into Level 4 or 5 as a result of action by the Board of Elementary and Secondary Education.

School Percentiles: A school percentile between 1 and 99 is reported for schools with at least four years of data. This number is an indication of the school's overall performance relative to other schools that serve the same or similar grades.

APPENDIX F: SELECTIVE COLLEGE AVERAGE ACCEPTANCE RATES

(Muska, 2011)

College	Total Apps received	Total Apps Accepted	Overall Acceptance Rate	Bottom Line Accepted Students
Amherst	7,667	1,158	15%	1
Brown	24,988	2,708	11%	1
Chicago	13,600	3,645	27%	
Columbia	25,428	2,496	10%	
Cornell	33,786	6,567	19%	
Dartmouth	18,130	2,184	12%	2
Harvard	29,112	2,046	7%	1
Northwestern	25,442	6,864	27%	
Penn	22,939	3,926	17%	
Pomona	6,149	965	16%	
Princeton	21,964	2,150	10%	
Stanford	30,428	2,300	8%	
Wesleyan	10,068	2,215	22%	
Yale	26,000	1,951	7.5%	
Totals/Average	295,681	41,175	15%	

Appendix G: U.S. News & World Report Announces the 2015 Best Colleges

Sept. 9, 2014

Washington, D.C. – Sept. 9, 2014 – U.S. News & World Report today released the 30th edition of its flagship Best Colleges rankings, which measure academic excellence. For the second year in a row, Princeton University claims sole possession of the No. 1 spot in the Best National Universities category. Williams College tops the list of Best National Liberal Arts Colleges, making it No. 1 for 12 years in a row. University of California—Berkeley holds onto its spot as the Top Public School among National Universities.

The 2015 edition of Best Colleges includes data on nearly 1,800 schools nationwide to help parents and students evaluate their options. Eligible schools are ranked on up to 16 measures of academic excellence. Outcome-related measures, such as graduation and retention rates, account for 30 percent of the rankings and are the most heavily weighted factors in the methodology.

The 2015 edition of Best Colleges also features Web-exclusive rankings, including lists on Campus Ethnic Diversity, Economic Diversity at top-ranked schools and the Best Colleges for Veterans. For students seeking a specific career path, there are updated rankings of the Best Undergraduate Business Programs and Best Undergraduate Engineering Programs.

"Our goal for the past 30 years has been to provide families with the most comprehensive information on colleges to help them make one of life's most important – and often most costly – decisions," said Brian Kelly, editor and chief content officer.

The college ranking categories are based upon the 2010 Carnegie Foundation for the Advancement of Teaching classifications. U.S. News has used the Carnegie classification system since the first Best Colleges rankings in 1983, because they are accepted as the basis for classifying schools by most higher education researchers.

In an exclusive arrangement, the launch of the 2015 edition of Best Colleges is being sponsored by Fidelity Investments. For more information about Best Colleges, visit www.usnews.com/colleges or find us on Facebook, Twitter and Google+. To learn more about the U.S. News College Compass, which provides access to the most complete rankings and data, or to order a copy of the companion "Best Colleges 2015" guidebook, visit the online U.S. News Store.

U.S. News 2015 Best Colleges Rankings

*For the full list of rankings, visit http://www.usnews.com/colleges

http://www.usnews.com/info/blogs/press-room/2014/09/09/us-news-announces-the-2015-best colleges

Appendix H: College Provisional Acceptance Examples

Syracuse University

Do you have conditional admission at Syracuse University and what does that mean?

International applicants can be granted Conditional Admission to Syracuse University if the academic requirements for admission have been met, but there is insufficient English proficiency and/or insufficient financial support. Conditional admission will only be considered for students who have submitted a TOEFL or IELTS score, even if the score does not meet the minimum requirements in the chart above.

Conditionally admitted students will be considered fully admitted to the University and issued the SEVIS I-20 form (the form that is needed to obtain the F-1 Student Visa) once the University receives English proficiency credentials and/or the proof of sufficient funding. **Space is not guaranteed during conditional admission.**

http://admissions.syr.edu/whoyouare/internationalstudents/faqs/

Provisional Admission

UMass Boston may offer provisional admission to the international undergraduate applicants that meet all of the admission criteria, but whose TOEFL or IELTS results do not meet the minimum requirements. Students provisionally accepted to the university will be referred to enroll in the **University Preparation ESL program**.

Appendix I: Personal Survey Factors/ Questions

Assessment Items

I Structural - BL questionnaire, non-identifiers

a. Race - American Indian, Asian, Black, Hispanic, White, Other

b. Class - Mom, Dad - job, income, cars, Income above $40M or below, College education, sibling college

c. Academic - High School, GPA, SAT, PSAT, MCAS

Please fill in every column of the BL survey

II. Personal Questions - on-line survey

Items will be listed on a 5-point scale with

0 = not like me at all

1 = not much like me

3 - somewhat like me

4 - mostly like me

5 - very much like me

Personal: Motivation (6–15)

- Attending school
- (Meaning of school subscale)
- Because, if I didn't, I will feel very bad.
- So I can make lots and lots of money in the future.
- Because education is important to achieve my goals.
- So important people in my life won't be disappointed in me.

- Because I don't want to let others down.
- Because school subjects (math, science, etc.) are important to me
- Because if I don't, I'll get punished.
- Because I see the importance of learning.
- Because, to me, education is important.
- I wouldn't be here if I really had a choice about it.

Personal: Motivation (16 –19

C. School

- (Enjoy school subscale)
- I enjoy school because I really enjoy studying in school.
- I enjoy school Because it's fun.
- I enjoy school Because I have to; it's required.
- I enjoy school Because there are a lot of interesting things to do in the school.

Contextual: Community (20–23)

III. Contextual

B. Community

(Peers subscale)

- I have friends here at school who help me a lot.
- There are friends that I could talk to about important decisions.
- There is a friend that I can depend on for help.
- I have no friends that I can depend on.

Contextual: Family Support (24 –27)

III. Contextual

(Family involvement and support subscale)

- The adults in my life (parents/guardians, mentors, etc.) have high expectations for my life after high school (such as expecting me to succeed in what I do).
- The adults in my life (parents/guardians, mentors, etc.) will be involved in my life and support me after I graduate from high school.
- The adults in my life (parents/guardians, mentors, etc.) have access to information about employment, college/technical school or other options for my life after high school.
- The adults in my life (parents/guardians, mentors, etc.) are an active part of my planning for my life after high school.

Contextual: Family Support (28 –35)

III. Contextual

B. Family: Support

(Family Support subscale)

- There is a family member that I could talk to about important decisions in my life.
- Members of my family recognize my abilities and skills.
- There is no one in my family who shares my interests and concerns.
- I am very close with at least one other member of my family.
- There is no one in my family with whom I feel comfortable talking about my problems.

- I can talk about school issues or concerns with a family member.
- There are family members that I can count on in an emergency.
- I have close relatives that I can talk to about important decisions.

Contextual: Family Support (36– 42)

III. Contextual

A. Family: Support

(Youth Development and Leadership Subscale)

- I have a mentor (an adult at school, through school-related activities, or activities outside of school).
- I have a peer-mentor or have been a peer mentor to another student (at school, through school-related activities, or activities outside of school).
- I am exposed to different types of role models through my school, school-related activities, or activities outside of school.
- I have learned about or know how to speak up for myself.
- I participate in extra-curricular school-related activities (like sports, band, community service, or school clubs).
- I participate in activities outside of school (like church youth group, 4-H, or Boys and Girls Club).
- I participated in opportunities that helped me develop my leadership skills.

Personal: Perseverance (43–46)

Perseverance

(undecided subscale)

- I still can't think of what I will do as an adult.
- I find it difficult to see clearly what I like and what interests me. This is why I can't decide yet.
- It isn't clear to me what is really important for me.
- Although I have thought about it for a long time, I still don't have a clear idea of what I want to do.

Personal: Resilience (47–58)

Resilience**:/** Perseverance

(Self-management subscale)

- (I can) Describe my skills and abilities to a college admissions officer.
- (I can) Dress in a way that will help me to be successful during a college admissions interview.
- Achieve a satisfying career.
- Identify and examine your personal skills and abilities.
- Know how to interact with your professors in order to better your college career.
- Think about what the college requires you to do and the quality of the school environment during a college interview.
- Prepare for an admissions interview.
- Plan and carry out your career goals.
- Learn about different college opportunities before searching for a college.
- Deal effectively with personal challenges (for example, lack of confidence, ability).

- Develop questions to ask admission officers about the college.
- Understand how your skills can be effectively used in a variety of admission college interviews.

Personal: Motivation (59–63)

(Use of Resources subscale)

- To reach my goals, I actively seek out support and guidance from others.
- I try and get the most I can from every learning opportunity.
- I have a number of plans for after high school to fall back on if the one I prefer doesn't work out (for example in my life, school, career).
- My family plays an important role in helping me plan for my life after high school (for example in my life, school, career).
- My school provides me with support in planning for my life after high school (for example in my life, school, career).

Personal: Motivation (Q64–73)

B. **Resilience**: Motivation

(Goal Setting and Pursuits Subscale)

- I generally like to have at least three long-term goals (next 5 to 10 years) for my future.
- I like to identify short-term goals (next 3 to 6 months) that will help me achieve my long-term goals (next 5 to 10 years).
- I rank my goals in terms of importance.

  I set timelines to meet my short-term goals.

- I like to create a step-by-step plan to achieve my goals.
- I consider the importance of my goals by thinking about positives (Pros) and negatives (Cons).
- I carefully plan out ways to successfully achieve my goals.
- I am doing things now that will help me prepare for my next educational /career opportunity.
- I am focusing on what I need to do to be successful in school.
- I seek out other learning/training opportunities to increase my skills.

Personal: **Grit Question grouping (Q71–80)**

Q74

- I have overcome setbacks to conquer an important challenge.
- » Not like me at all
- » Not much like me
- » Somewhat like me
- » Mostly Like me
- » Very much like me

Q75

- I have achieved a goal that took years of work.
- » Not like me at all
- » Not much like me
- » Somewhat like me
- » Mostly Like me

- » Very much like me

Q76

- *I am a hard worker.*
- » Not like me at all
- » Not much like me
- » Somewhat like me
- » Mostly Like me
- » Very much like me

Q77

- *I am diligent.*
- » Not like me at all
- » Not much like me
- » Somewhat like me
- » Mostly Like me
- » Very much like me

Q78

- *Setbacks don't discourage me.*
- » Not like me at all
- » Not much like me
- » Somewhat like me
- » Mostly Like me
- » Very much like me

Q79

- *I finish whatever I begin.*
- » Not like me at all
- » Not much like me
- » Somewhat like me
- » Mostly Like me
- » Very much like me

Q80

- I become interested in new pursuits every few months.
- » Not like me at all
- » Not much like me
- » Somewhat like me
- » Mostly Like me
- » Very much like me

Q81

- *New ideas and projects sometimes distract me from previous ones.*
- » Not like me at all
- » Not much like me
- » Somewhat like me
- » Mostly Like me
- » Very much like me
- **Q82**

- I have difficulty maintaining my focus on projects that take more than a few months to complete.
- Not like me at all
- Not much like me
- Somewhat like me
- Mostly Like me
- Very much like me

Q83

- I have been obsessed with a certain idea or project for a short time but later lost interest.
- Not like me at all
- Not much like me
- Somewhat like me
- Mostly Like me
- Very much like me

Q84

- I often set a goal but later choose to pursue a different one.
- » Not like me at all
- » Not much like me
- » Somewhat like me
- » Mostly Like me
- » Very much like me

A. Resilience: Grit (12 items)

Consistency of Interest
1. *I often set a goal but later choose to pursue a different one.*
2. *I have been obsessed with a certain idea or project for a short time but later lost interest.*
3. *I have difficulty maintaining my focus on projects that take more than a few months to complete.*
4. *New ideas and projects sometimes distract me from previous ones.*
5. My interests change from year to year.
6. I become interested in new pursuits every few months.
Perseverance of Effort
7. *I finish whatever I begin.*
8. *Setbacks don't discourage me.*
9. *I am diligent.*
10. *I am a hard worker*.
11. I have achieved a goal that took years of work.
12. I have overcome setbacks to conquer an important challenge.

Resilience

Motivation

(Goal Setting and Pursuits Subscale)

13. I generally like to have at least three long-term goals (next 5 to 10 years) for my future.

14. I like to identify short-term goals (next 3 to 6 months) that will help me achieve my long-term goals (next 5 to 10 years).
15. I rank my goals in terms of importance.
16. I set timelines to meet my short-term goals.
17. I like to create a step-by-step plan to achieve my goals.
18. I consider the importance of my goals by thinking about positives (Pros) and negatives (Cons).
19. I carefully plan out ways to successfully achieve my goals.
20. I am doing things now that will help me prepare for my next educational /career opportunity.
21. I am focusing on what I need to do to be successful in school.
22. I seek out other learning/training opportunities to increase my skills.

(Use of Resources subscale)

23. To reach my goals, I actively seek out support and guidance from others.
24. I try and get the most I can from every learning opportunity.
25. I have a number of plans for after high school to fall back on if the one I prefer doesn't work out (for example in my life, school, career).
18. My family plays an important role in helping me plan for my life after high school (for example in my life, school, career).
19. My school provides me with support in planning for my life after high school (for example in my life, school, career).

Resilience: Perseverance

(Self-management subscale)

20. (I can) Describe my skills and abilities to a college admissions officer.
21. (I can) Dress in a way that will help me to be successful during a college admissions interview.
22. Achieve a satisfying career.
23. Identify and examine your personal skills and abilities.
24. Know how to interact with your professors in order to better your college career.
25. Think about what the college requires you to do and the quality of the school environment during a college interview.
26. Prepare for an admissions interview.
27. Plan and carry out your career goals.
28. Learn about different college opportunities before searching for a college.
29. Deal effectively with personal challenges (for example, lack of confidence, ability).
30. Develop questions to ask admission officers about the college.
31. Understand how your skills can be effectively used in a variety of admission college interviews.

Perseverance: confidence/networking

(Career awareness subscale)

32. Identify and think about your college preferences.
33. Identify and think about things you would value in your college.
34. Clarify what you value most in a college.

35. Identify your personal values.

36. Join clubs or activities outside of schools that are related to your college interests. (Lack of info subscale)

37. Get an admissions interview through the help of friends and people that you know.

38. Search for college options through the help of friends and people that you know.

39. I am worried about the future and whether I will be able to achieve my college goals.

40. I am not sure whether I will have the resources needed to achieve my college goals.

41. I have trouble deciding what exactly I want to do (for example in my life, school, career).

42. It is hard for me to get motivated to actively pursue my goals.

43. I don't quite know whom to talk with to get clear ideas on a school to attend after I finish high school.

44. I have many school options but do not know how I should go about comparing them to one another.

45. I don't know what important things I should look for when I have to decide on which school is most suitable for me.

46. I find it difficult to choose what to do when I finish high school because there are too many things that interest me.

47. The schools I can attend and the jobs I can do when I finish high school are so many that it is difficult for me to decide and choose.

48. It is impossible for me to choose what I want after I leave school because I know very little about colleges/universities/technical schools and possible occupations.

49. I find it difficult to choose because I don't know much about what is studied in the different schools that I can attend when I finish high school.

Resilience: Perseverance

(undecided subscale)

50. I still can't think of what I will do as an adult.

51. I find it difficult to see clearly what I like and what interests me. This is why I can't decide yet.

52. It isn't clear to me what is really important for me.

53. Although I have thought about it for a long time, I still don't have a clear idea of what I want to do.

III. Contextual

A. Family: Support

(Youth Development and Leadership Subscale)

54. I have a mentor (an adult at school, through school-related activities, or activities outside of school).

55. I have a peer-mentor or have been a peer mentor to another student (at school, through school-related activities, or activities outside of school).

56. I am exposed to different types of role models through my school, school-related activities, or activities outside of school.

57. I have learned about or know how to speak up for myself.

58. I participate in extra-curricular school-related activities (like sports, band, community service, or school clubs).

59. I participate in activities outside of school (like church youth group, 4-H, or Boys and Girls Club).

60. I participated in opportunities that helped me develop my leadership skills.

B. Family: Support

(Family Support subscale)

61. There is a family member that I could talk to about important decisions in my life.

62. Members of my family recognize my abilities and skills.

63. There is no one in my family who shares my interests and concerns.

64. I am very close with at least one other member of my family.

65. There is no one in my family with whom I feel comfortable talking about my problems.

66. I can talk about school issues or concerns with a family member.

67. There are family members that I can count on in an emergency.

68. I have close relatives that I can talk to about important decisions.

(Family involvement and support subscale)

69. The adults in my life (parents/guardians, mentors, etc.) have high expectations for my life after high school (such as expecting me to succeed in what I do).

70. The adults in my life (parents/guardians, mentors, etc.) will be involved in my life and support me after I graduate from high school.

71. The adults in my life (parents/guardians, mentors, etc.) have access to information about employment, college/tech school or other options for my life after high school.

72. The adults in my life (parents/guardians, mentors, etc.) are an active part of my planning for my life after high school.

B. Community

(Peers subscale)

73. I have friends here at school who help me a lot.

74. There are friends that I could talk to about important decisions.

75. There is a friend that I can depend on for help.

76. I have no friends that I can depend on.

C. School

(Enjoy school subscale)

77. Because I really enjoy studying in school.

78. Because it's fun.

79. Because I have to; it's required.

80. Because there are a lot of interesting things to do in the school.

Attending school

(Meaning of school subscale)

81. Because, if I didn't, I will feel very bad.

82. So I can make lots and lots of money in the future.

83. Because education is important to achieve my goals.

84. So important people in my life won't be disappointed in me.

85. Because I don't want to let others down.

86. Because school subjects (math, science, etc.) are important to me

87. Because if I don't, I'll get punished.

88. Because I see the importance of learning.

89. Because, to me, education is important.

90. I wouldn't be here if I really had a choice about it.

Appendix J: Background of Survey Questionnaires

A. Grit

Duckworth developed and validated a self-report questionnaire called the Grit Scale. Their hypothesis is that grit would be unrelated to IQ, (Duckworth, 2007, p. 1089)

(I have gotten written approval from Dr. Duckworth's research team to utilize her grid in my research).

"Duckworth, Peterson, Matthews, and Kelly (2007) introduced the construct of *grit*, defined as trait-level perseverance and passion for long-term goals, and showed that grit predicted achievement in challenging domains over and beyond measures of talent. For instance, at the U.S. Military Academy, West Point, cadets higher in grit were less likely to drop out than their less gritty peers, even when controlling for SAT scores, high school rank, and a measure of Big Five conscientiousness. In four separate samples, grit was found to be either orthogonal to or slightly inversely correlated with intelligence.

Duckworth et al. (2007) proposed that grit is distinct from traditionally measured facets of Big Five conscientiousness in its emphasis on stamina. In particular, grit entails the capacity to sustain both effort and interest in projects that take months or even longer to complete. Grit is also related to but distinct from need for achievement (*n*Achievement: McClelland, 1961). Individuals high in grit do not swerve from their goals, even in the absence of positive feedback. In contrast, McClelland (1985) noted that

> There is ample evidence that the moderate challenge incentive is crucial for individuals high in *n*Achievement; they will work harder when this

> incentive is present than when it is not present; that is, when tasks are too easy *or too hard* [italics added]. (p. 814)

Duckworth et al. (2007) identified a two-factor structure for the original 12-item self-report measure of grit (Grit–O). This structure was consistent with the theory of grit as a compound trait comprising stamina in dimensions of interest and effort. However, the differential predictive validity of these two factors for various outcomes was not explored. Duckworth et al. did not examine whether either factor predicted outcomes better than did the other. Moreover, the model fit of the Grit–O (comparative fit index [CFI] [1] = .83; root mean square error of approximation [RMSEA] [2] = .11) suggested room for improvement.

This Research

We undertook this investigation to validate a more efficient measure of grit. In Study 1, we identified items for the Short Grit Scale (Grit–S) with the best overall predictive validity across four samples originally presented in Duckworth. In Study 2, we used confirmatory factor analysis to test the two-factor structure of the Grit–S in a novel Internet sample of adults, compared the relationships between the Grit–S and Grit–O and the Big Five personality dimensions, and examined predictive validity for career changes and educational attainment. In Study 3, we validated an informant version of the Grit–S and established consensual validity. In Study 4, we measured the 1-year, test–retest stability of the Grit–S in a sample of adolescents. Finally, in Studies 5 and 6, we further

tested the predictive validity of the Grit–S in two novel samples of West Point cadets and National Spelling Bee finalists.

Study 1

Conclusion

In Study 1, we aimed to extract a subset of items from the Grit–O to create a brief version (Grit–S). In selecting items, we considered predictive validity and replication of the two-factor structure of the Grit–O across four different samples of children and adults.

Method

Participants

We used four samples engaged in a variety of challenging domains across the life span. Two samples of United States Military Academy, West Point, cadets were collected by Duckworth et al. (2007). Cadets in the class of 2008 (*N*= 1,218) completed all 12 items of the Grit–O on entering West Point in June 2004. As is typical of West Point classes, 84% of the sample was male, and the mean age was 19.05 years (*SD* = 1.1). Cadets in the class of 2010 (*N*= 1,308) completed the Grit–O in June 2006 and were demographically similar to class of 2008 cadets. In both cadet samples, we considered attrition from West Point after the rigorous summer training session to assess each item's predictive validity.

Duckworth et al. (2007) recruited a sample of finalists in the 2005 Scripps National Spelling Bee (*N* = 175). This sample completed the Grit–O prior to the final competition.

Of the finalists, 48% were female (*M* age = 13.20 years, *SD* = 1.23). The outcome of interest in this sample was final round reached in the National Spelling Bee.

The fourth sample consisted of 139 Ivy League undergraduates (Duckworth et al., 2007). Of the participants, 69% were female. Participants in this sample completed an online version of the Grit–O in fall 2002. Self-reported GPA was the outcome of interest.

Procedure

We computed item-level correlations with outcomes for all four samples. Because we intended to consider predictive validity in each domain (West Point, the National Spelling Bee, and an elite university) separately and because mean correlations varied among domains, we chose not to compute average correlation coefficients for each item. Rather, we ranked the correlations within each domain and examined the number of domains in which each item was above the median in predicting an outcome. We then eliminated the two items from the Consistency of Interest and Perseverance of Effort subscales, which were most frequently below the median in prediction.

Results and Discussion

See Table 1 for item-level correlations. After excluding two items from each subscale, the resulting eight-item Grit–S displayed acceptable internal consistency, with alphas ranging from .73 to .83 across the four samples. As shown in Table 2, the four-item Consistency of Interest subscale showed adequate internal consistency as well, with

alphas ranging from .73 to .79. Alphas were somewhat lower for Perseverance of Effort, with values ranging from .60 to .78.

Table J-1: Item-level correlations with outcomes in Study 1.

Item	West Point Class of 2008 Retention	West Point Class of 2010 Retention	2005 National Spelling Bee Final Round [a]	Ivy League Undergra-duate GPA
Consistency of Interest				
1. *I often set a goal but later choose to pursue a different one.*	**.10**	.11	.12	.15
5. *I have been obsessed with a certain idea or project for a short time but later lost interest.*	**.08**	.08	-.05	.16
6. *I have difficulty maintaining my focus on projects that take more than a few months to complete.*	.04	.04	.07	.28
2. *New ideas and projects sometimes distract me from previous ones.*	.03	.03	.17	.13
4. My interests change from year to year.	.06	.09	.08	.03
3. I become interested in new pursuits every few months.	.04	-.03	.12	.01
Perseverance of Effort		.06	.12	.32
9. *I finish whatever I begin.*	**.13**	.06	.12	.32
10. *Setbacks don't discourage me.*	**.07**	.07	.11	.03
12. *I am diligent.*	**.11**	.00	.07	.31
11. *I am a hard worker.*	**.09**	.01	.09	.26
7. I have achieved a goal that took years of work.	.02	.01	.16	.17

8. I have overcome setbacks to conquer an important challenge.	.04	-.03	-.03	-.09

Note. Italicized items were retained in the Short Grit Scale. Boldface correlation coefficients

are above the median.

[a] Spearman's rho correlation coefficients.

Next, we ran four separate confirmatory factor analyses testing the two-factor model of grit with each sample. Consistency of Interest and Perseverance of Effort were first-order latent factors that loaded on a second-order latent factor called Grit. Structural equation models were run with AMOS Version 6.0 (Arbuckle, 2005) using the maximum-likelihood method. We used multiple goodness-of-fit indexes as recommended by Kline (2005) and Byrne (2001). Fit indexes for the Grit–S suggested a good fit in the West Point Class of 2008, χ^2 (19, N = 1,218) = 106.36, p < .001; RMSEA = .061 (90% confidence interval [CI] = .050–.073), CFI = .95. Similarly, fit statistics indicated a good fit for the Grit–S in the West Point Class of 2010, χ^2(19, N = 1,308) = 135.51, p < .001; RMSEA = .068 (90% CI = .058–.080), CFI = .95. We found a slightly worse fit for 2005 Scripps National Spelling Bee finalists, χ^2(19, N = 175) = 71.57, p < .001; RMSEA = .101 (90% CI = .077–.126), CFI = .86 and Ivy League undergraduates, χ^2(19, N = 139) = 43.63, p = .001; RMSEA = .097 (90% CI = .059–.135), CFI = .93, although the higher RMSEA and lower CFI values are likely due to inadequate sample size (Kline, 2005)."

Note. Grit–S = Short Grit Scale.

Table J-2 Internal consistencies for the Grit–S, the Persistence of Effort factor, and the Consistency of Interest factor in Study 1.

Sample	***N***	**Grit–S**	**Persistence of Effort**	**Consistency of Interest**
West Point 2008	1,218	.73	.60	.73
West Point 2010	1,308	.76	.65	.74
2005 National Spelling Bee	175	.80	.65	.76
Ivy League undergraduates	139	.83	.78	.79
Note. Grit–S = Short Grit Scale.				

Duckworth, A. L., & Quinn, P. D. (2009). Development and validation of the Short Grit Scale (GRIT–S). *Journal of personality assessment*, *91*(2), 166–174.

Overview – Purpose and Procedures of the Confirmatory Factor Analysis

The purpose of the Confirmatory Factor Analysis Report is to provide an examination of the structural property of seven scales for a pre-college sample of U.S. students in their sophomore and senior year of high school. In the following sections, a description of factor analysis and its components is provided. Thereafter, the findings from each scale Confirmatory Factor Analysis is presented.

Sampling Strategy

In the spring of 2009, a total of 1735 high school students in their 10th and 12th grade year of High School from 14 participating schools completed a survey about their well-being and educational experiences. Of the students completing the survey, 444 (25.6%) were in the 10th grade while 390 (22.5%) were in the 12th grade, and grade level was not provided for 901 (51.9%) students; 935 (53.9%) identified as female and 800 (46.1%) identified as male; 28 (1.6%) students identified as Asian, 486 (28%) as Black, 267 (15.4%) as Hispanic, 11 (0.6%) as Multiethnic, 71 (4.1%) as Native American, 1 (0.1%) as Pacific Islander, 870 (50.1%) as White, and information on ethnicity was not provided for 1 (0.1%) student; 576 (33.2%) were identified as free lunch status, 916 (52.8%) were identified as paid lunch status, 119 (6.9%) were identified as reduced lunch status, and lunch status was not provided for 124 (7.1%) students; 135 (7.8%) were identified as Special Ed; 308 indicated that they had an Individualized Education Plan (IEP).

Method and Procedures

Procedures: A Confirmatory Factor Analysis using Mplus 5.2 software was utilized to assess the factor structure of the scales (see below). The Chi-Square test statistic is frequently used to examine the exact fit of the factor structure(s) to the data. The Chi-Square (χ^2) test examines exact fit of the factor structure to the data. Often, due to difficulties related to sample size or data non-normality (see Martens, 2005), the Chi-Square test statistic is often rejected (χ^2), thus, making it an ill-fitted test of fit. Resultantly, in this analysis, additional indices that are less sensitive to sample size (e.g., Comparative Fit Index [CFI], Root Mean Square Error of Approximation [RMSEA], and Standardized Root Mean Square Residual [SRMR]) will be used to evaluate the factor

structure of the scales (see Hu & Bentler, 1999; Martens, 2005). Researchers suggest that good fit is indicated by a CFI of 0.95 or greater, a RMSEA of 0.06 or less, and a SRMR of 0.08 (Hu & Bentler, 1999; Martens, 2005). For all of the analyses the full sample of 1735 high school students was used to conduct the Confirmatory Factor Analyses. However, for the Quality Learning Experiences (Special Education/IEP Specific), the sample of students reporting an IEP (n = 308) was used.

The following scales were included in the analysis:

- **Quality Learning Experiences**
- **Career Search Self-Efficacy**
- **Goal-Setting (SOC)**
- **Motivation to Attend School**
- **Academic Self-Efficacy**
- **Career Decision-Making Difficulties**
- **Social Connections**

Goal-Setting (SOC)

The *SOC* scale is a 19-item instrument that measures activities related to educational and occupational goal attainment, and the perception of obstacles to achieving one's goals. The SOC scale is comprised of three subscales: Goal Setting and Pursuits, Use of Resources, and Challenges.

Confirmatory Factor Analysis:

An exploratory Factor Analysis was conducted on the Goal-Setting scale for a random sample of 300 U.S. pre-college students (**Howard, Lindwall, Olson, Schindler, & Jones, unpublished manuscript)**. The results indicated a 3-factor structure. Given that the exploratory factor analysis suggested a 3-factor structure of the Goal-Setting scale, a confirmatory factor analysis was employed to evaluate the 3-factor structure on a larger sample of U.S. pre-college students. The results indicated that the 3 factor structure provided a mediocre estimation of the true factor structure represented in the data. Thus, the subscale scores can be utilized and interpreted in future analyses. However, due to not meeting the conservative threshold established prior, caution should be used when interpreting findings based on subscales in future analyses.

Factors were not allowed to correlate. The $\chi^2 = 2294.948$ ($df = 149$; $p = 0.000$) was significant. Yet, the RMSEA (0.091; 90% CI = 0.088 – 0.094), CFI (0.885), and SRMR (0.058) indicated that the factor structure provided a mediocre estimation. Internal consistency for the subscales was all adequate with Chronbach's alpha coefficients of .93, .82, and .76 respectively.

Instrument Detail:

The *Goal Setting and Pursuits* subscale measures strategies for actively setting and pursuing one's goals as to increase one's chances of reaching them. Low scores indicate that one is unlikely to use selection and optimization strategies, while high scores indicate

that such active selection and optimization strategies are core to one's goal striving efforts.

1. I generally like to have at least three long-term goals (next 5 to 10 years) for my future.

2. I like to identify short-term goals (next 3 to 6 months) that will help me achieve my long-term goals (next 5 to 10 years).

3. I rank my goals in terms of importance.

4. I set timelines to meet my short-term goals.

5. I like to create a step-by-step plan to achieve my goals.

6. I consider the importance of my goals by thinking about positives (Pros) and negatives (Cons).

7. I carefully plan out ways to successfully achieve my goals.

8. I am doing things now that will help me prepare for my next educational /career opportunity.

9. I am focusing on what I need to do to be successful in school.

10. I seek out other learning/training opportunities to increase my skills.

The *Use of Resources* subscale describes the use of support from others and learning experiences as resources in the goal pursuit process. Low scores indicate either an unavailability of social support and learning support or a reluctance to rely on these resources, while high scores indicate active use of social and learning supports.

11. To reach my goals, I actively seek out support and guidance from others.

12. I try and get the most I can from every learning opportunity.

17. I have a number of plans for after high school to fall back on if the one I prefer doesn't work out (for example in my life, school, career).

18. My family plays an important role in helping me plan for my life after high school (for example in my life, school, career).

19. My school provides me with support in planning for my life after high school (for example in my life, school, career).

Instrument Detail:

The *Self-Management* subscale addresses a range of issues related to advanced preparation and planning tasks regarding personal preparedness. Students are asked about their confidence in identifying their work skills, learning about different career opportunities before searching for a job, and describing skills to an employer, among several other things. Individuals with high scores on this subscale view themselves as more skilled in the management of identifying and securing a job.

10. Describe your skills and abilities to an employer.

16. Dress in a way that will help you to be successful during a job interview.

21. Achieve a satisfying career.

22. Identify and examine your personal skills and abilities.

24. Know how to interact with your boss in order to better your career.

25. Think about what the job requires you to do and the quality of the work environment during a job interview.

26. Prepare for an interview.

27. Select helpful people at the workplace with whom to get to know.

28. Identify your work skills.

29. Plan and carry out your career goals.

31. Learn about different career or job opportunities before searching for a job.

32. Deal effectively with personal challenges (for example, lack of confidence, ability).

33. Develop questions to ask companies about the job.

34. Understand how your skills can be effectively used in a variety of jobs.

The *Career Awareness* subscale assesses a student's confidence in finding and identifying a career that would be best for him or herself. Students are asked about their confidence in identifying career preferences, what they value in a career, and identifying personal values. Individuals who score high on this subscale view themselves as confident in their awareness of careers and themselves.

5. Identify and think about your career preferences.

6. Identify and think about things you would value in your career.

7. Clarify what you value most in a career.

9. Identify your personal values.

14. Join clubs or activities outside of schools that are related to your career interests.

Instrument Detail:

The *Lack Information* subscale addresses a range of issues related to expressing a need for information in order to make a decision and not knowing when to decide or whom to approach to discuss educational and career issues. Individuals who score high on this subscale view themselves as lacking information, while those with low scores feel that they had sufficient information in order to make a decision.

6. I don't quite know who to talk with to get clear ideas on a school to attend after I finish high school.

7. I have many school options but do not know how I should go about comparing them to one another.

8. I don't know what important things I should look for when I have to decide on which school is most suitable for me.

9. I find it difficult to choose what to do when I finish high school because there are too many things that interest me.

12. The schools I can attend and the jobs I can do when I finish high school are so many that it is difficult for me to decide and choose.

14. It is impossible for me to choose what I want after I leave school because I know very little about colleges/universities/technical schools and possible occupations.

16. I find it difficult to choose because I don't know much about what is studied in the different schools that I can attend when I finish high school.

The *Undecided* subscale indicates themes of being unable to decide or lacking clarity in order to make decisions regarding their educational and career future. An individual with a higher score on this subscale is more likely to be undecided with respect to a future career, while students with low score have greater clarity about their education and occupational direction.

1. I still can't think of what I will do as an adult.

2. It is very difficult for me to decide on a future job for myself.

3. It is useless to think about a future job for myself. One way or another I will certainly find something to do.

5. I find it difficult to see clearly what I like and what interests me. This is why I can't decide yet.

13. It isn't clear to me what is really important for me.

15. Although I have thought about it for a long time, I still don't have a clear idea of what I want to do.

The *Youth Development and Leadership* subscale measures access to adult and peer mentors, and participation in school or community based extra-curricular activities. This

is assessed, for example, by questions regarding having an adult or peer mentor, participation in activities to develop leadership skills, and participation in extra-curricular and outside of school activities. High scores on this measure indicate greater access to mentors and school- or community-based activities to facilitate leadership skill development.

22. I have a mentor (an adult at school, through school-related activities, or activities outside of school).

23. I have a peer-mentor or have been a peer mentor to another student (at school, through school-related activities, or activities outside of school).

24. I am exposed to different types of role models through my school, school-related activities, or activities outside of school.

25. I have learned about or know how to speak up for myself.

26. I participate in extra-curricular school-related activities (like sports, band, community service, or school clubs).

27. I participate in activities outside of school (like church youth group, 4-H, or Boys and Girls Club).

28. I participated in opportunities that helped me develop my leadership skills.

Instrument Detail:

The *Family Support* subscale assesses perceptions of support from family members. For example, questions ask students if there are family members to whom they can go for

assistance with important life decisions, if there are family members who share similar interests and concerns, and if there are family members on which they can rely during an emergency. Students who score low on this subscale perceive a lack of family support relative to those who score high.

1. There is a family member that I could talk to about important decisions in my life.

2. Members of my family recognize my abilities and skills.

3R. There is no one in my family who shares my interests and concerns.

4. I am very close with at least one other member of my family.

5R. There is no one in my family with whom I feel comfortable talking about my problems.

6. I can talk about school issues or concerns with a family member.

7. There are family members that I can count on in an emergency.

18. I have close relatives that I can talk to about important decisions.

The *Family Involvement and Supports* subscale measures involvement of adult figures in students' personal, academic, and occupational future. This is assessed, for example, by questions regarding involvement of adults in supporting a student after high school, planning for life after high school, and having access to networks that may be useful for a student after high school. High scores on this measure indicate that students' have high adult involvement in the planning of their personal, academic, and occupational life after high school.

35. The adults in my life (parents/guardians, mentors, etc.) have high expectations for my life after high school (such as expecting me to succeed in what I do).

36. The adults in my life (parents/guardians, mentors, etc.) will be involved in my life and support me after I graduate from high school.

37. The adults in my life (parents/guardians, mentors, etc.) have access to information about employment, college/technical school or other options for my life after high school.

38. The adults in my life (parents/guardians, mentors, etc.) are an active part of my planning for my life after high school.

39. The adults in my life (parents/guardians, mentors, etc.) know how to access medical, peer, and professional networks for my life after high school.

The *Peer* subscale assesses perceptions of support from peers. For example, questions ask students about the availability to gain support from peers, and if there are friends they can trust as they make important life decisions. Students who score high on this subscale perceive greater availability of peers from which to gain support.

13. I have friends here at school who help me a lot.

14. There are friends that I could talk to about important decisions.

15. There is a friend that I can depend on for help.

16R. I have no friends that I can depend on.

Motivation to Attend School

The *Motivation to Attend School* scale is a 14-item measure that assesses driving forces in school attendance. An exploratory scale analysis was conducted on a sample of 4,922 U.S. high school students, which indicated a 2-factor structure (Success Highways, 2008a). This scale is comprised of two subscales: Enjoy School and Meaningful.

Confirmatory Factor Analysis:

A confirmatory factor analysis was employed to evaluate the 2-factor structure of the Motivation to Attend School scale. The results indicated that the 2-factor structure did not provide a fair estimation of the true factor structure represented in the data. Further, due to the internal consistency of the Enjoy School subscale, it is advised that the scale composite score rather than subscale score be used in future analyses.

The two factors were allowed to correlate. The $\chi^2 = 2598.072$ ($df = 76$; $p = 0.000$) was significant. Further, the RMSEA (0.138; 90% CI = 0.134 – 0.143), CFI (0.784), and SRMR (0.092) indicated that there were difficulties with the factor structure. Internal consistency for the Meaningful subscale and composite total were adequate with Cronbach's alpha coefficients of .81, and .82 respectively. However, the internal consistency of the Enjoy School subscale was not adequate with a Cronbach's alpha coefficient of .52.

Instrument Detail:

The *Enjoy School* subscale assesses motivation to attend school that is based on enjoying a particular course of study and school being perceived as fun and involving many things that are interesting. Students who score high on this subscale view themselves as motivated by enjoyment of school and school related activities.

1. Because I really enjoy studying in school.

6. Because it's fun.

7R. Because I have to; it's required.

11. Because there are a lot of interesting things to do in the school.

The *Meaning of School* subscale assesses students' motivation to attend school that is based upon personal and familial perceptions of school significance, and wanting to avoid negative consequences of due to not attending school. Students who score high on this subscale view themselves as motivated by personal or familial perceptions of school significance and are motivated to attend school in order to avoid an aversive consequence.

2. Because, if I didn't, I will feel very bad.

3. So I can make lots and lots of money in the future.

4. Because education is important to achieve my goals.

5. So important people in my life won't be disappointed in me.

8. Because I don't want to let others down.

9. Because school subjects (math, science, etc.) are important to me

10. Because if I don't, I'll get punished.

12. Because I see the importance of learning.

13. Because, to me, education is important.

14. I wouldn't be here if I really had a choice about it.

CHARTS, GRAPHS, AND TABLES

Table 4: Key Country Frequencies

Ethnicity	Country	Frequency	Cumulative Frequency	Cumulative Percent
Africa - Black	African, Nigerian, Somali, Sudanese, Cape Verdean, Ghanaian, Egyptian	8, 2, 2, 1, 2, 2, 1	18	9
Caribbean - Black	Barbadian, Guyanese, **Haitian**, Jamaican, St. Lucian, Trinidadian	1, 1, **13**, 4, 1, 2	22	11
Asian	Asian, Asian-American, Bangladeshi, **Chinese, Vietnamese**, Indian, Tibetan, Middle Eastern	20, 11, 1, **17, 10,** 2, 1, 3	65	33
Latino	Columbian, **Dominican,** Ecuadorean, Honduran, **Mexican**, Panamanian, Peruvian, Portuguese, Puerto Rican	1, **22**, 2, 2, **10,** 1, 2, 1, 9	50	25
White	Albanian, European,	3, 2	5	.025
Other		1	1	.005

Table 5: Frequency Table: (Race)

Race					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	American Indian or Alaska Native or Pacific Islander, Hispanic or Latino	1	.5	.5	.5
	Asian	74	37.2	37.2	37.7
	Black or African American	51	25.6	25.6	63.3
	Black or African American, Hispanic or Latino	1	.5	.5	63.8
	Black or African American, Other	2	1.0	1.0	64.8
	Black or African American, White	1	.5	.5	65.3
	Hispanic or Latino	51	25.6	25.6	91.0
	Hispanic or Latino, White	3	1.5	1.5	92.5
	Other	10	5.0	5.0	97.5
	White	5	2.5	2.5	100.0
	Total	199	100.0	100.0	

Table 6: Frequency: (Ethnicity)

Ethnicity, table				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	38	19.1	19.1	19.1
African	8	4.0	4.0	23.1
Albanian	3	1.5	1.5	24.6
Asian	20	10.1	10.1	34.7
Asian-American	11	5.5	5.5	40.2
Bangladeshi	1	.5	.5	40.7
Barbadian	1	.5	.5	41.2
Cape Verdean	2	1.0	1.0	42.2
Chinese	17	8.5	8.5	50.8
Colombian	1	.5	.5	51.3
Dominican	22	11.1	11.1	62.3
Ecuadorean	2	1.0	1.0	63.3
Egyptian	1	.5	.5	63.8
European	2	1.0	1.0	64.8
Ghanaian	2	1.0	1.0	65.8
Guyanese	1	.5	.5	66.3
Haitian	13	6.5	6.5	72.9
Honduran	2	1.0	1.0	73.9
Indian	2	1.0	1.0	74.9
Jamaican	4	2.0	2.0	76.9
Mexican	10	5.0	5.0	81.9
Middle Eastern	3	1.5	1.5	83.4
Nigerian	2	1.0	1.0	84.4
Other	1	.5	.5	84.9
Panamanian	1	.5	.5	85.4
Peruvian	2	1.0	1.0	86.4
Portuguese	1	.5	.5	86.9
Puerto Rican	9	4.5	4.5	91.5

	Somali	2	1.0	1.0	92.5
	St Lucian	1	.5	.5	93.0
	Sudanese	1	.5	.5	93.5
	Tibetan	1	.5	.5	94.0
	Trinidadian	2	1.0	1.0	95.0
	Vietnamese	10	5.0	5.0	100.0
	Total	199	100.0	100.0	

Table 7: Frequency - High School - November 13, 2015

lHigh School, table, 1 l					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Academy for Careers in Television and Film	2	1.0	1.0	1.0
	ACORN Community High School	2	1.0	1.0	2.0
	Air Force Academy High School	1	.5	.5	2.5
	Amundsen School	2	1.0	1.0	3.5
	Another Course to College	1	.5	.5	4.0
	Arts & Media Preparatory Academy	1	.5	.5	4.5
	Benjamin Banneker Academy	1	.5	.5	5.0
	Boston Arts Academy	1	.5	.5	5.5
	Boston Community Leadership Academy	5	2.5	2.5	8.0
	Boston Green Academy	2	1.0	1.0	9.0
	Boston Latin Academy	14	7.0	7.0	16.1
	Boston Latin School	9	4.5	4.5	20.6
	Boys and Girls High School	1	.5	.5	21.1
	Brighton High School	6	3.0	3.0	24.1
	Bronx High School for Law and Community Service	2	1.0	1.0	25.1
	Bronx Leadership Academy II High School	4	2.0	2.0	27.1
	Bronx Theatre High School	1	.5	.5	27.6
	Bronzeville Scholastic Institute School	1	.5	.5	28.1
	Brooklyn College Academy	1	.5	.5	28.6
	Burke High School	1	.5	.5	29.1
	Cambridge Rindge and Latin	1	.5	.5	29.6
	CATS Academy Boston	1	.5	.5	30.2
	Charlestown High School	1	.5	.5	30.7

Chelsea High School	3	1.5	1.5	32.2
Christ the King Jesuit College Prep	1	.5	.5	32.7
Clara Barton High School	1	.5	.5	33.2
Community Academy of Science and Health	1	.5	.5	33.7
Dorchester Academy	3	1.5	1.5	35.2
East Boston High School	1	.5	.5	35.7
Edward Kennedy Academy for Health Careers	1	.5	.5	36.2
Elizabeth Seton Academy	1	.5	.5	36.7
English High School	2	1.0	1.0	37.7
Excel High School	6	3.0	3.0	40.7
Expeditionary Learning School for Community Leaders	2	1.0	1.0	41.7
Fenway High School	2	1.0	1.0	42.7
Flushing International High School	1	.5	.5	43.2
Fontbonne Academy	1	.5	.5	43.7
Francis Lewis High School	2	1.0	1.0	44.7
Frank McCourt High School	1	.5	.5	45.2
Franklin Delano Roosevelt High School	1	.5	.5	45.7
George Washington Carver High School for the Sciences	1	.5	.5	46.2
Gregorio Luperon High School for Science and Mathematics	1	.5	.5	46.7
Gwendolyn Brooks College Preparatory Academy School	1	.5	.5	47.2
High School of Economics and Finance	1	.5	.5	47.7
High School of Telecommunication Arts and Technology	11	5.5	5.5	53.3
Hillcrest High School	2	1.0	1.0	54.3
Information Technology High School	1	.5	.5	54.8

Instituto Health Sciences Career Academy	1	.5	.5	55.3
International High School at Lafayette	1	.5	.5	55.8
International High School at Prospect Heights	2	1.0	1.0	56.8
Jacqueline Kennedy Onassis High School	2	1.0	1.0	57.8
John Dewey High School	1	.5	.5	58.3
Jones College Prep High School	1	.5	.5	58.8
Josiah Quincy Upper School	7	3.5	3.5	62.3
Knowledge and Power Preparatory Academy International High School (Kappa)	1	.5	.5	62.8
Lane Tech	2	1.0	1.0	63.8
Lincoln Sudbury High School	1	.5	.5	64.3
Madison Park High School	5	2.5	2.5	66.8
Malden High School	7	3.5	3.5	70.4
Manhattan / Hunter Science High School	1	.5	.5	70.9
Manhattan Center for Science and Mathematics	1	.5	.5	71.4
Manhattan International High School	2	1.0	1.0	72.4
Manhattan Village Academy	1	.5	.5	72.9
Midwood High School	1	.5	.5	73.4
Millennium High School	1	.5	.5	73.9
Milton Academy	1	.5	.5	74.4
Natick High School	1	.5	.5	74.9
New Mission High School	1	.5	.5	75.4
Noble Street Charter High School - Rowe Clarke	1	.5	.5	75.9
O'Bryant High School	12	6.0	6.0	81.9
Ogden Int'l School of Chicago	1	.5	.5	82.4

Performing Arts and Technology High School	1	.5	.5	82.9
Phillips Academy Landmark	1	.5	.5	83.4
Quincy High School	1	.5	.5	83.9
Saint Joseph Preparatory High School	1	.5	.5	84.4
School for International Studies	1	.5	.5	84.9
Sheepshead Bay High School	1	.5	.5	85.4
Snowden Int'l High School	2	1.0	1.0	86.4
South Shore International College Prep	1	.5	.5	86.9
Teachers Preparatory High School	1	.5	.5	87.4
TechBoston Academy	3	1.5	1.5	88.9
The Cinema School	1	.5	.5	89.4
University Heights Secondary School	1	.5	.5	89.9
Urban Action Academy	1	.5	.5	90.5
Vanguard High School	1	.5	.5	91.0
Von Steuben School	1	.5	.5	91.5
West Roxbury Academy	1	.5	.5	92.0
Whitney Young School	1	.5	.5	92.5
William Cullen Bryant High School	1	.5	.5	93.0
Williamsburg Charter High School	1	.5	.5	93.5
Worcester - Holy Name	1	.5	.5	94.0
Worcester- Doherty High School	3	1.5	1.5	95.5
Worcester- North High School	3	1.5	1.5	97.0
Worcester- South High	2	1.0	1.0	98.0
Worcester- University Park Campus School	1	.5	.5	98.5
Worcester- Vocational Technical	3	1.5	1.5	100.0
Total	199	100.0	100.0	

Table 8

Figure 4: High School GPA

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.93	3	1.5	1.6	1.6
	1.97	1	.5	.5	2.2
	2.27	1	.5	.5	2.7
	2.30	1	.5	.5	3.3
	2.37	1	.5	.5	3.8
	2.45	1	.5	.5	4.4
	2.50	1	.5	.5	4.9
	2.53	4	2.0	2.2	7.1
	2.57	1	.5	.5	7.7
	2.60	3	1.5	1.6	9.3
	2.63	4	2.0	2.2	11.5
	2.67	1	.5	.5	12.0
	2.70	1	.5	.5	12.6
	2.73	2	1.0	1.1	13.7
	2.77	3	1.5	1.6	15.3
	2.80	3	1.5	1.6	16.9
	2.83	1	.5	.5	17.5
	2.87	2	1.0	1.1	18.6
	2.90	3	1.5	1.6	20.2
	2.93	2	1.0	1.1	21.3
	3.00	1	.5	.5	21.9
	3.03	1	.5	.5	22.4
	3.07	9	4.5	4.9	27.3
	3.10	1	.5	.5	27.9
	3.13	2	1.0	1.1	29.0
	3.17	4	2.0	2.2	31.1
	3.20	2	1.0	1.1	32.2
	3.23	3	1.5	1.6	33.9
	3.27	1	.5	.5	34.4
	3.30	6	3.0	3.3	37.7
	3.33	3	1.5	1.6	39.3
	3.37	3	1.5	1.6	41.0
	3.38	1	.5	.5	41.5
	3.40	4	2.0	2.2	43.7

	3.43	1	.5	.5	44.3
	3.47	3	1.5	1.6	45.9
	3.50	1	.5	.5	46.4
	3.53	5	2.5	2.7	49.2
	3.57	10	5.0	5.5	54.6
	3.60	6	3.0	3.3	57.9
	3.63	3	1.5	1.6	59.6
	3.67	7	3.5	3.8	63.4
	3.70	5	2.5	2.7	66.1
	3.73	4	2.0	2.2	68.3
	3.77	5	2.5	2.7	71.0
	3.80	6	3.0	3.3	74.3
	3.83	4	2.0	2.2	76.5
	3.87	4	2.0	2.2	78.7
	3.90	4	2.0	2.2	80.9
	3.93	4	2.0	2.2	83.1
	3.97	6	3.0	3.3	86.3
	4.00	6	3.0	3.3	89.6
	4.03	2	1.0	1.1	90.7
	4.07	3	1.5	1.6	92.3
	4.10	2	1.0	1.1	93.4
	4.13	1	.5	.5	94.0
	4.17	2	1.0	1.1	95.1
	4.20	3	1.5	1.6	96.7
	4.27	2	1.0	1.1	97.8
	4.33	1	.5	.5	98.4
	4.37	1	.5	.5	98.9
	4.40	1	.5	.5	99.5
	4.47	1	.5	.5	100.0
	Total	183	92.0	100.0	
Missing	System	16	8.0		
Total		199	100.0		

Table 9 - College Attending (Final List) - November 13, 2015 –

College Attending (Final List) College Attending (Final List), table, 1					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Anna Maria College	1	.5	.5	.5
	Babson College	1	.5	.5	1.0
	Bates College	1	.5	.5	1.5
	Bentley University	2	1.0	1.0	2.5
	Boston College	4	2.0	2.0	4.5
	Boston University	**7**	3.5	3.5	8.0
	Brandeis TYP	1	.5	.5	8.5
	Brandeis University	1	.5	.5	9.0
	Bridgewater State University	6	3.0	3.0	12.1
	Brown University	1	.5	.5	12.6
	Bunker Hill Community College	4	2.0	2.0	14.6
	City Colleges of Chicago - Harold Washington College	1	.5	.5	15.1
	Clark University (MA)	2	1.0	1.0	16.1
	Coe College	1	.5	.5	16.6
	Colby-Sawyer College	1	.5	.5	17.1
	College of the Holy Cross	3	1.5	1.5	18.6
	Columbia College of Chicago	1	.5	.5	19.1
	Connecticut College	1	.5	.5	19.6
	CUNY - Baruch College	1	.5	.5	20.1
	CUNY - Borough of Manhattan Community College	1	.5	.5	20.6
	CUNY - Brooklyn College	3	1.5	1.5	22.1
	CUNY - Hostos Community College	1	.5	.5	22.6

CUNY - Hunter College	1	.5	.5	23.1
CUNY - John Jay College	5	2.5	2.5	25.6
CUNY - LaGuardia Community College	1	.5	.5	26.1
CUNY - Lehman College	2	1.0	1.0	27.1
CUNY - New York City College of Technology	**6**	3.0	3.0	30.2
CUNY - Queens College	2	1.0	1.0	31.2
CUNY - The City College of New York	5	2.5	2.5	33.7
CUNY - York College	2	1.0	1.0	34.7
DePaul University	1	.5	.5	35.2
Dominican University	1	.5	.5	35.7
Eastern Illinois University	1	.5	.5	36.2
Fitchburg State University	4	2.0	2.0	38.2
Framingham State University	3	1.5	1.5	39.7
Gustavus Adolphus College	1	.5	.5	40.2
Hamilton College	1	.5	.5	40.7
Haverford College	1	.5	.5	41.2
Ithaca College	3	1.5	1.5	42.7
Lawrence University	1	.5	.5	43.2
Lesley University	2	1.0	1.0	44.2
Massachusetts Institute of Technology	1	.5	.5	44.7
MCPHS University	1	.5	.5	45.2
Montclair State University	1	.5	.5	45.7
Muhlenberg College	1	.5	.5	46.2
New England Culinary Institute	1	.5	.5	46.7
New York Institute of Technology	1	.5	.5	47.2

New York University	1	.5	.5	47.7
North Central College	1	.5	.5	48.2
Northeastern Foundation Year	2	1.0	1.0	49.2
Northeastern University	5	2.5	2.5	51.8
Northern Illinois University	1	.5	.5	52.3
Quinsigamond Community College	1	.5	.5	52.8
Rhode Island College	1	.5	.5	53.3
Rice University	1	.5	.5	53.8
Russell Sage College	1	.5	.5	54.3
Rust College	1	.5	.5	54.8
Salem State University	2	1.0	1.0	55.8
Simmons College	3	1.5	1.5	57.3
Skidmore College	1	.5	.5	57.8
Smith College	1	.5	.5	58.3
Southern Illinois University – Edwardsville	1	.5	.5	58.8
St. John's University (NY)	2	1.0	1.0	59.8
Stonehill College	1	.5	.5	60.3
Suffolk University	5	2.5	2.5	62.8
SUNY – Albany	4	2.0	2.0	64.8
SUNY - Buffalo State College	3	1.5	1.5	66.3
SUNY - New Paltz	4	2.0	2.0	68.3
SUNY – Oneonta	1	.5	.5	68.8
SUNY – Oswego	1	.5	.5	69.3
SUNY – Potsdam	1	.5	.5	69.8
SUNY - Stony Brook	5	2.5	2.5	72.4
Syracuse University	1	.5	.5	72.9
Tufts University	1	.5	.5	73.4
U Mass – Amherst	**10**	5.0	5.0	78.4

	U Mass – Boston	**22**	11.1	11.1	89.4
	U Mass – Dartmouth	3	1.5	1.5	91.0
	U Mass – Lowell	3	1.5	1.5	92.5
	University of Illinois at Chicago	3	1.5	1.5	94.0
	Wellesley College	1	.5	.5	94.5
	Western Illinois University	1	.5	.5	95.0
	Westfield State University	2	1.0	1.0	96.0
	Wheaton College	4	2.0	2.0	98.0
	Wheelock College	2	1.0	1.0	99.0
	Williams College	1	.5	.5	99.5
	Worcester State University	1	.5	.5	100.0
	Total	199	100.0	100.0	

Table 10: Additional Organizations

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		20	10.1	10.1	10.1
	After School Matters	1	.5	.5	10.6
	Artists for Humanity,Freedom House	1	.5	.5	11.1
	Artists for Humanity,Let's Get Ready,UAspire	1	.5	.5	11.6
	Artists for Humanity,QuestBridge,UAspire	1	.5	.5	12.1
	Artists for Humanity,UAspire	1	.5	.5	12.6
	AVID	3	1.5	1.5	14.1
	AVID,Collegiate Success Institute,GEAR UP,Let's Get Ready	1	.5	.5	14.6
	AVID,Other	1	.5	.5	15.1
	AVID,Upward Bound - Worcester State	1	.5	.5	15.6
	BAHEC,Citizen Schools 8GA Alumni,Scholar-Athlete Zone,UAspire	1	.5	.5	16.1
	BAHEC,Scholar-Athlete Zone,Stepping Stone Foundation,UAspire	1	.5	.5	16.6
	BAHEC,UAspire	2	1.0	1.0	17.6
	BNY Mellon CityACCESS Teen Ambassadors,Scholar-Athlete Zone,UAspire,Upward Bound at UMass Boston	1	.5	.5	18.1
	Boston Debate League,Boston-Area YMCA Programs,Let's Get Ready,Scholar-Athlete Zone,Summer Search,UAspire,West End House	1	.5	.5	18.6

	Boston Debate League,BUILD Boston,Let's Get Ready,UAspire	1	.5	.5	19.1
	Boston Debate League,Let's Get Ready,UAspire	1	.5	.5	19.6
	Boston Debate League,Nelson Fellows,UAspire	1	.5	.5	20.1
	Boston Debate League,Summer Search,UAspire	2	1.0	1.0	21.1
	Boston Debate League,UAspire	1	.5	.5	21.6
	Boston Debate League,UAspire,Other	1	.5	.5	22.1
	Boston-Area YMCA Programs,Hyde Square Task Force,UAspire	1	.5	.5	22.6
	Boston-Area YMCA Programs,UAspire	2	1.0	1.0	23.6
	Boys & Girls Clubs of Boston	1	.5	.5	24.1
	Building Brighter Futures,Girls Inc.	1	.5	.5	24.6
	Cacique Youth Learning Program,Stepping Stone Foundation	1	.5	.5	25.1
	Center for Family Life (SCO)	1	.5	.5	25.6
	College Bound Initiative,College Summit,Sponors for Educational Opportunity (SEO)	1	.5	.5	26.1
	Crimson Summer Academy at Harvard,Scholar-Athlete Zone,UAspire	1	.5	.5	26.6
	Crimson Summer Academy at Harvard,UAspire	1	.5	.5	27.1

Appendix: Statistics

Table 11: Spearman's Rho Factor Chart

	Student who got admitted from selective school	Highest SAT	(personal) meaning of school	(personal) enjoying school	(personal) perseverance, undecided	(personal) resilience self-management	(personal) use of resources	(personal) goal setting and pursuits	(personal) grit	(contextual) peer	(contextual family involvement	(contextual) family support	(contextual) youth development and leadership	Sex	AGI	Race	BL GPA	# Office Visits
Student who got admitted from selective school	1.000	.379**	-.030	-.055	.129	-.078	-.146	.016	-.069	-.133	-.079	-.021	-.209**	.009	-.013	-.264**	.339**	.019
Sig. (2-tailed)	.	.000	.675	.450	.082	.313	.057	.830	.374	.069	.279	.772	.004	.904	.861	.000	.000	.788
N	198	180	198	188	182	171	171	171	169	188	188	188	188	198	198	198	182	198
Highest SAT	.379**	1.000	.030	.033	.006	-.028	.000	.027	-.046	.003	-.009	.065	-.016	.129	.032	-.450**	.379**	.157*
Sig. (2-tailed)	.000	.	.692	.670	.934	.730	.998	.740	.571	.967	.909	.397	.837	.084	.666	.000	.000	.035
N	180	181	181	173	167	156	156	156	155	173	173	173	173	181	181	181	166	181
(personal) meaning of school	-.030	.030	1.000	.405**	-.200**	.220**	.265**	.297**	.326**	.095	.130	.178*	.181*	.043	.152*	-.074	.065	.028
Sig. (2-tailed)	.675	.692	.	.000	.007	.004	.000	.000	.000	.195	.076	.014	.012	.549	.032	.298	.380	.690
N	198	181	199	189	183	172	172	172	170	189	189	189	189	199	199	199	183	199
(personal) enjoying school	-.055	.033	.405**	1.000	-.138	.342**	.396**	.370**	.271**	.205**	.330**	.219**	.359**	-.116	.077	.029	.067	.042
Sig. (2-tailed)	.450	.670	.000	.	.063	.000	.000	.000	.000	.005	.000	.002	.000	.113	.290	.693	.380	.567
N	188	173	189	189	183	172	172	172	170	189	189	189	189	189	189	189	173	189
(personal) perseverance, undecided	.129	.006	-.200**	-.138	1.000	-.347**	-.331**	-.328**	-.398**	-.165*	-.294**	-.341**	-.146*	.009	-.066	.025	.003	.051
Sig. (2-tailed)	.082	.934	.007	.063	.	.000	.000	.000	.000	.025	.000	.000	.049	.905	.371	.736	.967	.489
N	182	167	183	183	183	172	172	172	170	183	183	183	183	183	183	183	167	183
(personal) resilience self-management	-.078	-.028	.220**	.342**	-.347**	1.000	.657**	.697**	.524**	.228**	.368**	.414**	.634**	-.054	.227**	-.052	-.067	.023

(personal) resilience self-management	-.078	-.028	.220**	.342**	-.347**	1.000	.657**	.697**	.524**	.228**	.368**	.414**	.634**	-.054	.227**	-.052	-.067	.023
Sig. (2-tailed)	.313	.730	.004	.000	.000	.	.000	.000	.000	.003	.000	.000	.000	.482	.003	.495	.402	.768
N	171	156	172	172	172	172	172	172	170	172	172	172	172	172	172	172	157	172
(personal) use of resources	-.146	.000	.265**	.396**	-.331**	.657**	1.000	.592**	.463**	.280**	.482**	.541**	.522**	-.057	.101	-.016	-.091	-.015
Sig. (2-tailed)	.057	.998	.000	.000	.000	.000	.	.000	.000	.000	.000	.000	.000	.458	.187	.837	.256	.840
N	171	156	172	172	172	172	172	172	170	172	172	172	172	172	172	172	157	172
(personal) goal setting and pursuits	.016	.027	.297**	.370**	-.328**	.697**	.592**	1.000	.540**	.162*	.334**	.389**	.492**	-.067	.161*	-.091	-.039	.036
Sig. (2-tailed)	.830	.740	.000	.000	.000	.000	.000	.	.000	.034	.000	.000	.000	.381	.035	.233	.628	.641
N	171	156	172	172	172	172	172	172	170	172	172	172	172	172	172	172	157	172
(personal) grit	-.069	-.046	.326**	.271**	-.398**	.524**	.463**	.540**	1.000	.226**	.312**	.393**	.447**	-.078	.086	-.059	.018	.064
Sig. (2-tailed)	.374	.571	.000	.000	.000	.000	.000	.000	.	.003	.000	.000	.000	.314	.264	.448	.827	.410
N	169	155	170	170	170	170	170	170	170	170	170	170	170	170	170	170	155	170
(contextual) peer	-.133	.003	.095	.205**	-.165*	.228**	.280**	.162*	.226**	1.000	.369**	.358**	.265**	.034	.164*	-.017	.043	.100
Sig. (2-tailed)	.069	.967	.195	.005	.025	.003	.000	.034	.003	.	.000	.000	.000	.644	.024	.819	.579	.172
N	188	173	189	189	183	172	172	172	170	189	189	189	189	189	189	189	173	189
(contextual) family involvement	-.079	-.009	.130	.330**	-.294**	.368**	.482**	.334**	.312**	.369**	1.000	.505**	.324**	-.102	.103	-.009	-.005	.046
Sig. (2-tailed)	.279	.909	.076	.000	.000	.000	.000	.000	.000	.000	.	.000	.000	.163	.158	.898	.951	.532
N	188	173	189	189	183	172	172	172	170	189	189	189	189	189	189	189	173	189
(contextual) family support	-.021	.065	.178*	.219**	-.341**	.414**	.541**	.389**	.393**	.358**	.505**	1.000	.244**	.047	.098	.056	.019	-.031
Sig. (2-tailed)	.772	.397	.014	.002	.000	.000	.000	.000	.000	.000	.000	.	.001	.521	.182	.442	.800	.670
N	188	173	189	189	183	172	172	172	170	189	189	189	189	189	189	189	173	189
(contextual) youth development and leadership	-.209**	-.016	.181*	.359**	-.146*	.634**	.522**	.492**	.447**	.265**	.324**	.244**	1.000	-.078	.139	.035	-.065	.013

Sig. (2-tailed)	.004	.837	.012	.000	.049	.000	.000	.000	.000	.000	.000	.001	.	.284	.057	.631	.392	.861
N	188	173	189	189	183	172	172	172	170	189	189	189	189	189	189	189	173	189
Sex	.009	.129	.043	-.116	.009	-.054	-.057	-.067	-.078	.034	-.102	.047	-.078	1.000	-.058	-.140*	.057	.045
Sig. (2-tailed)	.904	.084	.549	.113	.905	.482	.458	.381	.314	.644	.163	.521	.284	.	.419	.049	.444	.530
N	198	181	199	189	183	172	172	172	170	189	189	189	189	199	199	199	183	199
AGI	-.013	.032	.152*	.077	-.066	.227**	.101	.161*	.086	.164*	.103	.098	.139	-.058	1.000	-.014	.022	.140*
Sig. (2-tailed)	.861	.666	.032	.290	.371	.003	.187	.035	.264	.024	.158	.182	.057	.419	.	.842	.771	.049
N	198	181	199	189	183	172	172	172	170	189	189	189	189	199	199	199	183	199
Race	-.264**	-.450**	-.074	.029	.025	-.052	-.016	-.091	-.059	-.017	-.009	.056	.035	-.140*	-.014	1.000	-.351**	-.201**
Sig. (2-tailed)	.000	.000	.298	.693	.736	.495	.837	.233	.448	.819	.898	.442	.631	.049	.842	.	.000	.004
N	198	181	199	189	183	172	172	172	170	189	189	189	189	199	199	199	183	199
BL GPA	.339**	.379**	.065	.067	.003	-.067	-.091	-.039	.018	.043	-.005	.019	-.065	.057	.022	-.351**	1.000	.216**
Sig. (2-tailed)	.000	.000	.380	.380	.967	.402	.256	.628	.827	.579	.951	.800	.392	.444	.771	.000	.	.003
N	182	166	183	173	167	157	157	157	155	173	173	173	173	183	183	183	183	183
# Office Visits	.019	.157*	.028	.042	.051	.023	-.015	.036	.064	.100	.046	-.031	.013	.045	.140*	-.201**	.216**	1.000
Sig. (2-tailed)	.788	.035	.690	.567	.489	.768	.840	.641	.410	.172	.532	.670	.861	.530	.049	.004	.003	.
N	198	181	199	189	183	172	172	172	170	189	189	189	189	199	199	199	183	199

Table 12: Cronbach's R for Scales

Case Processing Summary

		N	%
Cases	Valid	199	100.0
	Excluded[a]	0	.0
	Total	199	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.910	4

Frequency Table

1=female,0=male

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	46	23.1	23.1	23.1
	female	153	76.9	76.9	100.0
	Total	199	100.0	100.0	

dummy variable for AGI

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	=<40000	170	85.4	85.4	85.4
	>40000	29	14.6	14.6	100.0
	Total	199	100.0	100.0	

dummy variable for Race

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	White and Asian	79	39.7	39.7	39.7
	Black, Hispanic (Latino), and Other	120	60.3	60.3	100.0
	Total	199	100.0	100.0	

Scale: Meaning of School

Case Processing Summary

		N	%
Cases	Valid	189	95.0
	Excluded[a]	10	5.0
	Total	199	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.643	10

Scale: Enjoy School

Case Processing Summary

		N	%
Cases	Valid	189	95.0
	Excluded[a]	10	5.0
	Total	199	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.649	4

Scale: Resilience and Self-management

Case Processing Summary

		N	%
Cases	Valid	199	100.0
	Excluded[a]	0	.0
	Total	199	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.985	12

Scale: use of resources

Case Processing Summary

		N	%
Cases	Valid	199	100.0
	Excluded[a]	0	.0
	Total	199	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.936	5

Scale: Goal setting and pursuits

Case Processing Summary

		N	%
Cases	Valid	199	100.0
	Excluded[a]	0	.0
	Total	199	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.976	10

Scale: Grit

Case Processing Summary

		N	%
Cases	Valid	169	84.9
	Excluded[a]	30	15.1
	Total	199	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.771	11

Correlations

		Sex	AGI	Race	Highest SAT	(personal) meaning of school	(personal) enjoying school	(personal) undecided	(personal) resilience self-management	(personal) use of resources	(personal) goal setting and pursuits	(personal) grit	(contextual) peer	(contextual) family involvement	(contextual) family support	(contextual) youth development and leadership	# Office Visits	Number_B LCP	Student who got admitted from selective school
	Pearson Correlation	1	-.058	-.140*	.132	.047	-.115	.010	-.046	-.051	-.058	-.086	.043	-.087	.025	-.070	.037	.134	.009
	Sig. (2-tailed)		.419	.049	.076	.506	.115	.896	.552	.503	.446	.266	.559	.236	.728	.337	.603	.075	.904
	N	199	199	199	181	199	189	183	172	172	172	170	189	189	189	189	199	179	198
	Pearson Correlation	-.058	1	-.014	.040	.149*	.079	-.083	.227**	.112	.135	.089	.158*	.095	.075	.153*	.129	.153*	-.013
	Sig. (2-tailed)	.419		.842	.597	.035	.281	.263	.003	.144	.078	.249	.030	.195	.305	.036	.069	.041	.861
	N	199	199	199	181	199	189	183	172	172	172	170	189	189	189	189	199	179	198
	Pearson Correlation	-.140*	-.014	1	-.451**	-.069	.052	.019	-.046	-.031	-.095	-.057	.034	.021	.103	.038	-.161*	.088	-.264**
	Sig. (2-tailed)	.049	.842		.000	.332	.479	.794	.549	.682	.213	.461	.642	.775	.158	.608	.023	.242	.000
	N	199	199	199	181	199	189	183	172	172	172	170	189	189	189	189	199	179	198
,T	Pearson Correlation	.132	.040	-.451**	1	.039	.041	-.014	-.005	.003	.020	-.054	-.089	.004	.043	-.033	.131	-.010	.379**
	Sig. (2-tailed)	.076	.597	.000		.598	.595	.860	.950	.970	.808	.506	.244	.962	.576	.668	.079	.898	.000
	N	181	181	181	181	181	173	167	156	156	156	155	173	173	173	173	181	175	180
	Pearson Correlation	.047	.149*	-.069	.039	1	.467**	-.243**	.244**	.317**	.317**	.333**	.068	.113	.150*	.204**	-.003	.018	-.007
	Sig. (2-tailed)	.506	.035	.332	.598		.000	.001	.001	.000	.000	.000	.355	.121	.039	.005	.969	.807	.917
	N	199	199	199	181	199	189	183	172	172	172	170	189	189	189	189	199	179	198
hool	Pearson Correlation	-.115	.079	.052	.041	.467**	1	-.177*	.352**	.455**	.386**	.282**	.186*	.327**	.235**	.368**	.063	-.070	-.059

hool	Pearson Correlation	-.115	.079	.052	.041	.467**	1	-.177*	.352**	.455**	.386**	.282**	.186*	.327**	.235**	.368**	.063	-.070	-.059
	Sig. (2-tailed)	.115	.281	.479	.595	.000		.017	.000	.000	.000	.000	.011	.000	.001	.000	.390	.365	.424
	N	189	189	189	173	189	189	183	172	172	172	170	189	189	189	189	189	171	188
	Pearson Correlation	.010	-.083	.019	-.014	-.243**	-.177*	1	-.347**	-.342**	-.320**	-.362**	-.144	-.250**	-.306**	-.133	.056	-.035	.120
	Sig. (2-tailed)	.896	.263	.794	.860	.001	.017		.000	.000	.000	.000	.051	.001	.000	.072	.454	.658	.106
	N	183	183	183	167	183	183	183	172	172	172	170	183	183	183	183	183	166	182
elf-	Pearson Correlation	-.046	.227**	-.046	-.005	.244**	.352**	-.347**	1	.684**	.692**	.506**	.201**	.325**	.359**	.628**	.003	-.103	-.076
nt	Sig. (2-tailed)	.552	.003	.549	.950	.001	.000	.000		.000	.000	.000	.008	.000	.000	.000	.965	.199	.325
	N	172	172	172	156	172	172	172	172	172	172	170	172	172	172	172	172	157	171
use of	Pearson Correlation	-.051	.112	-.031	.003	.317**	.455**	-.342**	.684**	1	.593**	.448**	.283**	.479**	.512**	.504**	-.030	-.060	-.148
	Sig. (2-tailed)	.503	.144	.682	.970	.000	.000	.000	.000		.000	.000	.000	.000	.000	.000	.694	.458	.054
	N	172	172	172	156	172	172	172	172	172	172	170	172	172	172	172	172	157	171
goal	Pearson Correlation	-.058	.135	-.095	.020	.317**	.386**	-.320**	.692**	.593**	1	.539**	.157*	.272**	.355**	.500**	.027	-.034	.004
	Sig. (2-tailed)	.446	.078	.213	.808	.000	.000	.000	.000	.000		.000	.040	.000	.000	.000	.728	.670	.955
	N	172	172	172	156	172	172	172	172	172	172	170	172	172	172	172	172	157	171
grit	Pearson Correlation	-.086	.089	-.057	-.054	.333**	.282**	-.362**	.506**	.448**	.539**	1	.216**	.269**	.338**	.433**	.030	-.062	-.054
	Sig. (2-tailed)	.266	.249	.461	.506	.000	.000	.000	.000	.000	.000		.005	.000	.000	.000	.702	.440	.483
	N	170	170	170	155	170	170	170	170	170	170	170	170	170	170	170	170	156	169
) peer	Pearson Correlation	.043	.158*	.034	-.089	.068	.186*	-.144	.201**	.283**	.157*	.216**	1	.387**	.382**	.317**	.058	.140	-.140
	Sig. (2-tailed)	.559	.030	.642	.244	.355	.011	.051	.008	.000	.040	.005		.000	.000	.000	.426	.068	.056
	N	189	189	189	173	189	189	183	172	172	172	170	189	189	189	189	189	171	188
)	Pearson Correlation	-.087	.095	.021	.004	.113	.327**	-.250**	.325**	.479**	.272**	.269**	.387**	1	.516**	.341**	.003	-.024	-.085

[i] As referenced, upper-class advantages cross racial lines and can be found among White and Black students.

[ii] Elite schools often have acceptance rates under 20%.

[iii] As referenced, upper-class advantages cross-racial lines and can be found among White and Black students.

[iv] The Upper class is about 1 to 5% of the population. Upper class households make approximately $150,000+ year (the 5%), or over $250,000 a year (the 1%). The upper middle class has an income of $100,000 or more annually and is the top one-third of U.S. incomes. The lower middle class earn between $32,500 and $60,000. (Alhanati, 2012)

[v] Once more, Caribbean families often embody upper-class sensibilities, my own parents who hail from Belize read the NY Times, US News and World Report on a regular basis.

[vi] A Brooks male 2010 graduate noted there were approximately 2 guidance counselors for 99 students.

[viii] Gullat also suggests that relationships with diverse churches can be an ideal outreach center for selective schools to form early mentoring partnerships and informational sessions for congregants who cross a broad spectrum of ethnicities and classes.

[ix] Interview with Andrew MacKenzie, Director of Evaluation, 4/23/14

[x] Bottomline document review

[xii] The organization defines Low-Income as a family of four whose income is less than $40,000.

[xiii] It is important to note the majority of students are still privileged, upper class candidates, but there are also generous financial aid policies that make admission accessible for intellectually strong students with families that earn less than 75K.) Interview with Parent of Exeter student, 2014

[xiv] As referenced, upper-class advantages cross racial lines and can be found among White and Black students

[xv] I recall an APPAM summer graduate school intervention at attended at SUNY Stonybrook, that had a rigorous calculus component to prepare for the GMAT (Graduate Management Admissions Test) or GRE, Graduate Record Examination. Upon reflection, this remained a key component to my admission to the Wharton School of the University of Pennsylvania.

BIBLIOGRAPHY

Alhanati, Joao. (2012). Which Income Class are you? *San Francisco Chronicle*.

Allen, W., R. Kimura-Walsh, E., Griffin, K. A. (2009). *Towards a brighter tomorrow college barriers, hopes and plans of Black, Latino/a and Asian American students in California.* Charlotte, NC. IAP.

Arroyo, C. G., & Zigler, E. (1995). Racial Identity, academic achievement, and the psychological well-being of economically disadvantaged adolescents. *Journal of Personality and Social Psychology, 69*, 903–914.

Avery, C., Fairbanks, A., & Zeckhauser, R. (2003). *The early admissions game: Joining the elite*. Cambridge, Mass.: Harvard University Press.

Avery, Christopher, Kane, Thomas J. (2004) *Student Perceptions of College Opportunities the Boston COACH Program.* College Choices: The economics of where to go, when to go, and how to pay for it. University of Chicago Press.

Baum, S., & Flores, S. M. (2011). Higher education and children in immigrant families. *The Future of Children*, *21*(1), 171–193.

Best Colleges - US News & World Report, 2015 edition, U.S. News & World Report L.P. Washington, DC, 2014

Begay, Karen Francis (2016) *Native American Students in Higher Education - The Past, Present and Future*, Higher Ed Careers.

Bial, D., & Rodriguez, A. (2007). Identifying a diverse student body: Selective college admissions and alternative approaches. *New Directions for Student Services*, (118), 17–30.

Blankenship, A.B., Breen, G. E., Dutka, A. (1993) *State of The Art of Marketing Research*. NTC Business Books, Chicago, Ill.

Blumenstyk, G. (2014). *American Higher Education in Crisis? What Everyone Needs to Know*. Oxford University Press, USA.

Bogenschneider, K. (1997). Parental involvement in adolescent schooling: A proximal process with transcontextual validity. *Journal of Marriage and the Family*, *59*(3), 718–733.

Borman, G. D., & Overman, L. T. (2004). Academic resilience in mathematics among poor and minority students. *The Elementary School Journal*, *104*(3), 177–195

Bowen, W. G., & Bok, D. C. (1998). *The shape of the river: Long-term consequences of considering race in college and university admissions*. Princeton, N.J.: Princeton University Press.

Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist*, *32*(7), 513.

Bronfenbrenner, U., & Ceci, S. J. (1994). Nature-nurture reconceptualized in developmental perspective: A bioecological model. *Psychological Review*, *101*(4), 568.

Burd, S. (2003). Programs for disadvantaged students feud over their futures. *Chronicle of Higher Education*, *49*(27), A21–A22.

Bourdieu, P., & Passeron, J. C. (1977). *Reproduction in education, culture and society*. Trans. Richard Nice. London: SAGE Publications.

Carnevale, A. P., & Rose, S. J. (2003). Socioeconomic status, race/ethnicity, and selective college admissions. In R.D. Kahlenberg (ed.) *America's Untapped Resource: Low-Income Students in Higher Education*. (pp. 101–156). The Century Foundation.

Carnevale, A. P., & Strohl, J. (2013). *Separate and unequal: How higher education reinforces the intergenerational reproduction of White racial privilege.* Georgetown University, Center on Education and the Workforce. Retrieved from https://cew.georgetown.edu/wp-content/uploads/2014/11/SeparateUnequal.FR_.pdf

Carey, L. (1991). *Black Ice*. New York, NY. First Vintage Books.

Cates, J. T., & Schaefle, S. E. (2011). The relationship between a college preparation program and at-risk students' college readiness. *Journal of Latinos and Education*, *10*(4), 320–334.

Chavous, T. M., Bernat, D. H., Schmeelk‐Cone, K., Caldwell, C. H., Kohn-Wood, L., & Zimmerman, M. A. (2003). Racial identity and academic attainment among African American adolescents. *Child Development*, *74*(4), 1076–1090.

Charles, C. Z., Fischer, M. J., Mooney, M. A., & Massey, D. S. (2009). Affirmative-Action Programs for Minority Students: Right in Theory, Wrong in Practice. *The Chronicle of Higher Education*, 55.

Cherng, H. Y. S., Calarco, J. M., & Kao, G. (2013). Along for the ride: Best friends' resources and adolescents' college completion. *American Educational Research Journal*, 50(1), 76–106

Close, W., & Solberg, S. (2008). Predicting achievement, distress, and retention among lower-income Latino youth. *Journal of Vocational Behavior*, *72*(1), 31–42.

Coleman, H. L., Wampold, B. E., & Casali, S. L. (1995). Ethnic minorities' ratings of ethnically similar and European American counselors: A meta-analysis. *Journal of Counseling Psychology*, *42*(1), 55.

Coleman, H.L.K., Casali, S.B., Wampold, B.E. (2001). Adolescent strategies for coping with cultural diversity. *Journal of Counseling & Development, 79(3),* 356–364.

Coleman, H.L.K., (2006). Minority student achievement: A resilient outcome? In Zinga, D. (ed.). *Navigating Multiculturalism: Negotiating Change* (pp. 296–326). Cambridge Scholars Press.

Cooper-Gibson, S. (2011). Sourcing the Persistence: A Portrait of Helen Cromer Cooper. Unpublished doctoral dissertation, Boston University.

Cose, E., & Cose, E. (1993). *The rage of a privileged class*. New York: New York: HarperCollins.

Creswell, J. W. (2008). *Research design: Qualitative, quantitative, and mixed methods approaches*. SAGE Publications, Incorporated.

Dale, Stacy Berg, and Alan B. Krueger (1999). *Estimating the payoff to attending a more selective college: An application of selection on observables and unobservables*. NBER Working Paper No. 7322.

Darlington, Y., & Scott, D. (2003). *Qualitative research in practice: Stories from the field*. Allen & Unwin.

Da Silva, C. D., Huguley, J. P., Kakli, Z., & Rao, R. (eds.) (2007). *The Opportunity Gap: Achievement and Inequality in Education*. Cambridge, MA: Harvard Education Press.

David, Karen (1990). Toward a Political-Organizational Model of Gatekeeping: The Case of Elite Colleges, *Sociology of Education*, *63*(4), 227–240.

DeParle, J. (2012). For poor, leap to college often ends in a hard fall. *The New York Times*, *6*.

Diamond, J. B. (2006). Still separate and unequal: Examining race, opportunity, and school achievement in" integrated" suburbs. *The Journal of Negro Education*, *75*(3), 495–505.

Duckworth, A. L., Peterson, C., Matthews, M. D., & Kelly, D. R. (2007). Grit: Perseverance and passion for long-term goals. *Journal of Personality and Social Psychology, 92*(6), 1087.

Duckworth, A. L., & Quinn, P. D. (2009). Development and validation of the Short Grit Scale (GRIT–S). *Journal of Personality Assessment, 91*(2), 166–174.

Edley, C. F., & Edley, C. F., 1953- (1996). *Not all Black and White: Affirmative Action, Race, and American Values*. New York, NY: Hill and Wang.

England, P., & Farkas, G. (1986). *Households, Employment, and Gender: A Social, Economic, and Demographic View.* Adline Publishing Co.

Evan, A., Gray, T., & Olchefske, J. (2006). *The Gateway to Student Success in Mathematics and Science: A Call for Middle School Reform; The Research and Its Implications.* Washington, DC: American Institutes for Research.

Ferguson, A. (1966). *An Essay on the History of Civil Society.* Edinburgh, England: Edinburgh University Press (first published 1767).

Fordham, S. & Ogbu, J., 1993. Black students' school success: Coping with the burden on "acting white." *The Urban Review, 18*(3), 176–206.

Gándara, P. & Bial, D. (1999). *Paving the way to higher education: K–12 intervention programs for underrepresented youth (draft).* Washington, DC National Postsecondary Education Cooperative, National Center for Education Statistics.

Gillis, S. A., & Sedivy, S. K. (2008). Technical validation study for Success Highways. Retrieved from http://www.scholarcentric.com/research/SH_ValidationStudy_FNL.pdf

Golden, D. (2006). *The price of admission: How America's ruling class buys its way into elite colleges—and who gets left outside the gates*. New York: Crown Publishers.

Graham, L., & Graham, L. (1999). *Our kind of people: Inside America's Black upper class*. New York: New York: HarperCollins.

Gullat, Yvette, Jan, Wendy, (2003) *How do Pre-Collegiate Academic Outreach Programs Impact College-Going among Underrepresented Students?* Office of the President, University of California, Pathways to College Network.

Hamrick, Florence A., Stage, Frances K. (2004). College Predisposition at High-Minority Enrollment, Low-Income Schools. *The Review of Higher Education, 27*(2), 151–168.

Jacob, Brian A. (2002). *Where the boys aren't: Non-cognitive skills, returns to school and the gender gap in higher education.* NBER Working Paper No. 8964.

Jimerson, S. R., Campos, E., & Greif, J. L. (2003). Toward an understanding of definitions and measures of school engagement and related terms. *The California School Psychologist*, *8*(1), 7–27.

Joseph, Lawrence B. (2001). *Education Policy for the 21st Century: Challenges and Opportunities in Standards-Based Reform*. A Chicago Assembly Book.

Kahlenberg, R. D. (2010). *Affirmative Action for the rich: Legacy preferences in college admissions*. New York: Century Foundation Press.

Karen, D. (1991). The politics of class, race, and gender: access to high education in the United States, 1960–1986. *American Journal of Education*, *99*(2), 208 –237.

Kean, S. (2006, Sept. 15). Report blames college practices for limiting access of minority and low-income students. *Chronicle of Higher Education.* Retrieved from http://www.chronicle.com/article/Report-Blames-College/10784

Kozol, J. (2006). *The shame of the nation: The restoration of apartheid schooling in America*. Three Rivers Press.

Lacy, K. R. (2007). *Blue-chip black: Race, class, and status in the new black middle class*. University of California Press.

Ladd, G. W., Kochenderfer-Ladd, B., Visconti, K. J., Ettekal, I., Sechler, C. M., & Cortes, K. I. (2013). Grade-school children's social collaborative skills: Links with partner preference and achievement. *American Educational Research Journal*, *51*(1), doi: 10.3102/0002831213507327.

LaFromboise, T., Coleman, H. L., & Gerton, J. (1993). Psychological impact of biculturalism: evidence and theory. *Psychological Bulletin*, *114*(3), 395.

LaGuardia, Armando. (1998) A Survey of School/College Partnerships for Minority and Disadvantaged Students. *The High School Journal*, *82*(2), 97–110.

Landry, B., & Landry, B. (1987). *The new Black middle-class*. Berkeley, CA: University of California Press.

Laird, 2005, B. (2005). *The case for Affirmative Action in University Admissions*. Bay Tree Publishing.

Lederman, D. (2013, July 31). Higher Ed: Engine of Inequity. Retrieved from https://www.insidehighered.com/news/2013/07/31/report-documents-how-higher-education-exacerbates-racial-inequities

Lee, Stacy J. *Unraveling the" model minority" stereotype: Listening to Asian American youth*. Teachers College Press, 2015.

Lehman, J. S., & Lewis, E. (2010). *Defending diversity affirmative action at the University of Michigan.* Ann Arbor. University of Michigan.

Levin, J. A., Datnow, A. (2012). The principal role in date driven decision making: Using case study data to develop multi-mediator models of educational reform. *School Effectiveness and School Improvement, 23*(2), 179–201.

Lindwall, J. J., & Coleman, H. L. (2008). The Elementary School Counselor's Role in Fostering Caring School Communities. *Professional School Counseling*, *12*(2), 144–148.

Luttrell, W. (2000). "Good enough" Methods for Ethnographic Research. *Harvard Educational Review, 70*(4), 499–524.

Massey, D., Mooney, M., Torres, K., & Charles, C. (2007). Black Immigrants and Black Natives attending selective colleges and universities in the United States. *American Journal of Education, 113*(2), 243–271. DOI: 10.1086/510167

Masten, A. S. (2001). Ordinary magic: Resilience processes in development. *American Psychologist*, *56*(3), 227.

Marvasti, A. (2003). *Qualitative research in sociology*. SAGE Publications Limited.

McPherson, M. S., & Schapiro, M. O. (1990). *Selective admission and the public interest*. New York: College Entrance Examination Board.

Mena, J. A. (2011). Latino parent home-based practices that bolster student academic persistence. *Hispanic Journal of Behavioral Sciences*, *33*(4), 490–506

Millard, R. (2013, Mar. 3), First Person: Caroline Back. *Financial Times Magazine.*

Mission Squash builds courts and classroom for low income students in Hogg Middle School, Houston. Mission Squash of Houston.

Mitchell, 2001, J. S. (2001). *Winning the heart of the college admissions dean: An expert's advice for getting into college*. Berkeley, CA: Ten Speed Press.

Muijs, D. (2010). *Doing quantitative research in education with SPSS*. Sage.

Muska, M., Oliverira, P., Dwane, A., & Cohen, S. (2011). *Getting In! The Zinch guide to college admissions & Financial Aid in the Digital Age.* Wiley.

Nau, R. (2017). Linear Regression Models http://people.duke.edu/~rnau/regstep.htm.

Neill, James. (2004) *Quantitative Research Designs,* 2003.

Nora, Amaury. (2004) The Role of Habitus and Cultural Capital in choosing a college, transitioning from high schools to higher education, and persisting in college among minority and non-minority students. *Journal of Hispanic Higher Education, 3*(2), 180– 208.

O'Brien, E. M., Zudak, C. (1998) Minority-Serving Institutions: An Overview. *New Directions for Higher Education, No. 102,* 5–15.

Ogletree, C. J., Jr., & Ogletree, C. J., Jr. (2005). All deliberate speed: Reflections on the first half-century of Brown v. Board of Education. *Montana Law Review, 66*(2), 283–296.

Patten, Mildred L. (2000) *Understanding Research Methods*. Second Edition. Los Angeles: Pyrczak Publishing.

Putnam, R. D. (2001). *Bowling alone*. Simon and Schuster.

Quintana, S. M., & Maxwell, S. E. (1999). Implications of recent developments in structural equation modeling for counseling psychology. *The Counseling Psychologist, 27*(4), 485–527.

Robeson, P. (1988). *Here I stand*. Beacon Press.

Robertson, Dana. Unpublished Dissertation Proposal, Boston University School of Theology.

Rumbaut, R. G., & Portes, A. (2001). *Ethnicities: Children of immigrants in America*. University of California Press.

Russell, K., & Russell, K. (1992). In Wilson M., Hall R. E. (Eds.), *The color complex: The politics of skin color among African-Americans*. New York, NY: Harcourt Brace Jovanovich.

Quintana, S. M., & Maxwell, S. E. (1999). Implications of recent developments in structural equation modeling for counseling psychology. *The Counseling Psychologist, 27*(4), 485–527.

Sander, R., & Taylor Jr., S. (2012). *Mismatch: How Affirmative Action Hurts Students It's Intended to Help, and Why Universities Won't Admit It*. Basic Books (AZ).

Schneider, B., & Judy, J. (Eds.). (2014). *Innovations in Improving Access to Higher Education*. John Wiley & Sons.

Schmidt, P. (2010, Nov. 16) Rising admissions standards have kept top colleges out of many minority students' reach. *Chronicle of Higher Education.* Retrieved from http://www.chronicle.com/article/Rising-Standards-Keep-Top/125410/

Schmidt, W. H., Burroughs, N. A., Zoido, P., & Houang, R. T. (2015). The role of schooling in perpetuating educational inequality an international perspective. *Educational Researcher, 44*(7), 371–386.

Seidman, I. (2006). *Interviewing as qualitative research: A guide for researchers in education and the social sciences*. New York, NY: Teachers College Press.

Soares, 2007, J. A. (2007). *The power of privilege: Yale and America's elite colleges*. Stanford, CA.: Stanford University Press.

Sofaer, S. (2002). Qualitative research methods. *International Journal for Quality in Health Care*, *14*(4), 329–336.

Somehk, Bridget, Zeichner, Ken, Action research for educational reform; remodeling action research theories and practices in local context, *Educational Action Research, 17*(1), 5–21.

Sommerfeld, A. K. (2009). *Reflections on Class: A Phenomenological Investigation of how Subjectively Identified" middle Class" White Women Understand and Negotiate Their Social Class Position*. Doctoral dissertation, University of Wisconsin–Madison.

Solberg, V. S., Howard, K., Gresham, S., Confirmatory Factor Analysis Technical Report, 2011

Solberg, V. S., Howard, K., Gresham, S., & Carter, E. (2012). Quality Learning Experiences, Self-Determination, and Academic Success: A Path Analytic Study Among Youth With Disabilities. *Career Development and Transition for Exceptional Individuals*, *35*(2), 85–96.

Steele, C. M., & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African Americans. *Journal of Personality and Social Psychology*, *69*(5), 797

Sternberg, R. J. (2010). *College admissions for the 21st century*. Cambridge, MA: Harvard University Press.

Tatum, B. D. (1997). *"Why are all the Black kids sitting together in the cafeteria?" and other conversations about race*. New York: Basic Books.

Tatum, B. D. (2007). *Can we talk about race? And other conversations in an era of school resegregation*. Beacon Press.

Triola, M. F., & Franklin, L. A. (1994). *Business statistics: Understanding populations and processes*. Addison-Wesley.

Vincent, C., Rollock, N., Ball, S., & Gillborn, D. (2013). Raising Middle-class Black Children: Parenting Priorities, Actions and Strategies. *Sociology*, *47*(3), 427–442.

Vogt, W. P. (2007). *Quantitative research methods for professionals*. Allyn & Bacon.

von Zielonka, B. (2003). *The relationship between teacher evaluation and school culture.* Unpublished doctoral dissertation, Boston University.

Walton, G. M., & Cohen, G. L. (2007). A question of belonging: race, social fit, and achievement. *Journal of Personality and Social Psychology*, *92*(1), 82.

Walkerdine, V., Lucey, H., & Melody, J. (2001). *Growing Up Girl: Psychosocial Explorations of Gender and Class*. New York, NY: New York University Press.

Ward, Nadia L. (2006). Improving Equity and Access for Low-Income and minority youth into institutions of higher education. *Urban Education, 41*(1), 50.

Webster, L., & Mertova, P. (2007). *Using narrative inquiry as a research method: An introduction to using critical event narrative analysis in research on learning and teaching*. Psychology Press.

Weiss, R. S. (2008). *Learning from strangers: The art and method of qualitative interview studies*. Free Press.

Wong, V.C., Wing, C. Steiner, P.M., Wong, M. Cook, T.D. (In Press, Under Review), Research Designs for Program Evaluation. In Velicer, W. Schnika, J. *Handbook of Psychology* (2nd edition) Wiley and Sons.

Website: www.createyourdreams.org

http://www.algebra.org/. Algebra Project & YPP "Flagway" NCTM Workshop 4/17/15 – Boston

Yin, Robert K. (2011) *Qualitative Research from Start to Finish*. Guilford Press.

CURRICULUM VITAE