

THE COMMUNITY COLLEGE:  
ACCESS TO OPPORTUNITY OR BARRIER TO SUCCESS?

by

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A dissertation submitted to faculty of  
The University of North Carolina at Charlotte  
in partial fulfillment of the requirements  
for the degree of Doctor of Philosophy in  
Public Policy

Charlotte

2016

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## ABSTRACT

SAMUEL JACOB GRUBBS. The community college: Access to opportunity or barrier to success.(under the direction of DR. BETH A. RUBIN)

The purpose of this dissertation was to investigate some of the contradictory outcomes for community college students. I investigated whether community colleges lower their students' aspirations and make students less likely to be socially involved if they transfer to four-year institutions. Furthermore, I tested whether there were significant positive differences in wage and job status outcomes between community college degree holders and people with some college studies but no degree. For this research, I used the 2002 Educational Longitudinal Study (ELS), a ten-year national study of 10<sup>th</sup> graders. The results of this dissertation show mixed support for the presence of social closure affecting community college students. Specifically, community college students who desired a bachelor's degree experienced lowered educational expectations if they started at a community college or obtained an associate degree. Additionally, community college students who transferred to four-year institutions were less likely to become involved with engaging student activities on campus. The results also show that increased involvement with engaging activities positively correlates with bachelor's degree completion. In the analysis of wage and job status outcomes, I found positive wage and job status benefits for certificate holders when compared to the benefits for people with some higher education and no degree. For associate degree recipients, the results indicate a job status benefit but no wage benefit. It is important for policy makers to take steps to assist community college students, so students can overcome social class differences and experience greater academic and employment success.

## ACKNOWLEDGEMENTS

It would not have been possible to complete the dissertation without the guidance and support of many people. My advisor, Dr. Beth A. Rubin, showed great patience and dedication throughout my doctoral studies. I would also like to thank my committee members (Dr. Elizabeth Stearns, Dr. Jaclyn Piatak, Dr. Paul Gaggl) for their support and help throughout the process. I would like to acknowledge the following people for their contribution to my dissertation: Dr. John Szmer, Dr. Joseph Cochran, and Dr. Joseph Whitmeyer – for their support with the data analysis; Dr. Qingfang Wang, Dr. Roslyn A. Mickelson, Dr. Stephanie Moller, Dr. Jason Giersch and Dr. Scott Fitzgerald – for their ideas and contributions to my work; Jennie Wienke, Connie Grubbs, Dr. Lisa Russell-Pinson, Dr. Michael Bossick, and Roger Hooper – for their help with editing and revising my manuscript. Especially, I would like to thank Roger Hooper for all of his time and effort to help me complete my dissertation.

UNC-Charlotte has been extremely helpful with opportunities to help me develop during my time as a student. The Public Policy Ph.D. program has been wonderful for providing me with various assistantship opportunities and travel funding. I would like to thank Martha Kropf, the Interim Program Director, for all the time and energy she gave to me while I studied. I acknowledge and express my great appreciation to the UNCC Graduate School for awarding me the Lucille P. and Edward C. Giles Dissertation-Year Fellowship. Their funding award gave me the opportunity to focus on my dissertation, and I could not have been as productive without their support.

The support of my family and friends has been a major reason why I have worked successfully in my doctoral program. I would like to thank all of the people who took



pictures of the community colleges that I present in Appendix B. I would also like to thank my program peers (Jennie Wienke, Katelin Hudak, Brian Jones, Jackson Deziel, Meika Berlan, Melisa Stivaletti, and many others) for their friendship and support while I studied. Additionally, I would like to thank my church friends for their continued prayers as I worked toward this dissertation. Finally, this dissertation would not have been possible without the support of my family. My parents (Jeff and Connie), wife (Pum), and children (Anna and Irene) have provided me with enough time and flexibility to get my work done. They have been so understanding and considerate. I could not have done this dissertation without them.

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## CHAPTER 1: INTRODUCTION

The community college is a uniquely American institution. Its ethos, rooted in access and opportunity, is in sharp contrast to that of the bachelor's degree-granting institutions that incorporate English and German arcane traditions and concepts of privilege and superiority for their students. The community college provides sub-baccalaureate degree options that are additional rungs in the educational ladder so that students can move beyond high school even if they do not pursue a bachelor's degree (Grubb and Lazerson 2004). Sometimes called a technical, city or county college, the community college promotes the egalitarian ideal of education being for the masses and not for only the bourgeois elite in what Brint and Karabel (1989) call the "democratization" of American higher education. Politicians, regardless of party affiliation, promote community colleges as panaceas for the economic woes of communities.

Community colleges have clear missions to serve the educational needs of the community in which they are located (Riesman 1980). For decades, community college students have accounted for a large percentage of American students in higher education. Yet, all positive benefits notwithstanding, community colleges create inherently contradictory outcomes. They provide a gateway for many students who may want to pursue a bachelor degree, yet most students do not transfer and so graduate with only certificates or associates degrees, an outcome that leads Karabel (1986) to suggest that

community colleges develop a submerged under-class of labor market participants. The purpose of this dissertation is to investigate those contradictory parts of community college missions. It is relevant to examine how effective these institutions are at helping students succeed in their future ambitions.

Max Weber stated that educational credentials lead to “the formation of a privileged stratum in bureaus and offices” (Gerth and Mills 1946:241). Furthermore, many sociology theorists have suggested that community colleges reinforce stratified class boundaries in our society (Bowles and Gintis 1976, Brint and Karabel 1989, Karabel 1986, Zwerling 1976). This dissertation tests if social class boundaries based on the type of post-secondary institution where a person attended or graduated hinder community college students. This dissertation uses the theory of social closure as a framework to investigate if restrictions affect opportunities afforded community college students.

Little research has examined the long-term outcomes for students who attend community college. Over 20 years ago, Dougherty (1994) examined many of the themes in this dissertation, but the community college environment has changed a great deal since that period. The missions of community colleges have become broader, the students in community colleges have become more diverse, and the challenges of accountability and funding are more evident than ever before. Presently, appropriate political interest exists to examine the economic and social impacts of providing opportunities for students to attend community colleges. It is, therefore, practical and heedful to go beyond the rhetoric to test competing perspectives of what a community college education means in the present educational and political environment. The results of this research can help

shape future policies, informing the government and community colleges' institutional objectives to create pathways for disadvantaged students to pursue higher education.

Recently, President Obama proposed an initiative to give free community college tuition for two years to almost any student (Office of the Press Secretary 2015).<sup>1</sup> This proposed national agenda measure suggests that increased education credentials (specifically community college programs) will lead to a better-educated workforce and a stronger middle class. The tuition-free, community college education proposal is just one part of his ongoing "American Graduation Initiative." President Obama's overall goal is for the U.S. to have the world's greatest number of college graduates per capita (Office of the Press Secretary 2009). In considering President Obama's interest in promoting community college education, it is important to understand how much of an effect educational institutional differences between the students who attend and graduate from community colleges and students who attend and graduate from four-year institutions.

Education is regarded as a key component in the process of pursuing higher status attainment (Blau and Duncan 1967, Sewell and Hauser 1975). Scholars argue that for individuals to succeed in the job market it is essential for them to have a postsecondary education credential, and providing such education is "one of the nation's most crucial means of reducing persistent economic inequalities" (Haveman and Smeeding 2006:126). Haskins and Sawhill (2009) argue that higher education is a critical component to help remove the income disparity in our country. Presently, more students are applying to more colleges than ever before (Pryor et al. 2007). Furthermore, college graduation rates have steadily increased in recent history (National Center for Education Statistics 2013).

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<sup>1</sup> It is actually not free community colleges, but rather it is federal funding to states who make changes to community college costs like eliminating student tuition and fees.



According to the U.S. Census Bureau (2014), more adults have college degrees than ever before. The assumption is that workers can use the knowledge gained from a post-secondary education to overcome social hurdles that block the disadvantaged from finding gainful employment. Though researchers have tested this assumption based on a person's years of education, researchers have not tested this assumption based on the type of credential that a person receives.

Overall, information from the Bureau of Labor Statistics (BLS) in the United States (U.S.) shows a clear inverse relationship between higher levels of education and lower levels of unemployment and a positive correlation between education levels and wage levels (Office of Occupational Statistics and Employment Projections 2015). Reports from other government sources (Department of the Treasury 2012) and private organizations (Baum, Ma and Payea 2013) further support the correlations claimed by the BLS. While scholars and policymakers highlight the correlations as a rationale to promote higher education as a way to get people better jobs, present economic theory does not properly address the local community variation in labor market outcomes (Osterman and Shulman 2011). Through a much broader analysis of social and community factors, this dissertation addresses community college student educational and employment outcomes.

There is a much wider issue concerning the purpose of higher education that needs to address when examining community colleges. In the next chapter, I discuss the history of community colleges and how they operate. It is clear that society promotes colleges and universities as inherently social institutions where students develop social skills. Community colleges are educational centers with only basic opportunities for

students to interact and develop socially. Since the institutions have an open-admission policy for many programs, some potential employers perceive community college students to be lower quality students (Scherer and Anson 2014). This perception, correct or not, can lead former community college students to roadblocks in their career goals. Sociologists have developed a theory of social closure that interprets these roadblocks as a product of social class action.

### 1.1. Social Closure

Max Weber, when explaining the mechanisms that perpetuated social inequality, originally introduced the idea of social closure. Weber suggested that a social class originated from a group of people who share three common traits: wealth, status, and power. He categorized social class as “1) people who have in common a specific causal component of their life chances in so far as 2) this component is represented exclusively by economic interests in the possession of goods and opportunities for income, and 3) is represented under the conditions of the commodity or labor market” (Gerth and Mills 1946:181). In his view, economies are divided into groupings that have distinctive lifestyles and views of the world. Members of a status group come to recognize each other based on their way of life and the degree of honor or lack of it that is accorded to them by others (Coser 1977). The recognition of honor establishes a social distance between the “haves” and the “have-nots” in Weber’s theory.

The concept of excluding some individuals based on characteristics or traits is the basic premise of the theory of social closure. The Weberian principle of closure as highlighted by Murphy (1988) and Parkin (1979) suggests that we live in a stratified class system in which people use power and prestige as tools to promote discrimination

against people from lower socio-economic classes. Murphy (1988) argues that decisions distinguishing formal and informal rules govern how people monopolize resources or discriminate against others. Murphy describes social closure as a process of subordination. Parkin (1979) extends this idea by positing that social closure is “the process by which social collectives seek to maximize rewards by restricting access to resources and opportunities to a limited circle of eligibles” (44). According to Parkin, the process of social closure occurs as a collective social action by focusing on social or physical attributes to justify the exclusion.

There are two types of social closure in Parkin’s (1979) view: exclusionary and usurpatory, and these act as opposite ends in a spectrum of closure. Exclusionary closure “is the attempt by one group to secure for itself a privileged position at the expense of some other group through processes of subordination” (45). In his view, exclusionary closure is the symbolic use of power downwards. In contrast, usurpatory closure is the use of power upwards by the mobilization of a subordinate group for the purpose of winning greater civic and social rights. Murphy (1988), though, considers usurpation a special type of exclusion in which an excluded group reacts by mobilizing efforts to control power in a downward direction (such as when a labor union strikes and shuts down operations so that even non-union members cannot work). For this research project, I am focusing solely on the concept of exclusionary closure.

Researchers have also applied the idea of social closure mathematically in the economic argument for why discrimination happens. Becker (1971) proposed a marginal discrimination coefficient (MDC), the unit cost of preferring one trait or qualification over another, can be determined through the equation:

$$MDC = \frac{\pi_t - \pi_n}{\pi_n}$$

In this equation,  $\pi$  is the price of labor. The  $t$  subscript indicates the price for a laborer with trait  $t$  and the  $n$  subscript indicates the price for a laborer without such trait. In the context of social closure and the community college degrees, it is possible to examine what the MDC (sometimes called a wage premium) would be for hiring a person with a bachelor's degree (the trait  $t$ ) for a job over someone without such a degree (or with a lower level degree).

#### 1.1.1 Mechanisms of Closure

I posit that closure mechanisms follow Tilly's (1998) dual form of categorical inequalities: interior and exterior closure. Tilly proposes that inequalities may be exterior when they do not originate in an organization but come from systemic differences in how society views certain positions such as sex-typing occupations. Closure mechanisms are normally exterior in a way similar to that which Murphy (1988) calls a principal form of closure, where access is limited based on a rule or law. Since restrictions do not always have to be based on derivative property rights, the exterior closure mechanism can be broader than principal closure as described by Murphy. Weeden (2002) presents the case that labor associations and voluntary certifications, in which no legal authority resides, can act as closure mechanisms in a labor market. These associations and certifications are society-wide and can be considered the root of exterior restrictions. Tilly's interior categories result from intra-organizational visible structural issues. These internal restrictions have been historically related to Marx's view of class conflict between capitalists and labor (Bottomore 1964). Often these restrictions are associated with occupational segregation within gender and ethnic groupings of employees (Reskin and

Cassirer 1996, Tomaskovic-Devey 1993). Sometimes, closure mechanisms are also associated with age discrimination (Roscigno et al. 2007). In the context of Tilly's discussion of categorical inequality, education restrictions can act as both an external category identifying a person with a credential and as an internal category within a company by establishing a boundary between certain groups of employees. "The creation of a well-marked interior boundary itself facilitates exploitation and opportunity hoarding" (Tilly 1998:76).

Educational knowledge is relative and socially constructed (Murphy 1982). The job market is competitive, and students want an edge. There has been a constant drive for employers to increase the educational requirements for employment opportunities (known as credential inflation) on the assumption that a more educated labor force will lead to better economic returns for businesses and higher wages for employees (Berg and Gorelick 1970, Collins 2002). Along with the employer credential inflation, young people are trying to pursue more credentials to be positioned for a top job in what Selingo (2013) calls a "credential race" and Riesman (1980) refers to it as "diploma inflation." Brown (1995) suggests that the present situation represents a case of employers trying to handle a more highly educated workforce by an "intensification of job screening" (Hirsch 1976:50). Some authors suggest that opening higher education too far is a problem resulting from a college agenda focused on the need for schools to keep enrollment high, even though, in the minds of some, many people do not need to pursue higher education (Scherer and Anson 2014). Others believe that any attempt to discourage students from studying at any post-secondary institution is wrong, completely un-American, and something we cannot do under any circumstances (Washington 2010, January 3).

In this dissertation, I examine exterior and interior closure related to two groups of people who went to community colleges: those who want to go further and pursue a bachelor's degree and those who seek to find work after completing only an associate degree. For those students who want a bachelor's degree, community college students face feedback from people while at community college who encourage the students to lower their ambitions in a closure process that Clark (1960b) called "cooling out." For those students who do transfer from community colleges to four-year institutions, they can face blocked opportunities at their new institution because they did not start at their new institution. Social relationships are a key component in student success and persistence (Chickering and Reisser 1993, Tinto 2012). Students who go straight through at four-year institutions can become well integrated into the campus community. Transfer students, like those who come from community colleges, are not so socially connected to the campus community because they come in later. Though some community colleges have designed programs to improve student engagement opportunities (Brown, King and Stanley 2011), many community college students do not normally have many opportunities to build social relationships with faculty and other students when they are at community colleges (Blocker, Plummer and Richardson 1965, Dougherty 1994, Wells 2008).

Many community colleges provide very little of the type of formal social programming that can be regularly found at most residential colleges and universities, in part, because the student population are commuters to campus and usually much older (Cohen, Brawer and Kisker 2014). When they transfer, they continue to be outside the society of the college or university (Wells 2008). The lack of social relationship creates

boundaries that limit opportunities for transfer students at four-year institutions. These boundaries can materialize in ways such as not having early opportunities to register for classes (many times because of limited transferable courses (Doyle 2006)). It can also happen because transfer students are not able to become members or leaders in many campus organizations because they came to campus later. The transfer students, specifically those from community colleges, may feel less a part of the campus community. Since they are less connected, if social closure exists in this environment, community college students who transfer may be less likely to be involved and may have a harder time trying to graduate.

Position degree requirements from employers can be interior or exterior forms of closure (based on how employers phrase the requirement) rooted in the perceived values attributed to degrees. “Four-year college entrants and graduates enjoy a considerable advantage over their community college counterparts on a variety of economic yardsticks, including occupational status, hourly and salary income, and protection from unemployment” (Dougherty 1994:59). In many industries, a person’s degree can act as a social closure mechanism by enhancing or limiting a person’s labor market opportunities (van de Werfhorst 2011). Many employers seek employees with bachelor’s degrees for a wide range of positions (Burning Glass Technologies 2014). Though formal qualifications and certificates would appear to be a “handy device” (Parkin 1979:55) for the people who possess such form of cultural capital, closure mechanisms can be more harmful to people from lower socioeconomic backgrounds who are less likely to have top credentials (Fasang, Mangino and Brückner 2014).

I propose that discriminatory closure clearly happens in community colleges in the social relationships and in the employment opportunities for graduates. Previous work has cited historical limits in admissions (i.e. social closure mechanisms) at many elite universities, resulting from the unscrupulous motives of some admissions officers (Karabel 2005). Community colleges are institutions that do not appropriately address social class and interaction like four-year colleges and universities do (Dougherty 1994). Furthermore, employers make decisions over what they perceive as the appropriate level of experience and education necessary for a job. Employers apply restrictions through Internet-based application sorting programs, where the first round of applicant cuts are determined based on a computer algorithm.<sup>2</sup> Therefore, mechanisms of closure for both transfer students and graduates of community colleges exist and are relevant to the present perception of community college students. In order to identify the mechanisms of closure, it is important to highlight signaling theory.

#### 1.1.2 Signaling

When including credentials in a job application, the applicants are *signaling* who they are, how they are qualified, and how they can help the company. Economists and other social scientists have applied signaling theory when they examined the actions of two parties when asymmetric information exists (Connelly et al. 2011). Signaling theory concerns how parties address information discrepancies (Spence 2002). Based on the early work of Spence (1973), signaling theory suggests that high quality job applicants seek to differentiate themselves from lower-quality applicants by using specific signals. These signals come at a cost, and applicants must consider if the costs of the signal are

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<sup>2</sup> A discussion is presented at <http://theundercoverrecruiter.com/job-boards-useful-jobseekers/>



worth the benefit they receive from having the signal like the type of degree that a person has received. Signaling theory has been applied to other decision-making situations in a variety of fields (Connelly et al. 2011).

Social closure, as it is used in this dissertation, relies heavily on signaling theory in both parts of the research that I investigate in this study. For those community college students who want to pursue a bachelor's degree, the implication of studying at a community college has some impact on how faculty and other students view them once they transfer to four year institutions (Townsend 2008, Townsend 2001). Furthermore, educational degrees act as signals of perceived knowledge and abilities that are sent to potential employers. An associate degree may act as a weaker signal than a bachelor's degree and may cause social closure mechanisms to be inputted by employers to block people with such credentials. In effect, some argue that, rather than closing wage differences, the associate degree reinforces income inequalities (Karabel 1986, Zwerling 1976). In this present work environment, the baccalaureate degree has now become a general signaling mechanism for the minimum requirements necessary for many types of employment positions.

### 1.2. The Contradictory Missions of Community Colleges

The missions of most community colleges are multifaceted and focused on responsibilities to help students who want to study.<sup>3</sup> In this research, I intend to examine, theoretically and empirically, what I propose as the two main contradictory points within the missions of many community colleges: the “gateway to opportunity” and the “economic well-being and job prestige” arguments. The gateway argument refers to the

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<sup>3</sup> An example is provided in Appendix A.

pathway taken by students who enter community colleges as a pathway to begin a bachelor's degree only because they are not able (because of time, money, or previous education) to attend a four-year institution. The well-being argument refers to the pathway taken by students who go to community colleges seeking credentials to help develop their employment or promotional opportunities.

#### 1.2.1. The Gateway to Opportunity Argument

The gateway to opportunity argument for the community college is a historical one that focuses on large-scale access and opportunity to higher education (Beach 2011). This universal argument presupposes that students anywhere can start working toward a higher education credential and find no problems in working toward graduation. I have divided the discussion of this argument into two parts. The first part focuses on the historical "cooling out" hypothesis, which suggests that students who study at community colleges lose their personal ambition to complete a bachelor's degree (Moore 1975). This hypothesis suggests, in general, that counselors and faculty encourage students to settle for a community college degree, effectively closing students off from additional education. The second part focuses on student retention after the students transfer to four-year institutions. I suggest that because of community college students' transfer status at four-year institutions, students who transfer from community colleges are less likely to be engaged in campus activities, and this lack of active involvement on campus influences their retention at colleges and universities. I highlight predominant theoretical frameworks and present data from previous studies on community college student ambitions, involvement, and retention.

Both examinations of the gateway argument presuppose that informal social closure is part of the community college environment. Specifically, staff members have influence over students' educational decisions. If social closure is present, the data should indicate that community college students have lowered ambitions because of their interactions with faculty and staff at the community college. Additionally, student involvement on campus reflects his or her commitment to a campus community (Astin 1993). Though institutional engagement is not directly a product of social closure, the work literature suggests that "job conditions affect adult personality mainly through a direct process of learning and generalization" (Kohn 1990:43). Many times community college transfer students at colleges and universities can experience social rejection and be stigmatized as outsiders on their new campus (Alexander, Ellis and Mendoza-Denton 2009). Community college transfers may, therefore, be less likely to be involved at the colleges and universities where they transfer. Overall, the lack of involvement can be a product of social closure within college and university communities. Lack of involvement can negatively affect student persistence in higher education (Tinto 2012).

#### 1.2.2. Economic Well-Being and Job Prestige Arguments

A central reason for attending post-secondary education is the potential economic benefit from attaining the education and training. Furthermore, status attainment theorists propose that there is a positive social benefit from increased education (Blau and Duncan 1967, Bozick et al. 2010, Sewell and Hauser 1972). The correlations among education and economic and social returns is the closest that it has ever been (Goldin and Katz 2008). If one accepts Grubb and Lazerson's (2004) argument that the true benefit from human capital comes from degree completion and not from years of education, then one

would have to assume that community college degrees would provide graduates with an economic benefit greater than that received by people who did not receive a higher education credential. Though there are overall positive economic returns from community college education even for students who do not complete a program (Belfield and Bailey 2011, Jacobson, Lalonde and Sullivan 2005b, Marcotte et al. 2005), the results of the research into this subject suggest that the impact on wages from getting a community college credential is quite complex (Grubb 2002b).

In the context of social closure, wages and job prestige are two factors related to status. People want good jobs and go to college to earn credentials to compete for jobs. Employers use educational credentials to solicit applications and screen résumés (Rivera 2011). Company administrators control what they perceive as the appropriate credential for positions within their business. Job educational requirements can, therefore, be considered an external closure mechanism. It is important to determine if community college credentials offer degree earners positive wage and status benefits in the job market.

### 1.3. Data

For this research, I used Educational Longitudinal Study (ELS) of 2002. This study, completed by the U.S. Department of Education's Institute of Education Science (IES), is a relatively new national representative study of 10<sup>th</sup> graders in public and private high schools during 2002 (National Center for Education Statistics 2015). IES is the research and evaluation arm of the Department of Education that seeks to investigate the effectiveness of U.S. education. The Institute has regularly completed longitudinal studies of high school students for more than 40 years. The data available in the ELS has

restricted access and is only available for people who have passed a background check and agree to work in a secure data lab.<sup>4</sup> Under these requirements, I had full access to all of the data in the study.

The ELS follows the 10<sup>th</sup> graders through high school graduation in 2004. The research team followed up with the students during their senior year in 12<sup>th</sup> grade. After graduation, there are two additional survey follow-ups with the students in 2006 and 2012. The study includes 16,190 respondents, and the main purpose of the ELS is to track the education and employment trajectories of the respondents over a 10-year period. The dataset is unique because it also includes surveys of parents, teachers, and administrators who are associated with the respondents. The study dataset also includes scores on high school assessments of math and English as well as high school and postsecondary transcripts.<sup>5</sup> In the two post-high school follow-ups, there is available information on the types of jobs and salaries the respondents had and the respondents' family and living arrangements at those times.

There are two main reasons for using these data for my dissertation. First, the ELS dataset has the variables that I can use to help me answer my research questions. It has the appropriate variables to examine the respondents' background, educational, environmental, and employment-related characteristics so that my results can present a comprehensive understanding. Second, the ELS is a large nationally representative sample of respondents from all over the country. Table 1.1<sup>6</sup> provides a summary of the

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<sup>4</sup> Dr. Elizabeth Stearns, Dr. Stephanie Moller, and Dr. Roslyn Mickelson at UNCC have included me as a researcher on their research that provided me with access to this dataset. They also provided me with secure workspace to do the analysis for this dissertation. Additionally, the Department of Education approved my proposed topic.

<sup>5</sup> I did not use all of these variables because they were not relevant or were repetitive for the analysis.

<sup>6</sup> All tables are available in Appendix C.

percentage of respondents by state. The second column in the table presents the percentage population totals by state in 2012. Both columns have very similar percentages; therefore, it is clear that the respondents represent a nationally representative sample. Also, there is special emphasis within the dataset to make sure that the respondents come from various SES backgrounds. The data are therefore valid and useful for my analysis. All of the findings can be generalized to the national population of students in U.S. higher education. For this analysis, I will use all respondents who at least attended a college or university.

This dataset has issues with missing response values. The researchers who prepared the ELS imputed many of the variables in the data using a regression technique called hotdeck.<sup>7</sup> The researchers from IES used this imputation technique to predict what the missing values in the survey responses would have been. Researchers impute data to keep response totals high and to account for potential non-response bias. Missing data can have an impact on results. In these data, missing data were particularly noteworthy when students changed high schools between the initial study of 10<sup>th</sup> graders and the follow-up of 12<sup>th</sup> graders. Missing responses were also present when respondents failed to participate in the follow-up studies. The main goal of the statistical data imputation was to have the most comprehensive results possible.

For the analysis of respondent's background, I added community variables based on the five-digit zip codes where the respondents lived during 10<sup>th</sup> grade in 2002 and again during 2012. I matched the 2002 and 2012 data based on zip code data available from the U.S. Census Bureau. These zip code-based community variables came from two

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<sup>7</sup> There is a thorough discussion of the imputation procedure and variables at <https://nces.ed.gov/surveys/els2002/manuals.asp>

sources. To represent the communities where the students lived when the ELS was first administered in 2002, I used the results of the 2000 U.S. Census because it has the most accurate estimates of what the communities were like. For this analysis, I present information collected from both the short form given to everyone and the long form given to 10% of the responses and estimated for the entire population. For the 2012 estimates of community, I used the American Community Survey (ACS). The ACS is a comprehensive survey of people in the U.S. produced by the U. S. Census Bureau. For this part of the analysis, I used five-year averages (2007-2012) of ACS results weighted for 2012. The ACS is a mandatory yearly survey that uses a 1% per-year sampling technique. The five-year average provides the equivalent of 5% response reporting. The U.S. Census Bureau collected the data for these two studies of the American people using multiple techniques. I downloaded both sets of community data from [factfinder.uscensus.gov](http://factfinder.uscensus.gov) and merged it with the ELS data using STATA 14.

#### 1.4. Assumptions

There is no easy way to test for the presence of social closure. Discrimination is an ingrained issue that does not always manifest itself in obvious ways. Most research on social closure uses a combination of quantitative and qualitative sources to analyze the topic, and the researchers base conclusions on well-placed assumptions that the correlations in the findings are the result of social closure (Roscigno et al. 2007, Tomaskovic-Devey 1993, Weeden 2002). This research examines social closure through the lens of the community college. In this research, I take two parts of the mission of the community college (transferring and graduating with an associate degree) and consider those in the context of social closure. Though researchers have used social closure to

explain many types of social issues like English language usage in Quebec (Murphy 1988), the theory implies that there is some, at least tacit, coordination of decision making (Weeden 2002). In order to understand any impact of social closure on students who study at community college, I make clear my own assumptions for where social closure may happen in education.

Wells (2008) has noted that community college students have less social capital associated with spending less time on campus when studying. According to Wells, that lack of social capital persists even after they transfer to four-year institutions. It is possible that social closure can occur among community college students who want to transfer to four-year institutions to pursue a bachelor's degree because of the lack of social capital. I assume that social closure among students may exist in two forms for those who aspire to attain a bachelor's degree. The first form derives from how social relationships developed at community college may encourage students to lower their educational ambitions. Additionally, students who do transfer from community colleges may lack social connections at four-year institutions. The lack of involvement can affect their enrollment persistence at four-year institutions.

Social closure may also take place from the types of jobs and salaries that community college graduates receive. Many have suggested that a person's level of education determines his or her success or privileged position in the job market (Collins 1979, Spence 1973). For example, employers put jobs on Internet job search engines such as Careerbuilder.com and Monster that allow them to restrict reviews of applications automatically by inserting conditions such as the degree attained. Given applicants with similar levels of experience, employers will prefer the applicant with the bachelor's



degree credential, leading to the “credential inflation” race noted years ago by Berg and Gorelick (1970). Community college students get jobs and many of them have good jobs. I can determine if there is a benefit to having a community college education as opposed to an education at a four-year institution.

With the dual higher education system in the U.S., the true closure mechanisms affecting additional education and access to top quality jobs may be the type of educational institution that a person attends. An established body of literature highlights the effect of social closure on interior categories based on systemic racism, sexism, and ageism (Roscigno et al. 2007, Tomaskovic-Devey 1993, Weeden 2002). This research extends the argument to education as well. Furthermore, there is an older body of literature that claims the current dual higher education system in the U. S. serves “as a means of distributing privilege and of legitimating inequality” (Karabel 1972:539). Though some suggest this criticism is only a “New Left” critique based on one-sided discussions of outcomes that are not reflective of the present environment (Beach 2011, Cohen, Brawer and Kisker 2014), this present analysis is a useful step in determining if social closure is a topic that needs more discussion in the policy arena. The results can help policy makers understand what impact attending a community college has on a person’s future employment and educational success.

### 1.5. Research Problem and Purpose

The problem examined in this dissertation centers on the contradictory purpose of the community college. Overall, school administrators and politicians promote community colleges as community tools to help the disadvantaged, yet some see the community college as a means to reinforce social stratification (Brint and Karabel 1989).

Some see community college education as a tool to open a middle-level labor market for those workers between high school graduates and bachelor's degree holders (Grubb 1996), while others see community colleges as means to channel poor performing students away from traditional four-year institutions while still keeping a promise that higher education in America is open for all (Bowles and Gintis 1976). Social closure theory reinforces this notion channeling the disadvantaged away from top-tier institutions by suggesting that social class restrictions seek to secure advantages for most affluent by limiting access to opportunities for individuals from disadvantaged backgrounds. Community college leaders need to help students overcome social class limitations and become more successful in their future academics and employment.

Little has been done to understand categorical limitations for the students at community colleges who pursue more education elsewhere or for the students who graduate from community colleges. In this research, I incorporate the theory of social closure that suggests some positions and rewards have restrictive access. Community colleges maintain an open admission policy (for most programs) that affects how community college transfer students are perceived at four year institutions and how employers regard graduates with associate degrees. In light of the increasing access to education, it is important to consider whether community college are indeed the gateway to further educational opportunities and whether community college degrees provide substantial economic and social value for graduates in the present work environment.

I investigate two parts of the community college mission within this study. First, I examine both the aspirations of students who start at community colleges and the educational outcomes community college students achieve. I highlight many of the

contradictory findings related to two general themes with respect to community college student aspirations and outcomes: the “cooling out” hypothesis and community college student involvement and persistence. In order to accept previous research that suggests students build social relationships during their time in higher education and developing social connections are vital for students’ identity development (Chickering and Reisser 1993), it is critical to address the inconsistencies in previous research on community college student aspirations. One of the comprehensive issues that I investigated in this dissertation is the effects of social relationships (at community colleges and four-year institutions) on students’ decisions to pursue their educational goals.

The second research problem that I seek to investigate is the economic and status outcomes for students who graduate from community colleges. Most previous research on the topic of community colleges has focused on the theory of human capital (discussed in Chapter 6). Human capital theory implies that all education is an investment that a worker makes in improving his or her productivity (Vallas 2012). There is, however, little distinction in how differences in educational institutions affect productivity. I consider the role of social closure mechanisms in explaining the present inconsistencies in explaining the role of human capital in determining personal earnings and economic growth (Benhabib and Spiegel 1994, Dale and Krueger 2002).

The purpose of this dissertation is to test competing hypotheses drawn from theories of social closure, student retention, human capital, and status attainment on the consequences of attending community colleges compared with attending four-year institutions. My research draws upon sociological, economic, educational, and public policy literature. This dissertation includes the arguments for and against the usefulness

of community colleges as part of the educational system. I go beyond simple wage outcomes and examine social closure in two missions that are fundamental for community college development: the gateway argument and the economic well-being argument. This dissertation investigates the function of community college attendance on graduation and the effect that receiving an associate degree has on wage and status outcomes. My research question is: *Do community colleges help or hurt students' chances of future success?* I define future success in two ways: completion of a bachelor degree (the gateway argument) and economic well-being and job prestige (an examination of wage and status returns for those who complete community college programs). I intend to look beyond established studies of monetary returns to consider the social ramifications that emerge from a community college education.

#### 1.6. Significance

My study focuses on the politically relevant topic community college education. Young people's pursuit of higher education has become part of the "normal biography" of high school graduates these days (Du Bois-Reymond 1998). Researchers in sociology and education have long been concerned with educational inequality. Education is considered a key tool for achieving social mobility and has been shown to be a significant determinant of a person's employment opportunities (Blau and Duncan 1967, Breen and Jonsson 2005, Fischer and Hout 2006, Hout 1988). The results of this study provide future researchers and policy makers with a greater understanding of the impact of a community college education. It will add to the present body of literature and analyze the topic of the community college in the context of our social environment. My intent in this dissertation has been to determine if social closure mechanisms affect the opportunities

for students at community colleges. In particular, I investigate if community colleges lower students' aspirations and make them less likely to be socially involved if they transfer to four-year institutions. Furthermore, I examine if there are significant positive differences in the wage and status outcomes between associates degree holders and people with some college but no degree. This research seeks to determine if there is a substantial labor market for people in the middle as Grubb and Lazerson (2004) propose. The dissertation broadens our understanding of how educational pathways affect further education and career outcomes. It is important to understand the consequences of studying at a community college so that policy makers can institute appropriate policy measures to address the issues.

### 1.7. Overview

In Chapter 2, I present a brief policy and historical overview of higher education and community colleges. Additionally, I highlight the present environment at many community colleges. In Chapter 3, I present provide summary statistics about the study respondents. I divide my research analysis into two parts: the gateway to opportunity argument (Chapters 4 and 5) and economic and well-being and job prestige arguments (Chapters 6). In Chapter 4, I begin my analysis by testing the “cooling out” hypothesis regarding community college student ambition. I test the likelihood that attending a community college will affect the likelihood that a person will meet or exceed his or her expectations. In Chapter 5, I evaluate community college student persistence toward a bachelor's degree. In this chapter, I highlight previous theory on the role of student involvement and engagement on persistence, and merge the literature between involvement and persistence. I use a mediated model to test whether being involved on

campus mediates the impact of starting at a community college on the likelihood of graduating with a bachelor's degree. In Chapter 6, I test arguments on human capital and status attainment for graduates of community college programs. This analysis uses a fixed effects regression to control for occupation categories to test for the effect of receiving a community college degree on a person's future income and occupational status. I conclude the dissertation with the discussion Chapter 7. In the final chapter, I connect all of the research findings to a broader discussion of how community college education affects students' future. I also review the policy implications of the results and provide suggestions of how current policies can be adjusted to improve outcomes. This dissertation seeks to establish if social closure affects the opportunities afforded to students who study and graduate from community colleges.

## CHAPTER 2: COMMUNITY COLLEGES: HISTORY AND POLICY

In order to understand the present higher education situation in our country, it is important to address the historical, political, and social context of community college education in our society because, as Tilly (1981) states, “An analysis is historical to the extent that the place and time of the action enter into its explanation” (6). This chapter examines the context of community college issues because our present policies regarding higher education and community colleges are rooted in the American political ideals of liberty and individualism. The emphasis on liberty can be found in many of our country’s founding documents and permeate policies that seek to increase access to and opportunities for people who are from disadvantaged backgrounds. American individualism is also an important concept in today’s higher education culture where most people have a strong desire to succeed and be the best. Higher education is central to the individualistic ambitions of many Americans. In the end, individualism and access come together to provide a framework for the present situation. This framework broadens opportunities and, at the same time, promotes individual competition to reach the top. In the words of President Herbert Hoover (1922),

that while we build our society upon the attainment of the individual, we shall safeguard to every individual and equality of opportunity to take that position in the community to which his intelligence, character, ability, and ambition entitle him; that we keep the social solution free from frozen strata of classes (9)

In investigating the fundamental usefulness of the community college, it is critical to consider both history and present policies (at both the government and institutional

level) in order to provide meaningful implications for politicians, school administrators, and students. Any analysis that looks at community colleges as interchangeable components in higher education fails to consider the sociological conditions that are involved. Using this information, I seek to do more than merely provide an empirical hypothesis test. I provide a context for the present political discussion on community college education. In this chapter, I ground the findings in the next chapters in a broader understanding of what a community college education means.

## 2.1 Higher Education Policy

Education has been widely promoted as a tool for economic advancement in the developing and developed world (Benhabib and Spiegel 1994, Brown and Park 2002, Krueger and Lindahl 2001, Wedgwood 2007). There is general agreement that more education is a key to a better life. Most authors conclude that when individuals pursue more education, they obtain economic and social benefits for their community and society at large (Arum, Gamoran and Shavit 2007, Haskins and Sawhill 2009, Haveman and Smeeding 2006, McMahon 2009). As Horace Mann succinctly stated in 1848 and many have often repeated, “Education then...is a great equalizer of the conditions of men” (1). More recent work has noted that “the chances of achieving economic success are independent of social background among those who attain a BA” (Torche 2011:798). Even so, some believe that “Contrary to the oft-stated belief in the leveling-effect of higher education,...the nation’s colleges and universities appear to be an integral part of the process whereby family economic status is passed along” (Haveman and Wilson 2007:38).



Prior to the middle of the 20<sup>th</sup> century, people considered higher education opportunities in the U.S. an accompaniment of social privilege (Karabel 2005). Access to higher education was limited to the social elite. Since that time, growth in access to higher education has been extreme (Lazerson 1998). Social and political forces have opened up opportunities for a larger and more diverse population to attend higher education. Higher education restrictions based on social status have largely disappeared apart from within the enclaves of some private, expensive colleges and universities (Collins 2002). Access to higher education is seen by many as a fundamental right of everyone and essential for promoting equality of opportunities (Bowen et al. 2005).

For the last fifty years in the United States, policy makers have promoted education as an effective policy measure to mitigate income inequality and promote opportunities for the less fortunate. Beginning after the Second World War with the implementation of Servicemen's Readjustment Act of 1944 (also known as the G.I. Bill) and continuing for the last fifty years with the resources provided under the Higher Education Act of 1965, there has been a continuous national agenda to improve higher education access to the masses. When signing the Higher Education Act, President Lyndon Johnson stated:

We believe, that is, you and I, that education is not an expense. We believe it is an investment. The 10 talents multiply. They return in the shape of economic growth. They return in the shape of better government. They return in the shape of a higher standard of living for all of us. (Johnson 1968, October 16)

Opportunities for education have expanded through the increasing use of government-backed student financial aid (Fischer and Hout 2006). Still today, Democratic and Republican politicians, including Presidents Obama and Bush, have sought to portray themselves as proponents of higher education opportunity in an attempt to suggest that

more schooling can help solve U.S. economic problems (Bidwell 2014, Haveman and Smeeding 2006, Mettler 2014, Obama 2015b). Some, however, argue that the present problem of the decreasing international competitiveness within the American workforce cannot be solved by just “education reform,” and that laying the burden of economic improvement upon schools is inappropriate because the issue is much broader than one of just education (Cremin 1990:102).

## 2.2. The Present Higher Education System: Marketing and Meritocracy

The present American system of higher education relies on principles of neoclassical microeconomics. There are many suppliers and many customers for the services of higher education. Each supplier seeks to differentiate its higher education service in a monopolistic competitive market where customers (i.e. potential students) make decisions based on the perceived added benefit associated with each higher education option. Human capital theorists would propose that any personal gain in education would lead to better individual wages (Becker 1993), but “Not all colleges are created equal” (Selingo 2013:122). Much has been written about declining academic standards at many colleges and universities (Sperber 2005) and about the impact of decreases in state funding on tuition rates at many public higher education institutions (Mettler 2014). Some see post-secondary education as just a “holding pattern [for young people] until they can get on with their lives” (Henry 1994:159). Additionally, some suggest that some young people go to college because they simply do not know what else to do (Selingo 2013).

“As more and more people enter college, higher education will play an increasingly greater part in the sorting process” (Karabel and Astin 1975:397). As

broader access to higher education has occurred, there has been a greater institutional emphasis on establishing a system of differentiation and stratification among institutions (Gallacher 2006). Institutions have to work hard to market and develop images of themselves that attract the best student applicants and thereby allowing the institutions to improve their status and financial position. There are high costs associated with some colleges and universities becoming or remaining elite institutions of higher education (Bok 2003, Bowen et al. 2005). Colleges and universities focus on SAT scores and other academic measures to gauge potential students' academic abilities in order to recruit high caliber student bodies that will enhance their reputations. Universities often publish test scores and grade point averages as pointers to indicate how selective they are, so that the best students may be more inclined to enroll.<sup>8</sup> The quest to be viewed as highly selective institutions through attracting more students and raising admissions standards is what Fallows (2005) describes as a “attract-to-reject” strategy in an attempt to gain or maintain a status as an elite institution. This strategy results in higher operational costs for institutions. These higher costs are passed on to students, so many elite institutions are more costly to attend (Mettler 2014).

The determination by many university and state government leaders to push their institutions to become or remain elite institutions has resulted in further inequality in opportunities for applicants (Mettler 2014). Student applicants can experience two negative outcomes as a result of the increased institutional selectivity: those who receive admission to top universities may falsely feel they are set for life and those who are rejected feel they are failures (Fallows 2005). It is, however, a winning situation for

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<sup>8</sup> For example, see Clemson University  
<https://www.clemson.edu/admissions/undergraduate/documents/breakfast-presentation.pdf>,

selective four-year institutions. Selective colleges and universities can market their prestige to promote fundraising opportunities from private and public sources (Geiger 2002), and this becomes important for operating in this generation of rolled-back state funding for public higher education (Bok 2003, Mettler 2014). In this variety of meritocracy, it is not the applicant's money but the applicant's ability that will give students access to top universities, an education experience superior to the experience of students who attend lower class institutions (Michaels 2006). By attracting the best students, the top colleges and universities reinforce their prestige and obtain more financial resources from public and private sources that provide money for top quality research.

There are other criticisms that suggest the present higher education system is not a meritocracy based on academic ability. Karabel (2005) presents historical evidence that suggests top college and university leaders used admission criteria as a way to maintain institutional power within certain ethnic and racial groups.<sup>9</sup> Students with high levels of socioeconomic status gain access to prestigious schools while others are relegated to general public colleges and universities (Cookson and Persell 1985, Karabel and Astin 1975). Specifically, Guinier (2015) points out that the present system focuses on what she refers to as a "testocratic" merit system that enables those, mainly upper-class students who can afford significant help with admission exam testing, to enter the higher status colleges and universities. Presently, it is much more difficult for students from lower income levels to start and finish a college education than it is for people from higher income brackets. Often those from low socio-economic status backgrounds receive no

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<sup>9</sup> Recent news suggests that top universities still use discriminatory admissions policies. <http://www.wsj.com/articles/asian-american-organizations-seek-federal-probe-of-harvard-admission-policies-1431719348>

“breaks” in the admission process used by the top universities (Bowen et al. 2005).

Haskins and Sawhill (2009) propose that a more accessible system should be available, one that provides easier student funding options and improved student services for low-income families. With provisions of increased government-backed financial support, more students from low-income families can attend college and reduce future income inequalities.

Social scientists have long argued that education mediates the effect of family background on improved economic well-being (Blau and Duncan 1967, Bozick et al. 2010, Breen and Jonsson 2005, Sewell et al. 2003, Sewell and Hauser 1972, Wilson and Portes 1975). Persistent evidence recognizes that individuals from higher socio-economic class groups have greater access and opportunity to pursue the best higher education (Bowen et al. 2005, Cookson and Persell 1985, Guinier 2015, Haveman and Wilson 2007, Karabel and Astin 1975). Goldin and Katz (2008) present the economic case that increased education leads to a better society with decreased wage inequalities. In a more extreme position, Piketty (2014) challenges the present system of meritocracy in higher education and further suggests that an open, egalitarian education system can limit wage inequalities and can improve the general well-being of many members within a society.

### 2.3. The American Public Community College

“The American community college has long and proudly claimed its place in higher education at the nexus of access and excellence...the higher education embodiment of egalitarianism” (Scherer and Anson 2014:165). Brint and Karabel (1989) have called the community college “the most successful institutional innovation in twentieth century American higher education” (6). Community colleges provide an

attainable entry gate into higher education for many people who may not otherwise be able to study in a post-secondary institution (Cohen, Brawer and Kisker 2014). The claims that community colleges represent an innovation are not universally accepted. Goodwin (1973) states, “For all of its claim of innovation, however, and rejuvenation, the community-junior college movement stands as a profoundly conservative movement. Its primary objective at all times has been social stability, not social change” (15).

There has been a history of presidential-appointed committees reporting on the usefulness of community colleges. In a significant report on higher education access published in 1947, a commission of education and civic leaders appointed by President Harry Truman suggested that expanded access to higher education was a necessary for continued growth of the U.S. democracy (President's Commission on Higher Education 1947). In that report, one of the commission’s recommendations was that junior colleges be called “community colleges,” and those institutions should “remove geographic and economic barriers to educational opportunity, and discover and develop individual talents at low cost and easy access” (67).<sup>10</sup> Furthermore, the commission legitimized community colleges’ focus on terminal general and vocational programs as a way to help people who cannot complete a traditional four-year education. Many researchers cite the proposals as the framework of today’s access-centered community colleges (Kim and Rury 2007, Reuben and Perkins 2007). Ten years after the Truman Commission’s report, the Committee on Education beyond the High School (1957), appointed by President Eisenhower, noted that “The expansion of the junior or community college education has been one of the most notable developments in post-high school education in twentieth

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<sup>10</sup> The report proposes that for community colleges to be the “next great area of expansion in higher education,” the institutions need to be “tuition-free.” (22).

century America” (1). Furthermore, the committee noted community colleges needed to become “a center for community groups and individuals seeking to enrich their lives through learning” (2). This report was one of the starting points for the increased political and social interest in the development of local public community colleges around the country.

Some suggest that the community college “is perhaps the most effective democratizing agent in higher education. It decentralizes post-high school opportunities by placing them within reach of a large number of students” (Medsker 1960:4). According to Nevarez and Wood (2010), the modern community college has a six-fold mission: “open access to education, comprehensive educational programming, serving the community, teaching and learning, lifelong learning, and students’ achieving academic/career goals” (178). These parts come together to form a vision of a “broader postsecondary education for the people” (Deegan and Tillery 1985:5).

The very essence of the egalitarian community college is rooted in the perception that no one is a second class citizen. To make everyone -- part-time/full-time; older/younger; Anglo/minority; transfer/vocational; day student/ night student feel that the community college is for them is no simple task. In all higher education, the community college is the only institution that even tries. (Cross 1990:6-7)

Community colleges have dealt with shifting missions throughout their existence, caused by changes in state higher education policy and funding (Beach 2011, Brint and Karabel 1989, Meier 2008). The following section reviews in general terms the development of the community college.

#### 2.4. History of the Community College

Though the two-year college is a distinctly American invention, its origins are not firmly rooted in missions of democratization in higher education that most community

colleges now espouse. Many of the original two-year colleges were trade and preparatory schools that acted as alternatives to secondary school. Though many two-year colleges have histories that date back to the 1600's, the first two-year colleges began to operate in small and large communities across many states during the early 1900's (Dougherty 1994, Pedersen 2000). There was an early founding period (1900-1930), a national organization period (1930-1945), an expansion period (1946-1970), a vocational shift period (1971-1985), and the present postindustrial period (Deegan and Tillery 1985, Dougherty 1994, Meier 2008). Several of the early two-year colleges originated independently from the expansions of high schools to include a 13<sup>th</sup> and 14<sup>th</sup> grade to help students after they completed general education. The original intention of the early two-year colleges to provide an education so young people in the community could become good homemakers or local workers (Cohen 2001). Some of the early two-year colleges (or extended high schools) enrolled fewer than 75 students and used high school classrooms and teachers (Pedersen 2000).

The original development of the two-year college was not from the top-down diffusion of an educational innovation. Rather, the original community colleges were the bottom-up products of community advocacy through organizations such as like Chambers of Commerce, newspapers and local voters (Cohen, Brawer and Kisker 2014, Dougherty 1994, Pedersen 2000). Policy-makers promoted the early two-year colleges, normally called junior colleges, as ways to improve communities and provide opportunities for local students to study. The schools provided protection for students from the temptations of studying far away in major cities (Cohen 2001). These institutions were not set up as the open institutions that we see today, they were organized as derivatives of four-year



colleges with substantial tuition requirements, admission standards, intercollegiate sports teams,<sup>11</sup> residence halls, and vibrant campus communities (Pedersen 2000). The expansion of the schools was not inevitable. Many critics questioned the role of local government in operating institutions of higher education. Some early two-year, local college development opportunities were sidelined by voters influenced by of vocal criticism (Pedersen 2000).

William Rainey Harper, the president of the University of Chicago, is considered “the father of the junior college” (Eells 1931:47).<sup>12</sup> He had the idea of splitting the four years of education needed for a bachelor’s degree in two parts, which began being called the junior college (the first two years) and the senior college (the last two years).<sup>13</sup> In 1900, he persuaded the faculty and trustees at the University of Chicago to offer a bifurcated education and grant an “associate” degree for the completion of the first two years of junior college work. Harper’s rationale was that universities can increase their standards, and students who would not otherwise pursue higher education could do so. Ideally, he proposed that many students would find it “convenient to give up college work at the end of the sophomore year” (quoted in Eells 1931:47).

Although many community colleges started at the beginning of the twentieth century, there is a general consensus that the first permanent two-year college was Joliet Junior College in Illinois, which started in 1901 (Eells 1931). Harper tried for many years to persuade high schools in the Chicago area to begin offering college courses as part of

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<sup>11</sup> Founded in 1938, the National Junior College Athletic Association coordinates multiple sports at hundreds of two-year colleges (njcaa.org).

<sup>12</sup> Henry Tappan at the University of Michigan and William Folwell at the University of Minnesota promoted the idea during the late 1800’s, but did not act first on the idea (Goodwin 1973).

<sup>13</sup> He originally called the first two years “Academic College” and the last two years “University College.” Presently, it is “the College” at the University of Chicago.

his plan to increase academic standards. J. Stanley Brown, Joliet Township High School superintendent, was influenced to start the college by his personal relationship with Harper<sup>14</sup> and Harper's offer to confer advanced status on Joliet students (Eells 1931). Designed as an experimental high school postgraduate program, it originally enrolled only six students. Designed to be parallel to the first two years at a university, the Board of Trustees of the university made the college program tuition-free. The target students for the college were people who wanted to remain in the community longer and still pursue a college education. (Joliet Junior College 2015).

The American Association of Community Colleges (AACC) has existed since 1920. “[T]he Association acted as spokesman – telling the junior college story to the government, to educational organizations, to the public, and to its administrators and faculty” (Brick 1964:89). According to Brick, early two-year colleges did not gain widespread support because of they were perceived to have an overly restrictive mission of offering only liberal arts transfer courses for students who were moving to four-year institutions. During the 1920's and 1930's, the AACC began to hold discussions on emphasizing terminal degree options at community colleges. It was at the point that the AACC sought not to “imitate the first two years of the four-year college but create an effective program of vocational curricula of the semiprofessional type” (Brick 1964:122) at two-year colleges. This resulted in a conflict that Brick described as culture versus cash with cash becoming the eventual winner. In a paper entitled *A Social Panacea*, Goodwin (1973) suggested that early two-year college developers, including those in the AACC, sought to create an ideal society through community college education by reducing the “friction between the educated elite and the masses” (13). The AACC still

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<sup>14</sup> Both men were heavily involved with area Baptist convention.

acts as the main organization for promoting the work of community colleges across the country.

Segregation was common in the early two-year colleges. All were integrated with the *Brown v. Board of Education of Topeka*, 347 U.S. 483 (1954), though it took many years to integrate the institutions (Pedersen 2000). Many times the integration involved the combination of an African American two-year college with a White two-year college. Cohen (1964) discusses much of the early work on racial integration at early two-year colleges in more detail. His work focuses on the political and administrative struggles that were involved in the integration of two racially segregated community colleges into Miami-Dade Junior College (now Miami Dade College). The overall goal of early community college integration, like many positive integration initiatives, was to make sure that all community college campuses provided equal opportunity to all.

By the middle of the 20<sup>th</sup> century, several states enacted policies funding public two-year colleges (Cohen 2001). Plans for two-year college systems began to diffuse to most states by the mid 1960's with directed federal funding for two-year colleges under the Higher Education Act of 1965. The legislation allotted money for large-scale development and expansion of community colleges as part of plans to expand higher education in general. The Act mandated that the states to create coordinating councils for community colleges in order to qualify for federal assistance. The Congressional action provided what Kingdon (1996) called a policy "window" where political support encouraged states to develop state-wide community college campus networks. The general goal was to make sure that 95% of the population had access within a reasonable commuting distance (Cohen 2001). The community colleges began to have more focus

on access and opportunity as central mission components. State plans for community colleges included oversight boards and the location of community colleges close to potential students. For example, North Carolina had only 6 community colleges,<sup>15</sup> 20 industrial education centers, and 5 educational units in 1963, and by 1969 there were 54 community colleges in the state (NC Community College System 2015). Some suggest that the state plans were the result of self-interested legislators seeking to promote business interests and employment in their own districts (Dougherty 1994).

By the 1970's, community colleges began to emphasize trade skills as options for students. This is what Brint and Karabel (1989) call a period of vocationalization in which colleges began to court corporate support and develop specific job training programs. This period also coincided with the expansion of federal funds to community colleges to help deal with unemployment concerns (Kremen 1974). Others argue that the vocational emphasis in education permeates through all types of educational institutions and is not limited to community colleges (Grubb and Lazerson 2004). Terminal two-year, or associate degree options began to grow in this present era of community colleges. Eventually, the manufacturing jobs in the U.S. economy began to shift to service and technology-oriented jobs, and community college programs began to reflect those changes (Meier 2008). American community colleges have been so successful at helping meet the educational needs of local communities that other countries around the world have replicated their structure, degrees, and operational fundamentals (Brint and Karabel 1989). A great deal of organizational literature stresses the importance of goal and mission clarity on the improvement of personal and institutional performance (Bart, Bontis and Taggar 2001, Chun and Rainey 2005, McDonald 2007).

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<sup>15</sup> Three became public universities.

## 2.5. Organization of Community Colleges

Two-year public colleges go by a variety of names depending on where they are located. In many big cities, they are “city colleges.” In New Jersey, they are “county colleges” to reflect the county where they operate. In South Carolina, they are “technical colleges” because the schools started as ways to provide workforce training for the local communities. This type of name used to be more common for workforce training schools. Some two-year institutions are just called colleges like institutions in Florida and Georgia. Many of the historic two-year colleges (mainly private ones) retain “junior college” in their names. A majority of the two-year schools in the country are called “community colleges.” For simplicity within this dissertation, I refer to all of these types of institutions as community colleges.

From the 1970’s until today, the missions of community colleges have become much broader and focused on many types of educational programs in a period that Deegan and Tillery (1985) refer to as a time of “comprehensive community colleges.” Now, the missions of community colleges reflect a variety of focal areas in a way that can make them “all-things education” for a community. In Appendix A, I present the mission statement for Pellissippi State Community College.<sup>16</sup> The mission statement includes information about the college’s many program offerings including high school equivalency, workforce training, terminal associate degrees, and transfer options. The multiple and somewhat conflicted missions for community colleges (being an introductory institution for some and a terminal institution for others) has led Dougherty

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<sup>16</sup> It is worth noting that Pellissippi State Community College dropped the word “technical” from their name in 2009 to reflect the broader mission of the college (<http://www.pstcc.edu/about/#.VgwcV3pViko>). Pictures of Pellissippi are available in Appendix B.

(1994) to refer to community colleges as contradictory institutions. Furthermore, the broad mission of community colleges can lead to institutional ambiguity, as well as challenges for students who move on to other schools and jobs (Beach 2011, Dougherty 1994).

Boards of directors normally oversee community colleges with influence usually from two main public financial sources: the state and the local municipality. The local and state missions of the schools determine the levels of funding from these two sources. Community colleges have local missions, but they are not solely funded by local governments. Though some of them receive students from a variety of locations around a state, a majority of the students at community colleges are local. Normally state legislation provides territories (usually counties) in the state where the two-year institutions are situated. The organizational structure for the oversight of community colleges varies dramatically by state (Richardson Jr. and de los Santos 2001). There are increasing struggles for community colleges because funding uncertainties lead to instability. Though the federal government has promoted increased funding for community colleges, many state legislatures have substantially cut educational funding (Beach 2011).

There are two competing views of the leadership of community colleges. In one view, the public elects state and county leaders who maintain a level of control over community colleges. Community colleges have what Dougherty (1994) calls “state relative autonomy” (36). In this view, the rise of vocationalization at the community college is a direct result of political power influence such as when governors offer private businesses “publicly subsidized employer training through community colleges” (28). In

effect, community colleges are not completely independent institutions, but rather they are institutions constrained by state officials who are seeking to maximize political benefits from their utilization. In this view, political officials use community colleges to protect their own interests. This explanation for the actions of public officials when managing the political capital associated with community colleges is commonly referred to in the literature as the theory of public choice, where political leaders make choices based on what they perceive as the most politically beneficial (Buchanan and Tollison 1972).

The other argument for the management of a community college is a functionalist one that suggests that the increased demand for educational credentials is being driven both by students and by employers who want a more educated workforce (Cohen, Brawer and Kisker 2014). In this view, the community college has become a local, market-driven educational institution where schools develop programs based on their students (Brint and Karabel 1989). Ideally, in this perspective, community colleges are flexible entities that respond independently to changes in the local labor market, and, with no exterior influence, act independently in a way that best help the community (MacAllum, Yoder and Poliakoff 2004). In the minds of some, the community college education is “a product of the society in which it operates” (Brick 1964:112). Some go further by suggesting that community colleges create the conditions that cause the demand their services (Drury 2001:27). If one was to accept this type of functionalist argument for community college education where increased credentials are a result of increased societal needs, then that would suggest that what has happened is simply “an after-the-fact rationalization” (Collins 1975:6) for the present education market situation.

## 2.6. The Present Environment

Community colleges provide what Cain (1999) calls a Wal-Mart approach to higher education by providing flexible course offerings at low prices and at convenient hours. They offer low-cost options for anyone who wants to receive more education at locations close to the communities that they serve.<sup>17</sup> There is a great deal of emphasis on increasing enrollments to keep costs low (Scherer and Anson 2014). Non-traditional means of teaching, like online classes or evening classes, accommodate students who want to work and go to school. Some colleges offer staggered start dates to classes so that students can enroll and become students even after the traditional terms have begun. The goal for most community colleges is to be flexible and bring in as many students as possible who would not normally pursued higher education (Cohen, Brawer and Kisker 2014).

### 2.6.1. Facilities

Campuses are mainly comprised of classroom and office buildings and large parking lots to accept the large number of commuters. Many campus buildings came from state capital expenditures during the 1960's and 1970's. The buildings are simple structures that emphasize access. Rural campuses usually have wide parking spaces; while, metropolitan campuses provide big parking decks. Very few community colleges provide residential options for students. There is usually very little social or gathering space on campus because students usually only stay on campus long enough to attend their classes. Some larger community colleges offer student centers where commuters can take a break between classes and dining options for students. Many older community

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<sup>17</sup> Figure 2.1, located in Appendix D, is a billboard on the Central Piedmont Community College campus that shows the marketing emphasis that community colleges place on being the low cost option.



colleges are modernizing and seeking to develop more space for the transient student population to use between classes (Brown, King and Stanley 2011), but those areas are not common. Overall, the emphasis is on student access to classes and on the affordability of classes for students.

Appendix B includes a variety of pictures of community colleges from around the country. In contrast to many older traditional colleges and universities with tree-lined walkways and Greek-inspired columns on the front of buildings, the pictures show that many community colleges have mainly 50-year-old, tan colored, cinder block buildings that emphasize simple designs and easy student access. The pictures also show the transition that some community colleges have started so that they can mimic the designs of traditional four-year institutions.<sup>18</sup> I also include pictures from an older community college (SUNY Broome) that shows how older community colleges looked like smaller (or junior) colleges.

#### 2.6.2. Remedial Coursework Offerings

Advocates of community colleges suggest that the institutions provide a diverse group of students with a variety of paths to attain higher education (Cohen, Brawer and Kisker 2014). Furthermore, advocates suggest that community colleges can improve the quality of life for people in a community by providing education to those who may not be able to otherwise afford it (Griffith and Connor 1994). Many states have shifted all postsecondary remedial coursework to community colleges so that the gateway mission of community colleges to help struggling students can be enhanced (Bettinger and Long 2007). The North Carolina General Assembly passed legislation mandating associate

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<sup>18</sup> Specifically, pay attention to the transition of facilities at Central Piedmont Community College to look more like a traditional university.

degree completion for some underperforming high school students who want to study at a state university (Worf 2016).<sup>19</sup> Community colleges are in effect a “safety valve” for underperforming students, and thus the larger universities are able to use community colleges to maintain their high admissions standards (Dougherty 1994).

### 2.6.3. Bachelor’s Degree Offerings

Presently there are 22 states that allow community colleges to offer bachelor’s degrees (Smith 2015). The baccalaureate degree programs are usually justified by college administrators and state officials because of unmet workforce needs in fields like nursing and computer technology (Daugherty et al. 2014). Florida has been doing this for many years. Most of the community colleges in Florida dropped “community” from their names as a rebranding strategy to emphasize the baccalaureate degree options. Even though there have been so many advances, the Florida state legislature instituted a moratorium on bachelor’s degree programs at former community colleges (Smith 2015).<sup>20</sup> The resistance against community college offering bachelor’s degrees is happening all over the country. There is resistance from public and private colleges and universities to what they see the bachelor’s degree options as “mission creep,” even though the colleges suggest there is an unmet need for bachelor’s degree programs at traditional four-year institutions (Smith 2015). Others argue that the degrees would make community colleges too expensive for disadvantaged students and would provide degrees that could be considered second-class (Eaton 2005). There is a real concern that community colleges may drift away from their low-cost, access-oriented roots.

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<sup>19</sup> The NC Guaranteed Admission Program passed on February 19, 2016

<sup>20</sup> Pictures of Miami-Dade College, one of the converted community colleges in Florida, can be found in Appendix B.

#### 2.6.4. Community College Faculty

The faculty is a unique part of the community college experience. Cain (1999) suggests that there are three distinct groups of faculty at a community college (academic, vocational, and adjunct). Each of these groups of faculty has a different perspective about the nature of their role as teachers. The task of a community college faculty member is to teach. In contrast to the situation at universities, there is no need for faculty members to be involved with research.<sup>21</sup> Faculty teaching loads can be substantial, and requirements for office hours can be strongly enforced (Cain 1999). Faculty design courses for efficiency. Most community college courses are taught by adjuncts or contingent faculty, and the college usually has no further employment obligation once a course is completed (Center for Community College Student Engagement 2014). Many part-time faculty need to work multiple jobs at multiple institutions in order to make enough money, so many times they are only able to provide little time for students outside of class. These part-time teachers cost community colleges substantially less than full-time faculty. Furthermore, community colleges are not always committed to giving them consistent work each semester. Significant social relationships are proven to be a critical part of developing a person's employment career (Deming 2015, Lin 1999). Because of the issues at community colleges, social relationships between instructors and students are diminished.

#### 2.7. Criticisms of Community Colleges

The community college system, a relatively open higher education system, has been criticized as suppressing student achievement in order to remain relevant and

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<sup>21</sup> There is a large emphasis at many community colleges on professional development instead of independent research.

profitable (Scherer and Anson 2014). Disadvantaged groups are more commonly present at community colleges (Cohen, Brawer and Kisker 2014). According to Cain (1999), community colleges perpetuate an American myth that everyone has a right and an obligation to be educated and the community college is a way to make it happen.

“Community college students are offered what appears to be a chance to succeed, but when they fail to obtain success, it appears to be their own fault because of a lack of academic skills or effort” (Beach 2011:126). In an extreme view, Moore (2006) suggests that differences in socio-economic class between the faculty and the students perpetuate a stratified class system at community colleges by demeaning and devaluing the efforts of lower class students (mainly those from minority racial groups). This type of issue can be referred to as the need for a “representative bureaucracy,” where the bureaucrats (i.e. the teachers) need to reflect the backgrounds the constituents (i.e. the students) in order to effectively meet constituents’ needs (Krislov 2012).

Some believe that there is a disconnect in the minds of students between the open admission standards and the program completion requirements at community colleges (Rosenbaum 2001). Skelly and Laurence (2011) reported that many school superintendents believe that the open admission policy at community colleges has a negative effect on student motivation in high school. Scherer and Anson (2014) suggest that community college are only driven by enrollment numbers and propose that reasonable admission standards combined with appropriate advisors will help provide more student success. For some incoming community college students, the level of achievement needed for success is not always clearly communicated (Rosenbaum 2001).

In an extreme view, Henry (1994) suggests closing all community colleges and replacing them with high school vocational tracks similar to the vocational tracks of years past.

## 2.8. Connections between History, Politics, and Research

From this political and historical review of community college, it is clear that the sub-bachelor higher education market has evolved over the past 50 years. Community colleges have shifted from being junior colleges for the first two years of a bachelor's degree to becoming community education centers that provides a range of programs for different groups of students. Usually, though not always, students come from a variety of backgrounds and pursue a variety of educational options all with the hopes of making a better life through more education. This hope is a key reason why generations of politicians from both political parties have supported these institutions and suggested that community colleges can help solve communities' economic problems (even though many state legislatures cut higher education funding). There are still continual challenges to their existence, particularly within the debate over whether they equalize the employment market or reinforce established social barriers.

Do community colleges positively affect the lives of students who attend such institutions? Some suggest that present "studies do not adequately address why some students choose to begin college at a two-year institution even though they would seem to have the academic background and aptitude required for admission to and success at a 4-year college" (Townsend 2007:129). For many, going to community college is not just a rational choice; it is the only choice for postsecondary education. Some suggest community colleges work as bridges by attracting people who may have not been able to

go to college through traditional means (Cohen, Brawer and Kisker 2014). These contradictions fuel my research.

The intention of this chapter is to show that community colleges are the products of state government attempts to bring education to communities, and, in a sense, separate students who are weak from others who are better. They can be considered a value-added institution, with limited means for student social development. Overall, community colleges have positioned themselves as low-cost higher education alternatives for generations (See Figure 2.1). The institutions are enrollment driven and, many times, that results in contradictory mission objectives for students (Scherer and Anson 2014). The next chapter presents descriptive statistics about who goes to community colleges and how they differ from students who go to four-year institutions.

## CHAPTER 3: STUDENT BACKGROUNDS AND OUTCOMES

This chapter examines the differences in the backgrounds and the outcomes of the students who took part in the ELS. Within the last 60 years, there has been a great deal of literature that has highlighted distinct differences between community college students and four-year institution students (Cohen, Brawer and Kisker 2014). The purpose of this chapter is to provide a comparison of the respondents based on where they started their higher education and the final degree they achieved. Additionally, I wanted to examine differences in the perceptions of respondents based on their educational attainment level. I used the findings in this chapter to develop control variables that were part of the analyses in the next three chapters. Each table in this chapter has the number of people in each category rounded to the nearest 10 responses. The results in this chapter are divided into four main areas: background, higher education, post-graduation, and work perceptions.

### 3.1. Backgrounds of Respondents

The section presents the background characteristics of study respondents. I organize the responses by the initial type of post-secondary institution that the respondent attended after high school (community college or four-year institution). The responses draw attention to some similarities among respondents' demographics and differences in the economic well-being of the respondents' families and community. There were also differences in the respondents' high school performance.

### 3.1.1. Demographics

Several studies suggest that minorities and women are more likely to choose community colleges (Calcagno et al. 2008, Gittell 1986, Moore 2006). With regard to the young students in this study, the results do not strongly support correlations between race or gender and post-secondary education attendance choices (Table 3.1). Within the racial composition of the students who enrolled at four-year institutions and the students who enrolled at community colleges, there were only about 1% differences in the percentages of most racial subgroup categories. The only major difference was that there was about nine percent more of the students who enrolled in four-year institutions that were White when compared to the percentage of White students enrolled in community colleges. Also, nine percent more of the students who enrolled at community colleges were Hispanics when compared to the percentage of Hispanics who enrolled at four-year institutions. The results also indicate no difference in the gender percentages of these respondents in the two types of institutions (about 45% male entering both types of institutions).

Previous research found racial and gender differences in the student body of community colleges and four-year institutions (Cohen, Brawer and Kisker 2014). The results from this study do not imply that previous studies were wrong; the findings of this study just suggest that there are very few differences in the racial and gender makeup of students enrolling in higher education directly from high school. Older students in community colleges are more than likely to be minority and from disadvantaged backgrounds (Cohen, Brawer and Kisker 2014), and this present study does not examine students who entered higher education more than eight years after high school.



Though there were many similarities in the gender and race of the distribution respondents who initially enrolled in the two types of institutions, there were big differences in their families' annual incomes and socioeconomic status (Table 3.1). Slightly more than 60% of the respondents who went to four-year institutions had family incomes greater than \$50,000. In contrast, more than 57% of the respondents who went to community colleges had family incomes less than \$50,000. Additionally, the four-year institution entrants had an average socio-economic status (SES) that was higher than their community college peers (0.41 compared to -0.01). The ELS study team calculated the SES of respondents based on five equally weighted, standardized components (mother's and father's education, mother's and father's occupations, and family income). The values ranged from -2 to 2. Additionally, community college entrants viewed, on average, about a half of an hour more TV per week in high school than did four-year entrants. Also, about one third of community college respondents worked more than 20 hours at a job each week. Less than 20% of four-year respondents worked more than 20 hours each week in high school.

There were many differences in the high school performances of students in the two groups of respondents (Table 3.2). Four-year students were, on average, stronger academically and more involved with activities in high school than their community college counterparts. The average four-year students' high school grade point average (GPA) was 0.6 higher than the average GPA of community college students. On average, four-year entrants participated in one more activity during high school than the average community college entrant did. About 16% more of the four-year students participated in high school athletics than community college students did. Community college students

were twice as likely to take English as a Second Language courses in high school as four-year students were. Additionally, 10% more of the four-year entrants' parents took part in parent-teacher activities when the respondent was in high school than the community college entrants' parents did.

### 3.1.2. Parents

Table 3.3 presents parents' education and occupations. Overall, education levels were very similar between mothers and fathers of the respondents. A slightly higher percentage of fathers than mothers had either graduate degrees or high school diplomas or less. Mothers more commonly indicated that they had some education or graduated with a bachelor's or an associate degree. If the mother or father had completed at least a bachelor's degree, the respondent was more likely to attend a four-year institution. If the respondent's parents' highest level of education was graduating from a community college or less, the respondent more commonly went to a community college after high school.

Regarding occupations of the respondents' parents, there were some gender-specific differences. The most common occupations for mothers were clerical work, professionals A (jobs that primarily require a bachelor's degree), and service-oriented jobs. The popular occupations for fathers were managers, professionals A, and craft persons. The results indicate a clear relationship between parent's occupation and the level of schooling that the respondent decided to pursue. Children of parents in blue-collar occupations such as laborer or service personnel more commonly went to community colleges. Students whose parents were in white-collar occupations such as managers, professionals A, professionals B (jobs that require advanced degrees like

lawyers or medical doctors), made up higher percentages of students at four-year institutions. For certain parent occupations, however, there was almost no differences in the percentage of students at either type of institution. For example, similar percentages of respondents at four-year institutions and community colleges had fathers and mothers who were clerical workers, protective workers, or technical workers. There were some heavily gender-segregated occupations such as clerical work for women and craft work and operations work for men. The gender-specific differences support previous research that suggest the presence of gendered occupations (Charles and Grusky 2004).

### 3.1.3. High School

There were many similarities and some unique differences in where the community college and the four-year respondents went to high school (Table 3.4). Over 85% of the community college students came from public school but fewer than 70% of the four-year students did. A larger percentage of students who went to four-year institutions came from urban high schools. The average crime rates for the respondent's high school were very similar for both groups of students, though there was a slightly larger percentage of students from high and moderate crime neighborhoods at community colleges. Both groups of respondents came from high schools that had similar percentages of full-time teachers (about 74%). The average salary for the lowest paid teacher in the school was very similar for both groups of respondents (an average of about \$500 higher for the lowest paid teachers at the high schools of students who went to community colleges when compared to the average lowest paid teachers at the high schools of students who went to four-year institutions). Community college respondents came from high schools that were on average about 100 enrolled students larger than the

high schools of four-year respondents. Additionally, community college students came from high schools that had on average about 7% more minority students than the percentage of minorities at four-year respondents' high schools. The average student-teacher ratios at the respondents' high schools were very similar for the two groups (16.11 to 1 for the high schools of community college students, and 17.06 to 1 for the high schools of four-year institution students).

Table 3.5 presents a comparison of some average performance statistics of the respondents' high schools. Four-year institution students were more likely to come from high schools where a larger percentage of previous students went to colleges and universities, a finding that is consistent with previous literature (Weis, Cipollone and Jenkins 2014). Community college students were more likely to come from high schools where 25% or more of their previous students went directly to the workforce after high school. Additionally, community college students, on average, came from high schools where a slightly higher percentage of seniors fail the state's competency test.

Upward Bound and Talent Search are two Federally-sponsored programs that seek to assist disadvantaged high school students in their pursuit of higher education. The percentage of students at a high school who take part in these programs is relative to the percentage of disadvantaged students at that high school. These percentages can, therefore, be relative proxies for the degree of disadvantage in those bodies of students. According to the data used in this study (in Table 3.5), the high schools from which the four-year and community college respondents originated had very similar rates of Upward Bound and Talent Search participation. Approximately half of all the

respondents were from high schools that had no students in these programs. Very few of the respondents in the ELS took part in the program.

#### 3.1.4. Residential Zip Code Statistics during High School

In Table 3.6, I merged zip code data from the 2000 U.S. Census with each respondent's data based on each respondent's reported home zip code when he or she was in 10<sup>th</sup> grade (2002). In general, the respondents who went to four-year institutions and the respondents who went to community colleges came from very racially similar communities. The average percentage of Hispanics and African Americans and the percentage of residents living in poverty in the respondents' zip codes were only slightly higher in the home areas of community college respondents. On average, students at four-year institutions had a slightly higher percentage of owner occupied homes and married families in their zip codes. There was also a slightly higher average percentage of bachelor's degree completion among residents in the zip code areas of four-year respondents. The only large difference was in the mean family income for the zip code areas of the two different groups of respondents. The average annual incomes for families in communities where four-year respondents' resided were on average about \$8000 higher than those in communities where community college respondents resided. Overall, community college students were more likely to come from zip codes with high percentages of poverty.

### 3.2. Higher Education

Table 3.7 presents respondents separated by their initial post-secondary institution. Almost three quarters of the four-year starters attended a moderately or highly selective institution. More than 70% of the students who started at four-year institutions

accepted financial aid, while about 44% of the students who started at community colleges accepted financial aid. The average higher education GPA of the students who started at four-year institutions was 0.4 points higher than the average higher education GPA of the students who started at community colleges (a difference that is considerably similar to the difference in high school GPAs noted in Table 3.2). Community college entrants and four-year institution entrants were almost equally likely to take remedial math and English courses at their postsecondary institutions.

Generally, the paths of four-year and community college students diverged in a number of important ways during their time in higher education (Table 3.7). About half of the four-year students attended more than one college or university, while a smaller percentage of community college students attended more than one college or university. Additionally, on average, one in four of the four-year students attended a community college during their academic careers. On average, four-year entrants earned about 108 credit hours at colleges and universities and about 9 hours at community colleges. Community college entrants accumulated on average about 48 credit hours at community colleges and 24 credit hours at colleges and universities.

Community college starters had a harder path to higher education than four-year starters (Table 3.7). Less than 60% of community college starters indicated that they could pursue higher education without having to work. In contrast, more than 70% of college and university starters did not have to work while studying. About 10% of four-year entrants and more than one third of the community college respondents delayed their enrollment and did not start immediately after high school. Compared to four-year students, over twice as many community college students were living at home 2 years

after high school. Additionally, about 80% of four-year entrants but only slightly more than 40% of community college students were still enrolled full-time in higher education 2 years after high school. Specifically, only about 6.5% of the community college students were studying fulltime at a college or university two years after high school. About three quarters of the students who started at a college or university were still enrolled fulltime at a four-year institution two years after high school.

Overall, more than one third of all the respondents who enrolled started at a post-secondary institution had not finished a degree eight years after leaving high school (Table 3.7). More than half of the students who started at community college did not obtain any college credential during that timeframe. More than 30% of the students who started at a community college received a certificate or an associate degree. Almost 60% of the students who started at four-year institutions received at least a bachelor's degree. About 10% of the students who started at a four-year institution received a credential associated with community colleges (certificates and associate degrees). Most respondents did not pursue multiple post-secondary credentials (Table 3.8). Over 92% of certificate holders, 82% of associate degree holders, and 88% of bachelor's degree holders did not complete a higher level credential after they finished their first degree program within the timeframe of the study.

Table 3.9 presents much of the same data on student financial aid and higher education GPA as Table 3.7, but the table presents data by the final degree earned. When organized by the highest degree earned, the data reveal some differences in the percentages of graduates who accepted financial aid and in the amounts they received. The results identify a relationship between the level of degree earned and the percentage

of respondents accepting financial aid. Particularly, there was a difference between the percentage of associate degree and certificate holders receiving financial aid (less than 57%) and that of the bachelor's and graduate degree holders (more than 65%). On average, certificate earners owed less than \$9,000 in financial aid. Associate degree recipients owed on average about \$5,000 more than did certificate holders. Bachelor's degree recipients owed more than \$23,000 in student debt. That amount of debt more than doubles for graduate degree earners (\$56,372.50 on average).

The results also identified a noteworthy difference in the higher education performance of the respondents (Table 3.9). The average GPA was progressively higher for each successively higher level of degree attained. Respondents who received certificates had the lowest average GPA (2.61), while respondents who received graduate degrees had the highest average GPA (3.40). Most non-completers attended multiple schools. Many community college graduates went to a four-year institution. On average, associate degree holders and certificate holders had attended 0.84 four-year institutions, while bachelor's degree holders averaged out at about 0.34 community colleges attended. Bachelor's and graduate degree holders had an average of between 124 and 127 hours of college and university credit. Associate degree holders averaged slightly more than 60 hours of community college credit. These two totals are similar to the regular amount of hours required for such degrees. On average, non-completers had about 34 hours of college or university credit hours and 20.5 hours of community college credit. Almost no bachelor's and graduate degree holders delayed enrollment into post-secondary education after high school, whereas a large percentage of non-completers, certificate holders, and associate degree holders did delay their enrollment. Additionally about 30% of non-



completers and associate degree holders were still taking classes at a post-secondary institution eight years after high school. In contrast, between 15 and 20% of the certificate, bachelor's, and graduate recipients were still taking classes eight years later.

The most common majors were unique to each credential (Table 3.10). Almost half of the people who received certificates majored in health and clinical fields (47.27%). This field of study includes people who complete certified nursing assistant programs. The next most common certificate program was for mechanics and repair technicians (10.11%). Almost one third of the people who pursued only an associate degree, majored in liberal arts or general studies. This general studies degree is primarily for students who wish to transfer to a university. The second most popular field for associate degrees was health and clinical fields (17.73%, mainly for nursing students). The overall most common field was business, which accounted for 1/5 of all bachelor's degrees. The other popular bachelor's degrees were social sciences, health, biology, and psychology.

### 3.3. Work and Family Characteristics in 2012

The following section examines differences in the employment and family situation of the respondents in 2012. I organized the responses by the last degree that the respondents achieved. The variables in this section examine the types of jobs that the respondents are doing and how much they are getting paid. I also examined the family and residential situations of the respondents during that time as well.

#### 3.3.1. Employment

Table 3.11 summarizes some of the employment statistics for the respondents in 2012. Approximately 65% of the respondents with at least a bachelor's degree worked at

only one fulltime job. At that time, they were also the least likely to be unemployed. In contrast, of the respondents with no degree, a certificate, or associate degree, only slightly more than half of those people worked at only a single fulltime job. Between 12-14% of the respondents in those categories were working only a part-time job. Also, about 43% of the respondents who had only some college time or a certificate had been unemployed between 2009 and 2012. In contrast, of the respondents who had associate degrees, bachelor's degrees, or graduate degrees, slightly more than one third were unemployed during that same period.

The study collected salary information on the respondents for two different times: 2005 and 2011 (as a part of the second and third follow-ups, noted at the bottom of Table 3.11). The group of respondents with the highest annual salary in 2005 was the group of future certificate holders. The next highest salary group was the future associate degree holders and the people who have only some college time and no degree. At that time, their incomes were almost double the average salaries of future bachelor's and graduate degree holders, which makes sense because most bachelor's degree students were likely still to be full-time in school during that time. Previous research has shown that community college students were more likely to hold down jobs while they were studying (Cohen, Brawer and Kisker 2014). The average salaries changed dramatically at the next follow-up six years later. Bachelor's degree holders made almost \$34,000 on average. Earners with graduate degrees made a little more than \$30,000.<sup>22</sup> Respondents who gained some college time, certificates, or associate degrees earned, on average, between the low and mid 20,000's.

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<sup>22</sup> It is possible that returns to graduate education take longer than eight years to materialize.

Table 3.12 identifies the respondents' types of occupations in 2012 based on O\*NET job family codes.<sup>23</sup> Overall, the respondents who were in blue-collar occupations in fields such as production and services were mostly non-completers, certificate recipients, and associate degree recipients. Construction and maintenance occupations were almost entirely non-completers and community college degree (certificates or associate) holders. The most common occupation for all respondents was office and administrative support (14.32%). Most of the respondents in these positions had either an associate degree or some college time but no degree. Bachelor's and graduate degree holders were more likely to be in professional occupations. Over 20% of the graduate degree holders were educators and another 20% were healthcare providers.

Interestingly, some white-collar jobs were not always held by highly educated individuals. For example, management positions, which was the second most common employment category, were held by individuals with different educational backgrounds. In the same way, the computer professions, a less popular occupational area, also included people from broad educational backgrounds.

### 3.3.2. Respondents' Family Situation

For those respondents who completed degrees, there were some interesting differences in their family situations in 2012. Individuals with a bachelor's degree or higher were more likely to be single. It was more common for the people with community college degrees to be married than it was for the other respondents (roughly about 1/3 of community college degree holders compared to about 1/4 of the rest). On average, non-completers, certificate holders, and associate degree holders had more

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<sup>23</sup> Information available at <https://www.onetonline.org/>

children than bachelor's and graduate degree holders did, though no group averaged more than one child per person. Almost all of the respondents were paying rent where they were living. Almost 37% of the associate degree holders, the group that had the greatest proportion of married respondents, were paying a mortgage toward a home. Additionally, there was an inverse relationship between level of education and the percentage of degree holders who used public assistance during 2011. Specifically, less than 5% of the bachelor's and graduate degree holders had received public assistance, while about 25% of the non-completers and certificate holders had received public assistance.

### 3.3.2. Residential Zip Code Statistics in 2012

I used five-year averages, weighted to 2012, from the American Community Survey to investigate respondent's communities (Table 3.14). I merged the data based on the respondent's zip code in 2012. Overall, the average zip code statistics related to degrees received are very similar (much like the information in Table 3.6). The main differences in the responses were in the financial and educational statistics. Bachelor's and graduate degree holders were more likely to live in neighborhoods that had more bachelor's degree holders. Furthermore, bachelor's and graduate degree holders were more likely to be in communities with not as many owner-occupied houses than the communities of the other groups. The bachelor's and graduate degree respondents also lived in neighborhoods that had average incomes of more than \$40,000, while non-completers, certificate holders, and associate degree holders were in communities with average incomes of only about \$35,000. The communities where the non-completers, certificate holders, and associate degree holders lived averaged slightly higher unemployment rates and percentages of people in poverty than did the communities

where the bachelor's degree holders and graduate degree holders lived, though the differences only amounted to about 1-2%.

### 3.4. Perceptions of Education and Employment

This section summarizes respondents' responses to questions about their education and employment during the third follow-up in 2012. I added this information to provide a better understanding of the respondents' perspectives about their education and employment and to help make the case that social closure could have an effect on the types of employment people obtain.

#### 3.4.1. Non-Completers

Approximately 2400 of the respondents who did not complete an educational credential answered questions about why they never finished their studies (Table 3.15). About half of these people started at community colleges and the other half at four-year institutions. The respondents most commonly answered that financial considerations led to their decision to leave school early. Over half all the respondents said that they could not afford to continue. Slightly less than half responded that they would rather earn money than continue. Community college non-completers were more challenged from home and family situations than were four-year institution non-completers (8% more community college non-completers noted changes in family and about 4% more non-completers noted demands at home). Lack of available classes affected about 5% more of the community college non-completers than of the four-year institution non-completers. Overall, the results were very similar for both groups.

### 3.4.2. Perceptions of Employment

The study asked respondents about the relationship between their job and their field of study (Table 3.16). About 40% of the certificate and associate degree holders were in positions not related to their field of study, while only 30% of bachelor's degree holders were in unrelated jobs. Additionally, 47% of bachelor's degree holders and 71% of graduates indicated that their job would be difficult without their college coursework, while only about 38% of certificate and associate degree would agree with that statement. Interestingly, only about 1/3 of associate degree holders were in positions that required associate degrees (less than 6% were in positions that required a bachelor's degree). In contrast, 58% of bachelor's degree holders were in positions that required bachelor's degrees.

The next set of questions asked respondents about characteristics of their current job (Table 3.17). The respondents' rated statements on a scale of 1 to 5, with "1" indicating something that was "definitely not an aspect of the job" and "5" indicating something that was "very much an aspect of the job." I completed a t-test of the responses for each degree holder versus the responses of the non-completers to better distinguish differences in the responses to this set of questions (t-scores are omitted from the table and only significant levels are listed). Most of the respondents' answers ranged between 3 and 4. On average, respondents from all degree programs marked "opportunities to learn new things" and "new challenges" the highest as a characteristic of their present job. The responses of all of the degree and certificate holders were significantly higher than the responses of non-completers. Within that group, graduate degree earners had the highest average response for these statements. Graduate degree

recipients also provided the responses that were average for the statement indicating those who considered their jobs “useful for society”. The observed differences in the average responses of how all the credential groups rated their job security were very small. The concept of “high earnings” had the lowest average response overall. On average, this statement was marked highest by certificate and associate degree holders, though these people had the lowest average annual salaries of any of the credential holders. There were very similar average responses on the “time for leisure” and “work-family balance” statements. In both cases, differences between the responses of the other groups and the responses for the non-completers were not significant or not as significant.

#### 3.4.3. Perceived Employment Barriers to Success

The study asked respondents to identify employment barriers to their future career success. Table 3.18 identifies the percentage of each degree category that responded affirmatively to the employment barriers statements. About 40% of non-completers and one third of associate degree holders felt that they did not have “the required credential.” On the same note, about 20% of the bachelor’s and graduate degree holders felt they were “overqualified.” Respondents in the two higher educational groups were also more likely than respondents from the other three groups to say that there was a “lack of openings” to improve their employment. About 29% of bachelor’s degree holders and 25% of graduate degree holders felt they lacked social connections. These percentages were much higher than those of the responses of the non-completers, certificate holders, and associate degree holders.

### 3.5. Summary

This chapter presents an overview of the data and themes. Additionally, I present summary statistics about the respondents in the study. Overall, the results indicate that grades, finances, and communities are factors that affect students' choices of where to study in higher education. As in previous studies (Cohen, Brawer and Kisker 2014), however, social components are influential factors in determining where a person pursues post-secondary education. Factors such as parents' occupation, the numbers of bachelor's degree holders in a community, and activities in high school can all have an impact on where a person studies in postsecondary education. There have been years of research that suggests that high schools and communities play a role in where a person chooses to go to college (Pryor et al. 2007). The summary statistics in this chapter reinforce previous research that suggest that socio-economic class affects higher education and career opportunities (Bowen et al. 2005, Cookson and Persell 1985, Guinier 2015, Haveman and Wilson 2007, Karabel and Astin 1975) and those differences in opportunities go back to when students are in secondary school (Weis, Cipollone and Jenkins 2014).

There were some substantial differences between the students who graduated with community college degrees and the students who graduated with bachelor's and graduate degrees. Only about one third of the associate degree holders have positions that require such a degree and almost none of them were in positions that required a bachelor's degree. In contrast, almost 60% of bachelor's degree holders were in positions that required bachelor's degrees. Additionally, roughly a third of the associate degree holders suggested that they experienced employment barriers because of not having required educational credentials. The people with associate degrees and certificates are less likely



than bachelor's degree and graduate degree holders to be working fulltime at one job. Community college degree holders are also more likely to be married and have children. In effect, community college graduates are more likely to be in less prestigious occupations and are more likely to have more challenging work and lifestyle issues happening in their lives.

The findings from this chapter imply that the middle labor market proposed by Grubb and Lazerson (2004) may be more complicated than simple employment opportunities. The people who go to community colleges come from more disadvantaged backgrounds. Compared to bachelor's degree graduates, the people who graduate from community colleges work in less stable, lower paid positions that can be considered lower quality (Tilly 1997) or potentially "secondary" (Kalleberg and Sorensen 1979) to the positions held by bachelor's and graduate degree holders. There is evidence to suggest that there is an nationwide increase in lower paid, more precarious jobs (Kalleberg 2011). The noted growth in opportunities for community college graduates by Grubb and Lazerson (2004) may actually be the result of the noted increase in the duality of labor market opportunities (Piketty 2014). The mid-level labor market may just represent the high end of the lower quality employment opportunities.

In conclusion, there are many differences between the people who study at community colleges and the people who study at colleges and universities. There are also many differences in the outcomes based on the type of degree that a person has achieved. These differences go beyond academic ability and include many economics and community factors. In the next three chapters, I present results of four different analyses that I did using the data in the ELS. I base the control variables in those analyses on

differences noted in this chapter's findings. I also draw references to the summary statistic findings in this chapter when I discuss the research results in the next three chapters. Overall, I use the variables in this chapter to control for other effects so that I can focus on the presence of institutional effects in my investigation of social closure in the opportunities given to students who study and graduate from community colleges.

## CHAPTER 4: COOLING OUT REVISITED

*A major problem of democratic society is inconsistency between encouragement to achieve and the realities of limited opportunity.... Thus democratic societies need not only to motivate achievement but also to mollify those denied it in order to sustain motivation. (Clark 1960b:569)*

For over 50 years, literature has debated how community colleges reinforce class structure within the United States. Early theorists suggested that social action by the educated elite created the dual higher education system in the U.S. to reinforce the American class structure (Bowles and Gintis 1976, Karabel 1972, Zwerling 1976). Most studies, even those from proponents of community colleges, highlight the predominance of lower socio-economic students in community colleges (Cohen, Brawer and Kisker 2014, Gittell 1986, Moore 2006). Community colleges help students, especially those from disadvantaged backgrounds, by the provisions of open admission standards, remedial academic support and cheaper tuition rates. These provisions are an attempt to overcome the historic policy restrictions that have existed in American higher education since its origin (Cohen, Brawer and Kisker 2014). Some suggest that the provisions work to manage student ambition and keep the disadvantaged in community colleges as a way to retain social order (Bowles and Gintis 1976, Brint and Karabel 1989, Zwerling 1976).

Student interest in pursuing post-secondary education is clearly evident. Presently, there are more students applying to more colleges than ever before (Pryor et al. 2007). Not all students can, however, attend the most prestigious institutions. Some believe that students' post-secondary education expectations tend to accord with the

degree of social advantage they possess (Bozick et al. 2010). Those from socially elite backgrounds pursue higher education at the premier colleges and universities while the disadvantaged are relegated to community colleges (Karabel 1986). This debate originates from historical accounts that suggest that the original two-year colleges were designed to act as sieves to weed out poor students from attending senior colleges (Eells 1931).

Contributing to the debate about the relationship between community college attendance and social class has been the argument, over the past 30 years, that faculty and advisors at community colleges fail to encourage students from low socioeconomic backgrounds to move forward to four year institutions (Brint and Karabel 1989, Karabel 1986, Scherer and Anson 2014, Zwerling 1976). Instead, the argument suggests that community college staff seek to place students in terminal degree programs in vocational fields. In a seminal paper examining the impact of community colleges on student achievement, Clark (1960b) claimed that community college counselors and faculty members were “cooling out” students from lower socioeconomic positions by convincing them that they had an opportunity in higher education while at the same time gently persuading them that they were not college material, thereby relegating them to terminal 2-year degree options. According to Clark, cooling out is a secret tracking process that begins with pre-entrance placement testing. It continues through student counseling, when advisors help students find a major field where they can succeed even if their grade point average is low. The process seeks to reorient aspiring but low-achieving students rather than dismiss them (Moore 1975). The concept of cooling out is directly related to the theory of social closure because the process seeks to maintain a social order.

The question that arises, however, is what value researchers should assign to 50 year-old criticisms and a 65 year-old hypothesis. When the cooling out hypothesis was originally developed, the expansion of community colleges was in its infancy. The ideas were derived from analysis of students and staff at just a few institutions. Now, community colleges are an ingrained part of the higher education system. As discussed in Chapter 2, they are located within a respectable driving distance for almost anyone in the U. S. and, for many programs, they provide open admission standards, so that anyone may attend. In the view of Scherer and Anson (2014), the open access policy creates an access effect. “The insidious effect of zero admission standards (at community colleges) is disproportionately shouldered by those most likely to know years in advance that they will be attending the local community college: low-income and rural students” (Scherer and Anson 2014:118). President Obama (2015b), however, believes that community colleges are the answers to communities’ economic woes, and that two years at a community college can provide people with the skill-sets needed in the present job market. Therefore, it is evident that there is a present emphasis towards encouraging community college students to study in terminal degree programs. In the present higher education environment, it is politically relevant, therefore, to investigate if student ambition is being influenced for those who attend community colleges.

#### 4.1. Community Colleges and Student Ambitions

Admissions officers for community colleges sometimes present the institutions as gateways as places where anyone can start on his or her path toward a bachelor’s degree. Scherer and Anson (2014) suggest that community college enrollment targets are leading community colleges to admit students by encouraging them with “promise of a

reasonable chance of success... [but] perpetuating a cruel hoax” (2) that a college education can be for everyone. Though the original research on the subject included case study interviews from a California community college (Clark 1960a), since that time research studies have tested the hypothesis using a variety of different formats. Researchers have used in-depth interviews (Deil-Amen 2006, Moore 1975), institutional and system-specific longitudinal student data (Alba and Lavin 1981, Alexander, Bozick and Entwisle 2008, Bahr 2008, Conway 2010, Hellmich 1993), and national student studies (Adelman 2005, Cellini 2006, Laanan 2003, Park and Pascarella 2010) to test whether the cooling out hypothesis exists.

There has been a great deal of research into the educational aspirations of students from disadvantaged backgrounds. Students’ family and friends (specifically those of minority students) have a direct impact upon students’ higher education aspirations (Cheng and Starks 2002, Wilson and Wilson 1992). Overall, Rowan-Kenyon, Perna and Swan (2011) argued that students from middle and high socioeconomic status groups are generally more academically oriented. Goldrick-Rab (2006) found that students from low SES backgrounds are more likely to experience interrupted pathways to degree completion. Furthermore, students from low socioeconomic status families are more likely to follow a vocational track rather than an academic track in school (Haveman and Wilson 2007, Rowan-Kenyon, Perna and Swan 2011). Even when students from low socioeconomic backgrounds have appropriate academic skills, disadvantaged students often lack support from social networks to enroll and stay in colleges and universities (Persell and Cookson 1985, Weis, Cipollone and Jenkins 2014).

Other research suggests that students from disadvantaged backgrounds, including racial minorities (Calcagno et al. 2008, Moore 2006), immigrants (Conway 2010), and women (Gittell 1986, Johnson, Schwartz and Bower 2000), are more likely to have trouble persisting with study while at community colleges. Research has suggested that racial minority students have high educational aspirations (Cheng and Starks 2002, Qian and Blair 1999, Wilson and Wilson 1992). Their expectations, however, are not always in line with their achievement (Mickelson 1990, Ogbu 1991). Immigrant students are more likely to have higher educational aspirations than students who were born in the U. S. have (Conway 2010). There are mixed results related to the impact of gender on educational expectations. Qian and Blair (1999) found no difference in educational aspirations by gender, though poorer families placed higher expectations on male students. In contrast, Garrison (1979) found that gender roles have a stronger effect on educational aspirations than do socio-economic status or ability.

Many studies support the cooling out hypothesis. Comparing two groups of students from similar educational backgrounds who applied to City University of New York campuses (one group was accepted to university campuses and the other group enrolled at community college campuses), Alba and Lavin (1981) found that the community college students were less likely to continue in school and finish a bachelor's degree than were the four-year university students. Cellini (2006) examined students in high school who took college preparatory classes at community colleges using funding provided through the Tech-Prep Education Act and found that these students were more likely to complete the program and enroll in community college and less likely to enroll in four-year institutions. Additionally, Cellini found that the siblings of students in the

Tech-Prep programs were more likely to enroll in such programs. Taking into account students' precollege socioeconomic statuses (SES), Park and Pascarella (2010) found that attending a two-year college had a modest negative impact on students' occupational and educational goals.

Some smaller studies have investigated the cooling out of students from disadvantaged groups. Using students from a New Jersey community college, Olandt (1987) found that female students and students from lower SES families were more likely to be cooled out (though he included students who moved from an associate degree program to a certificate as part of the cooled out group). Moore (1975) interviewed a group of 62 women and found that cooling out from the institution and from outside sources seeks to shift women towards more traditionally gendered occupations and away from finishing bachelor degrees. Using a small sample from two Florida community colleges, Kaliszeski (1986) found that cooling out happened "significantly more often with minority students than white students" (107).

More recent work examines how to help disadvantaged students. Kingsley (2010) interviewed 60 students at two-year public institutions in Texas and found that minority students needed an environment that was more nurturing toward their own success. She suggested that more support programs and more minority administrators and faculty can help encourage minority students to succeed. In another recent qualitative study, McKenzie (2014) added that organized student support services for disadvantaged students are key to maintaining high aspirations for students from disadvantaged background who study at community colleges. In particular, research has demonstrated that active counseling did not lead to increased cooling out of minority students, but



rather, the counseling helped overcome gaps in minority group completion and achievement (Bahr 2008).

There are also institutional considerations that play a role in student aspirations. Hellmich (1993) found no institutional variables that were statistically significant in predicting a student being cooled out. Laanan (2003), however, found that the percentage of students who had aspirations to obtain a bachelor's or higher degree was higher at private two-year colleges than at public two-year colleges. Laanan's study did not, however, examine what percentage of those students actually pursued more education.

There has been comparable work that has challenged the existence of cooling out among community college students. London (1978) found that many community college students want to try college, but they mistrust themselves as scholars and leave college at the first sign of difficulty. In London's view, the responsibility for students dropping out lies with students and not with community college administrators. Overall, most results suggest that only around 20-30% of community college students cool out, while similar percentages of community college students exceeded their educational expectations (Conway 2010, Deil-Amen 2006, Hellmich 1993).

There has been a great deal of work on the concept of "warming up," a concept referring to the opposite of cooling out or increased educational ambitions for students who attend community colleges. The idea is that students gain academic confidence in community colleges and use that confidence as motivation to pursue more academic studies. Adelman (2005) found that more students maintained or raised their expectations<sup>24</sup> of receiving a bachelor's degree if they enrolled in a community college

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<sup>24</sup> He argues the term, "aspiration," is incorrectly used to discuss the post-secondary expectations of high school students, so he uses the term, "anticipation," to discuss the same concept.

institution within 7 months of high school graduation. He also found that when community college students took more science, technology, engineering, and mathematics courses, students maintained their expectations of pursuing a bachelor's degree. Deil-Amen (2006), using qualitative interview data, found that when community college students have encouragement and support from faculty and counselors, they develop increased confidence in their possible academic success. Alexander, Bozick and Entwisle (2008), using data from a longitudinal study of youth in Baltimore, additionally found that attending a community college may "warm up" rather than "cool out" student expectations of obtaining a bachelor's degree.

Some researchers have argued that the present body of literature relies on a misguided assumption that all students, regardless of institution, have a consistent motivation to pursue a bachelor degree and that students from community colleges are inappropriately encouraged to become part of the lower social class by completing associate degrees. Using data from multiple sources to investigate student motivation, Romano (2004) noted that the commitment to education of many community college students may be weaker than that of students at four-year institutions, and they therefore may be satisfied with less than a bachelor's degree. In this view, it may not be the administrators who are responsible for lowering students' educational aspirations. Furthermore, Alfonso, Bailey and Scott (2005) found that community college students in vocational, rather than in occupational tracks, had lower levels of commitment to their educational expectations and were less likely to finish a degree.

Overall, the results show mixed support for the "cooling out" hypothesis. It seems that both institutional and student characteristics have roles in the students' decisions to

go no further than a community college certificate or degree. It is not clear whether there are differences between those students who study further and those who discontinue their studies after starting at a community college. Additionally, there is no clear indication in the present literature how earning community college credentials affects students' decisions to go further or stop. In light of these mixed results, it is worthwhile continuing the discussion by examining the backgrounds and outcomes of students who complete programs at community colleges but who choose not to continue their education further. Based on the present literature, I hypothesize:

1. *Starting at a community college negatively affects a person's ability to meet or exceed his or her 12<sup>th</sup> grade educational expectations of receiving a bachelor's degree.*
2. *Time spent studying at a community college negatively affects a person's ability to meet or exceed his or her 12<sup>th</sup> grade educational expectations of receiving a bachelor's degree.*
3. *Achieving an associate degree negatively affects a person's ability to meet or exceed his or her 12<sup>th</sup> grade educational expectations of receiving a bachelor's degree.*

#### 4.2. Methods

The data for this analysis come from the Educational Longitudinal Study (ELS). The ELS follows 16,190 10<sup>th</sup> graders in 2002 through 2012. The variables used in the study come from different waves of this study. Mainly, I compare educational expectations in the 12<sup>th</sup> grade with the credential each respondent earned in 2012. Though many previous studies looked at all types of degree expectations, I used only respondents

who expected to earn a bachelor's degree (about 2550 of the respondents) because it was the basis for Clark's (1960b) original argument for cooling out. Furthermore, a bachelor's degree was the most common educational expectation for respondents.

#### 4.2.1 Variables

The ELS asked the respondents in 10<sup>th</sup> grade (2002) and 12<sup>th</sup> (2004) to indicate the level of education that they planned to complete. The dependent variable in the analysis is an indicator variable for whether or not the respondent, by 2012, met or exceeded his or her 12<sup>th</sup> grade expectation of receiving a bachelor's degree. After 12<sup>th</sup> grade, any unmet expectations can only be attributed to the respondent's post-high school experience. Many people have already settled on their higher education plans before their final year of high school. This analysis focuses on the factors that affect a respondent's ability to meet his or her 12<sup>th</sup> grade educational expectation of a bachelor's degree after he or she has completed high school.

I used two sets of independent variables to test the hypothesis. The first analysis used an indicator variable for whether the respondent started his or her post-secondary experience at a community college. The concept behind this variable is there may be a negative disadvantage for starting at a community college (Melguizo, Kienzl and Alfonso 2011). The concept of where a person starts his or her education is a different concept than where a student spends time. There is no formal path from a community college to a university though. Some college and university students "reverse transfer" or move from a four-year institution to a community college. It is, therefore, important to examine community college starting in a different model from where respondent's spent time in higher education.

For the second analysis, I used the amount of class credit that the respondent achieved at a community college and at a community college and at a four-year institution. I analyze credit earned at a community college and credit earned at a four-year institution separately. I included class credit as a proxy to evaluate how time that a student spent at each type of institution affected students' educational expectations.

I also added an additional indicator variable in the analysis if the respondent received an associate degree. Associate degrees usually require about 60 hours of credit and are usually the top award that a community college can offer. The New Jersey Higher Education Student Assistance Authority uses the completion of an associate degree as an indicator of a top community performance for the NJ Starts II scholarship for community college transfer students to state universities.<sup>25</sup> Additionally, the North Carolina state general assembly has proposed using associate degrees as requirements for poor academic high school students who want to go to state universities to pursue bachelor's degrees (Worf 2016). Though some transfer students do complete an associate degree, it is not a requirement to transfer. Overall, associate degree completion and credit hours earned are useful variables to use when testing for students meeting or exceeding their educational expectations.

A list of the variables and the coding structure that I used in this analysis is in Table 4.1. The control variables are based on differences in respondents noted in Chapter 3 and models used in previous research (Adelman 2005, Conway 2010, Laanan 2003). The variables include gender, race, family characteristics, high school background, institutional characteristics, and higher education performance, and the type of higher education institution attended.

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<sup>25</sup> Information available at <http://www.njstars.net/>

#### 4.2.2. Analysis

In order to analyze the hypothesis for this research, I begin by using a binary logistic regression model to determine whether going to a community college significantly changes the likelihood that a student will meet or exceed what he/she thought would be his/her education attainment level. Logistic regression is a widely used approach for testing dichotomous outcomes in higher education (Cabrera 1994). The equation is as follows

$$\ln\left(\frac{\pi}{1-\pi}\right) = \beta_1 X_1 + \beta_2 X_2 + \cdots + \mu$$

In this model,  $\pi$  represents the probability that the respondent met or exceeded his or her 12<sup>th</sup> grade expectation of receiving a bachelor's degree. The ratio of  $\pi$  to  $1 - \pi$  is referred to as the odds ratio, or the ratio of the likelihood of the event occurring to the likelihood that the event does not occur. The  $\beta$  represent how changes in the independent variable change the log odds ratio. The  $\mu$  represents the model error term.

The results section presents how changes in the independent variables, net of controls, affect the log odds ratio. The sign of the coefficient indicates the direction of the coefficient's effect. In order to understand the actual effect, the coefficient's value must be transformed by taking the exponential of the coefficient ( $e^B$ ). The procedure allows the results to become positive and indicates how changes in the variable changes the odds ratio. To determine how a change in the odds ratio actually affects the likelihood of an event occurring, I subtract 1 from the coefficient and then multiply the results by 100 to determine what the percent change is in the likelihood that the event occurs.

$$(e^B - 1) \times 100 = \% \text{ change in likelihood}$$

The tables present three different model-fit statistics for the presented models: the likelihood-ratio chi square statistic, a pseudo  $r^2$  statistic (Nagelkerke), and the Akaike Information Criterion (AIC). The likelihood-ratio chi square includes the ratios between the observed and expected frequencies. A higher chi square statistic indicates a model with less error. The pseudo  $r^2$  statistic presents an alternative to the model fit statistic in ordinary least squares regression. The Nagelkerke  $r^2$  is a pseudo  $r^2$  statistic that is based on the likelihood ratio of the intercept-only model to the full model. That value is divided by its maximum possible value (the value from the intercept model) and provides a value that can range from zero to one, much like the coefficient of determination in an ordinary least squares regression model. The AIC is a statistical model selection criterion. A preferred model is one with the minimum AIC value.

#### 4.3. Results

Table 4.2 presents a summary of the students' educational expectations in both 10<sup>th</sup> grade and 12<sup>th</sup> grade. The responses are sorted by the type of post-secondary institution (four-year institution starters or community college starters) that the respondent initially entered from high school. The top portion of the table indicates the percentage of students from each of the two groups who had that respective educational expectation at the time of the survey. The survey asks about expectations in 10<sup>th</sup> and 12<sup>th</sup> grade. The bottom of the table indicates the percentage of students who exceeded, met, or failed to meet their expectations by 2012. The second to last row of the table refers to the percentage of respondents who did not know their educational expectations when they were asked in high school. This response percentage is relevant for both the top and bottom sections of the table.

Many high school students take standardized exams, talk to recruiters, and apply to colleges and universities between 10<sup>th</sup> and 12<sup>th</sup> grade. The 10<sup>th</sup> grade expectation could be construed as being more reflective of a student's actual feelings before he or she becomes exposed to higher educational recruitment opportunities. There are some differences between the respondents' expectations in 10<sup>th</sup> grade and the respondents' expectations in 12<sup>th</sup> grade (top of Table 4.2). Almost 5% more of the total respondents in 10<sup>th</sup> grade wanted a doctoral degree than did respondents in 12<sup>th</sup> grade. Apart from that difference, the overall expectations stayed relatively consistent between 10<sup>th</sup> and 12<sup>th</sup> grade for those who enrolled at four-year institutions. It is clear that almost identical percentages (about 37%) of community college starters and four-year institution starters had a desire to graduate from a college university. There was a major difference for students who started in community colleges. Students who started at a community college were more likely to have lowered their 10<sup>th</sup> grade expectations by 12<sup>th</sup> grade. There was a 20% increase in the number of community college entrants who expected to only go to a community college.

The breakdown of those who did not meet, those who met, and those who exceeded expectations during 10<sup>th</sup> grade were almost identical (bottom of Table 4.2). The percentages of respondents who did not meet, met, or exceeded their expectation stayed relatively the same between 10<sup>th</sup> and 12<sup>th</sup> grade for those who started at four-year institutions. In contrast to those who started at four-year institutions, more community college students had lowered their expectations by 12<sup>th</sup> grade to "attend or complete 2-year college." Recognizing that shift, there was an almost 14% increase in the percentage



of community college students who met their 12<sup>th</sup> grade expectations when compared with their 10<sup>th</sup> grade expectations by simply attending a community college.

In Table 4.3, I present the “community college beginning” model and “credit model with associate degree” model only for those respondents who desired a bachelor’s degree. In the “community college beginning” model for bachelor’s degree aspirants, the results suggest that starting at a community college decreases the likelihood of a person meeting or exceeding their educational expectations of receiving a bachelor’s degree by 46.2% ( $(e^{0.62} - 1) \times 100 = 46.2$ ).<sup>26</sup> In this model, a person’s family SES was positively associated with that person meeting or exceeding their educational expectations. Additionally, starting at a moderately or highly selective institution increased the likelihood that a person would meet or exceed their educational expectation (58.4% and 68.6% respectively). Also, every one-point increase in higher education GPA improves the likelihood that a person will graduate with a bachelor’s degree by more than 340%. The “community college beginning” model for bachelor’s degree expectants has strong model fit statistics. The likelihood chi square is about 1000, the pseudo  $r^2$  is 0.435, and the AIC is greater than 2500. All of the statistics are signs of a particularly strong and robust model.

The second set of columns on Table 4.3 is the model of bachelor’s degree aspirants with credit hours from community colleges, credit hours from four-year institutions, and an indicator variable for associate degree completion. In the results, all credit hours improved the likelihood of a person receiving his or her bachelor’s degree goal (1.6% increase for every community college credit hour earned and 3.6% increase

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<sup>26</sup> The value comes from the coefficient in the table and the transformation equation in the methods section. The equation is not further presented in the results.

for every four-year institution credit hour earned). I present the marginal effects for community college credit (from 10 to 70 credits) and four-year institution credit (from 10 to 120 credits) in Figure 4.1 and Figure 4.2 respectively. The graphs present the correlation between additional credit hours earned by a person and the likelihood that the person will meet or exceed his or her expectations of a bachelor's degree. In this model, receiving an associate degree strongly lowers the likelihood that a person would achieve or exceed their educational expectation of obtaining a bachelor's degree (-70.2%).

Very few of the control variables are significant in the credit model. The model predicts that the likelihood of a person meeting or exceeding his or her educational goal of gaining a bachelor's degree decreases by 28.6% for each additional post-secondary institution he or she enrolls as a student. For each one point increase in the respondent's higher education GPA, there was a 242% increase in the likelihood that the person will meet or exceed his or her expectations of a bachelor's degree. There is also positive, statistically significant relationship between a person's family SES and being male and the likelihood that the person will meet or exceed his expectations as well. The bachelor's degree aspirant model with credit hours and associate degrees had the strongest model fit statistics in the analysis including the likelihood ratio chi square statistic (1689.744), pseudo  $r^2$  (0.663), and AIC (1756.662). These strong model fit statistics indicate that the findings are quite robust.

#### 4.4. Discussion and Implications

The purpose of this chapter was to investigate the cooling out hypothesis. The cooling-out process includes targeting underperforming students and encouraging them to lower their educational expectations. If the cooling out hypothesis was actually to occur,

that would support the argument that non-formal social closure mechanisms implemented by community college faculty and staff limit the opportunities for underperforming students from disadvantaged backgrounds. Moore (2006) has suggested that such an issue still exists among community college faculty. The results of this study give some support to the argument that cooling out shifts community college students away from bachelor's degree completion.

The results, however, do not suggest that community college staff and faculty actively seek to reorient community college students towards lower class opportunities. That type of question would be hard to investigate without in-depth interviews with students. There are issues surrounding attendance at a community college that cannot be ascribed to the downplaying of educational expectations by administrators and staff at community colleges.

“The cooling-out process described by Clark still occurs (students are required to enroll in an orientation, they must take placement tests, they are required to take remediation, and they are placed on probation), but the role of the counselor in this process has diminished” (Conway 2010:235).

Though this research does not examine faculty and administrator influence on cooling out, reports and news stories highlight the hard work of community college faculty and administrators to encourage student success (Center for Community College Student Engagement 2012, Hanks 2015, January 14, Jesse 2016, January 15).

The results indicate that if a person starts at a community college or receives an associate degree, it decreases the likelihood that the person meets or exceeds his or her educational expectation of a bachelor's degree. The results contradict previous findings that suggest associate degree holders have an increased likelihood of transferring and pursuing bachelor's degrees (Roksa and Calcagno 2008, Shapiro et al. 2013). In the

present study, however, over 82% of the respondents who received an associate degree did not earn a bachelor's degree by 2012 (noted in Table 3.8).<sup>27</sup> In this study, most students (50.82%) who first enrolled in community colleges have not earned a college degree by 2012, a percentage almost double that of students who began at four-year institutions (noted in Table 3.7). These findings are consistent from other studies that find that community college students are likely to stop studying or leave school (Grubb 2002a, Grubb 2002b, Kolesnikova 2009, Long and Kurlaender 2009). Additionally, the research findings in this study indicate that community college students are less likely to study full-time and are more likely to delay enrolling in higher education (Table 3.7). Furthermore, many community college students were not strong academically in high school (Table 3.2). Table 4.3 highlights the strong influence of higher education grades on meeting or exceeding education expectation. There are, therefore, many issues that impact why community college starters and associate degree earners may lower their expectations.

The real issue is that many community college students come from lower socioeconomic backgrounds than many four-year institution students. Community college students have different lifestyles. People who complete associate degrees and certificates are more likely than students who complete bachelor's degrees to be married and to have a child within eight years of leaving high school. The lowering of educational expectations is probably the result of multiple factors affecting community college students. It is probably not the case that these students are distracted by community college administrators. Rather, community college students have academic and life issues

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<sup>27</sup> Table 3.9 notes that around 30% of non-completers and associate's degree holders are still taking classes, so it is possible that it may take longer for some to meet their educational expectations.

that arise and force them to change their focus away from academics during their time in post-secondary education.

A major shift in expectations happens before students get to college. Between 10<sup>th</sup> and 12<sup>th</sup> grade, respondents who were to go to community colleges were more likely to significantly lower their expectations than students who planned to go to four-year institutions. The expectations of students who were to go to four-year institutions remained relatively consistent. The changes in expectations for some students in high school supports other research that suggests high school counseling and home issues have a major effect on post-secondary educational planning (Weis, Cipollone and Jenkins 2014). In the community college starting model, there are control variables that suggest high school factors like out-of-school work hours and GPA are correlated with people meeting or exceeding their educational ambitions. Future work should continue to investigate the role of high school counseling on cooling out post-secondary expectations.

Community colleges are flexible education options for people working and dealing with other concerns. In contrast, many four-year institutions are not as flexible. Lowering students' ambitions is likely due to the lack of opportunities or time to study and not because of the influence of community college administrators or faculty. This lack of opportunity and time could explain why some for-profit universities, with evening and online learning opportunities, have increased as popular post-secondary educational options for people from disadvantaged backgrounds. This research does not have the data to examine the effect of for-profit universities on helping disadvantaged students meet their educational expectations, but it is a worthwhile topic for future research.

Overall, I propose that the concept cooling out hypothesis has changed. Lowering students' ambitions still exists, but it is the result of internal rather than external factors. Most community college counselors are encouraging students to meet their educational goals (Bahr 2008). Community college students are challenged by personal and economic issues that affect the time and money that they can invest in continued studying in higher education (Cohen, Brawer and Kisker 2014). Community colleges should emphasize services that meet the academic and family needs of students on a campus like extended academic tutoring services or subsidized child care. By better helping students maintain their ability to study, community colleges can keep enrollments higher and improve graduation and transfer statistics.

## CHAPTER 5: TRANSFERS, INVOLVEMENT, AND BACHELOR'S DEGREE COMPLETION

*In the face of soaring college tuition, tight household budgets and the specter of graduating with large amounts of debt, more students are using the famously low-cost community college system as a steppingstone on the way to a four-year degree. (Gallagher 2015, April 12:para 5)*

After President Obama (2015b) first proposed free community college, politicians (Fain 2015, July 9), educators (American Association of Community College and Association of Community College Trustees 2015), and even actors (Hanks 2015, January 14) praised the opportunities that came from studying at community colleges. Though not all of the comments have been positive (Deruy 2015, July 27, Morici 2015, January 15), one of the consistent themes in these articles is that people can use community colleges as an affordable way to begin their academic life. Community colleges are the clearance stores of higher education, with affordable options, convenient locations, and flexible class times (Cain 1999).

Community colleges are unique institutions and many of them are designed as institutions that are accessible to commuting students. They are usually quite simple and do not have all of the premium lifestyle options that can be found in residential colleges and universities (see Appendix B for details). Colleges and universities have whole divisions of professional staff focused on getting students involved on campus. In contrast, community colleges have a very limited staff to deal with student service issues.

More than a third of the students who start at community colleges move on to study at four-year institutions (from Table 3.7). The students who transfer from community colleges to four-year institutions have to deal with many issues that are both administrative and social (Townsend 2008). Roksa and Calcagno (2008) have also noted academic preparedness issues are a problem for community college transfer students. State political and educational leaders across the country, however, are quite keen to encourage community college students to transfer to state colleges and universities (Gordon 2015, Mast 2016, Stancill 2014). It is, therefore, important to consider whether community colleges provide an appropriate “stepping stone” or “gateway” for those who want to complete a bachelor’s degree.

When the U.S. Department of Education rates colleges and universities within the country, degree completion is a key factor it considers.<sup>28</sup> Bachelor’s degree completion is no easy task. Students must usually complete over one hundred twenty credit hours of coursework over the course of four or more years. Transfer students often have trouble transferring class credit and have to take longer to complete degrees (Rouse 1995). The relevant literature often highlights the stigma associated with being a community college transfer student at a four-year institution (Alexander, Ellis and Mendoza-Denton 2009, Bahr et al. 2012, Handel 2011, Laanan 2004, Mullin 2012).

Some studies find that community college transfers experience a negative stigma at universities, which sometimes leads them to hide their community college background (Alexander, Ellis and Mendoza-Denton 2009, Bahr et al. 2012). Many community college students have a difficult time transferring to a college or university (Handel 2011, Laanan and Starobin 2004). Others note that transfer students from community colleges

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<sup>28</sup> Available at <https://collegescorecard.ed.gov/>



experience a disconnect and a feeling of inferiority at the institutions to which they transferred (Townsend 2008). After being in an environment with limited social relationships, the transfer students at four-year institutions continue to be outsiders. These students usually have a late pick of classes and are sometimes socially unconnected at their new institution (Alexander, Ellis and Mendoza-Denton 2009). If they complete their bachelor's degrees, these difficulties often result in delayed completion rates for transfer students (Rouse 1995).

Social closure theory can help explain many of the differences in the bachelor's degree completion rates for students who begin their studies at a community college and for those who begin their studies at a college or university. Social closure, the process that blocks people who do not possess certain attributes from obtaining particular positions, relies on the concept of both formal and non-formal closure mechanisms such as formal requirements for club entry and informal issues like the social interaction between transfer students and other students, faculty, and staff at their new institution. Increased student engagement (the antithesis of social closure) with other students, faculty, and staff on campus is a key factor in improving bachelor's degree completion rates (Kuh et al. 2008). Though minimizing of engagement is not necessarily the purpose of social closure, it can be an unintended consequence of closure. If community college transfer students feel like freshmen or outsiders (Alexander, Ellis and Mendoza-Denton 2009, Townsend 2008), they can feel less ready to engage with the campus community. Furthermore, students who are less socially involved are more likely to leave school (Tinto 2012).

My research examines social involvement within the residential college or university setting as a mediating factor on community college transfer students' pursuit of their bachelor's degree. The following section presents an overview of the major theories of student retention and involvement. The research question for this project is the following: What role does student engagement have on community college transfer student persistence toward completing a bachelor's degree?

### 5.1. Theories of Student Retention and Involvement

Tinto's (2012) theory of student departure from higher education is based on the works of van Gennep (1960) and focuses on three stages of student development at the university (separation, transition, and incorporation).<sup>29</sup> He also incorporates Durkheim's (1951) work on suicide because he believes it provides a social context for people taking drastic decisions, such as abandoning their studies. Tinto proposes an interactional model of the factors related to a person's decision to depart an institution that incorporates the academic and social components of a student's higher educational experience. The academic aspect of transfer student success is critical, yet it is not the focal point of this research, so I use academic variables as control variables for this analysis. I choose to focus on the social aspect of the college experience in Tinto's retention model. Specifically, Tinto suggests that both formal and informal experiences affect a student's social integration into a campus community. The informal interactions are the connections with peers. The benefits from formal social interactions in extracurricular activities are what this research seeks to test. Applying Tinto's work to this study, the assumption in this analysis is that students from community colleges are likely to fail to

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<sup>29</sup> Tinto suggests that separation and transition happen early in a person's college career, which may help explain why older transfer students may not feel a part of a university community.

develop social integration at their new campus and may be less likely to finish their bachelor's degree studies. Many scholars have expanded on Tinto's theory from a number of different perspectives (Braxton, Sullivan and Johnson 1997). Overall, the theory suggests that students' motivation in higher education is a product of their internal and external environments.

Bean (1980) presented a model of student attrition, based on theories of organizational turnover that focuses on student intent. Bean examined how organizational and reward structures affected students' intent to persist in higher education. He found that gender had a role in the relationship between a student's commitment and a decision to drop out of college; women were less likely to drop out than were men. Later work by Bean and Metzner (1985) highlights differences between traditional and nontraditional students and suggests that nontraditional students are more affected by their external environment in making decisions about whether to continue in higher education.

Involvement is a key construct of Astin's (1999) student development theory. The core concepts for student involvement include student inputs (or backgrounds), the student environment, and student outcomes (or their results at college). Involvement, in the view of Astin, requires an investment of energy and commitment by the student. He sees involvement as part of a "zero-sum game" (p. 523), because time and energy are finite resources. He argues that the facilitation of student growth and learning occurs when students are engaged in their higher education environment. According to Astin, academic performance in higher education correlates with a student's level of involvement on campus. Since publication of the works of Tinto, Astin and many others, colleges and universities have started encouraging more student involvement on campus

(Brown, King and Stanley 2011, Kuh et al. 2008, Tinto 2012). Most of the recent research work focuses on first-year student experience programs.<sup>30</sup>

## 5.2. Literature on Student Involvement and Engagement

There is a great deal of research highlighting the importance of educational activities on student grades and student persistence (Astin 1993, Braxton et al. 2008, Kuh and Hu 2001, Pascarella and Terenzini 2005). The impact of structural characteristics such as the quality, control, and type of the institution and the makeup of the student body have minimal and indirect impact on the student's decision to persist in higher education (Pascarella and Terenzini 2005). Research has found that academic aptitude and social integration are both important factors that influence student persistence in higher education (Getzlaf et al. 1984, Moore et al. 1998, Nakajima, Dembo and Mossler 2012, Pascarella and Terenzini 2005). Moreover, research has found that during the latter years in higher education, the positive effect of students' campus social integration on students' academic success increases (Flynn 2014, Terenzini and Wright 1987).

Student engagement and student involvement are two distinct concepts. Involvement means to enfold in what is happening around, while engagement means to become a part of something (Ferlazzo 2011). Both concepts require for both time and effort on the part of the students and others (Astin 1999, Braxton et al. 2008, Kuh, Scuh and Whitt 1991). Kuh et al. (2008) found that once students have enrolled in higher education, student engagement on campus is very relevant to their persistence at college, whereas pre-college characteristics have a diminished impact upon that persistence.

Further work has described how co-curricular activities such as involvement in residence

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<sup>30</sup> Here is a list of top first year experience programs ranked by U.S. News and World Report: <http://colleges.usnews.rankingsandreviews.com/best-colleges/rankings/first-year-experience-programs>

halls and student organizations is positively correlated with retention and academic performance (Pike and Kuh 2005). Specifically, Kuh, Scuh and Whitt (1991) highlighted the strong connection between out-of-class engaging student activities and students' personal and social development.

There has been some research work examining community college student involvement. According to Miller, Pope and Steinmann (2004), there are two general groups of students who study at community college: one group seeking occupational education and one group aiming to transfer. Most students at community colleges are very unlikely to be involved with campus activities (Coley 2000, Miller, Pope and Steinmann 2005, Schmid and Abell 2003). Social support on campus is a critical component of increasing a community college student's level of social integration on campus (Napoli and Wortman 1998). Social integration within a campus is positively associated with community college student persistence (Pascarella, Smart and Ethington 1986).

Research suggests once students have transferred from a community college to a four-year institution, previous involvement at the community college has almost no impact on whether or not a student is satisfied and academically strong (Berger and Malaney 2003). Community college transfers experience many challenges as they move on to life at four year institutions (Davies and Casey 1999). Furthermore, many researchers have found that increased immersion in campus activities at the new institution has a positive impact on student persistence and institutional satisfaction (D'Amico et al. 2014, Davies and Casey 1999, Townsend and Wilson 2009). Though campus involvement is important, academic distress is a major issue for students who

transfer from community colleges to universities (Berger and Malaney 2003, D'Amico et al. 2014, Laanan 2007). Bahr et al. (2013) present additional analysis of research on community college students' transitions to four-year institutions and also found the community college transfers experience academic distress when they enter a traditional college setting.

### 5.3. Literature on Bachelor's Degree Completion

There are researchers who suggest that students who start at community colleges can pursue a bachelor's degree as easily as can those who start at four-year institutions. Rouse (1995) found that a student's proximity to a community college increases the likelihood that the student will spend longer in education, but does not change the likelihood that the student will attain a bachelor's degree. This time extension is often referred to as the community college "penalty" (Long and Kurlaender 2009). Rouse suggests that community colleges divert some students who would have otherwise gone to a four-year institution; there is, however, no difference in the likelihood of their obtaining a bachelor's degree. Supporting Rouse's work, Leigh and Gill (2003) found that individuals attending a community college and seeking a bachelor's degree attain more years of education than those who do not desire a bachelor degree (on average between 0.4 and 1 years).

Degree planning and internal motivation are important components for community college students who transfer to four-year institutions. Pascarella, Wolniak and Pierson (2003) found that students' precollege degree plans had a positive effect on the type of education they eventually achieved, though there were conditional effects that differed for sex and race within the findings. Specifically, students who intend to pursue a

bachelor degree are more likely to complete one while student who transfer to a traditional college without specific plans are more likely to drop out. Also, Shapiro et al. (2013) found that students who completed a certificate or an associate degree were more likely to graduate with a bachelor's degree after transferring than students who transferred from a community college without earning a credential. It is worth noting that research from Adelman (1999) indicates that going to a four-year institution is the only reliable indicator of students' desire to complete a bachelor degree because it is impossible to determine whether or not an individual desires a bachelor degree unless they attempt to get a bachelor's degree.

Many studies suggest that starting at a community college negatively affects a student's likelihood of obtaining a bachelor's degree, although the impact differs according to the area of study (Alfonso 2006, Doyle 2009, Long and Kurlaender 2009, Monaghan and Attewell 2015, Reynolds 2012). In discussing the negative impact, Alfonso (2006) indicated that, in the present system, community college enrollment does not provide a straightforward path to obtaining a bachelor degree and proposes that starting at a community college decrease the likelihood of a person obtaining a bachelor's degree attainment. Monaghan and Attewell (2015) found that former community college students accumulated fewer class credits after transferring to four-year institutions than students who only attended four-year institutions because they are more likely to need to keep up employment. Melguizo, Kienzl and Alfonso (2011) found that the chances of graduating from a four-year institution were not as good for those who start at community colleges and are working while studying. Furthermore, Doyle (2009) suggested that policy makers who seek to shift enrollments to community colleges should be aware that

it may lead to lower bachelor degree attainment when they eventually transfer to traditional colleges or universities. Additionally, Long and Kurlaender (2009) found the negative effect on graduating with a bachelor's degree for those who start at a community college is greater for women and African American students.

Student quality impacts student persistence toward gaining a bachelor's degree. Sandy, Gonzalez and Hilmer (2006) found that lower student quality explained the probability of lower bachelor's degree graduation for students who transferred from community colleges. The authors posit that this lower probability has become more marked in the last few decades. Though many studies point to lack of academic preparedness as a reason community college students fail (Cohen, Brawer and Kisker 2014, Roksa and Calcagno 2008), Bound, Lovenheim and Turner (2010) contradicted those conclusions and indicated that degree completion for all types of colleges has more to do with institutional resources than with student preparedness. Alba and Lavin (1981) , when comparing students with similar academic records in their first two years at both types of higher education institutions, noted that students from community colleges were more likely to struggle, leading the authors to question whether the two types of institutions provided the same level of academic rigor. Other issues like student backgrounds, involvement on campus, goals, and internal motivation are significant predictors of community college student retention at four-year institutions (Feldman 1993, Townsend and Wilson 2009, Wang 2009, Young and Litzler 2013).

There is research that suggests that higher education institutional resources have an important impact on student achievement. Pascarella, Wolniak and Pierson (2003) and D'Amico et al. (2014) posit that the differences found between the academic



environments of community colleges and traditional colleges influence the desire of students to pursue bachelor's degrees. Calcagno et al. (2008) discovered that students at larger community colleges are less likely to graduate than students at smaller institutions, a finding that is in contrast to those from a similar study regarding the degree completion of students at four-year institutions (Titus 2004). In another unique finding, Calcagno et al. (2008) found that expenditures-per-student at community colleges are not related to student graduation rates. Students at community colleges with larger arrays of student services and greater percentages of fulltime faculty are more likely to graduate or transfer. Anderson, Alfonso and Sun (2006) found that even with increases in articulation agreements between community colleges and public four-year institutions, there have been no significant increases in the percentages of students who start at a community college and transfer to a four-year institution to complete a bachelor degree. They suggest that the current policy emphasis on articulation agreements is just a reflection of the current economic climate and could lead to what Townsend (2001) considers a "middle class takeover" of the community college, a situation in which underprivileged- students would not be an institutional priority. This "takeover" does not seem to have happened. In fact, data suggest that a larger percentage of people from lower income families are attending community colleges, while the percentages of middle income students at community colleges have remained consistent (Goldhaber and Peri 2007).

Overall, the research studies find that community college transfer students are less involved on campus. Furthermore, research on the premise of community colleges being gateway institutions for bachelor degree studies is inconclusive. There are conflicting studies about the persistence of community college transfer students. I propose to

synthesize the literature on student involvement and the literature on the persistence of community college transfer students. This will make it possible to consider the impact of student engagement on community college transfer students completing bachelor's degrees. It is worthwhile, however, to continue investigating the impact of student involvement on bachelor's degree completion for community college transfer students. With controls in place for community and student characteristics, I can reconcile past inconsistencies and develop a conclusion based on the present data. The findings can help us better understand how to support the educational objectives of community college students who move on to pursue a bachelor's degree. The hypothesis for the analysis in this chapter is:

*For students who begin their studies at community colleges and transfer to four-year institutions, student engagement on campus mediates any negative effect of community college attendance on the likelihood of their graduating with a bachelor's degree.*

#### 5.4. Methods

The data for this analysis came from the Educational Longitudinal Study (ELS). For this analysis, I investigated where respondents began their higher education, how involved they were with high-impact educational activities, and whether or not they graduated with a bachelor's degree. I used maximum likelihood estimation within structural equation modeling (mediated model format) to test how involvement can affect community college transfer student's likelihood of graduating with a bachelor's degree.

For this study, I only included respondents who had spent some time studying at a four-year higher education institution. That eliminated about 5/8 of the almost 4,000 ELS

study respondents (about 2,500) who started at a community college and did not attend a four-year institution. By focusing on bachelor's degree aspirants, I eliminated students who may have only wanted associate degrees or certificates. Although limiting the analysis to only the respondents who attended a four-year institution reduced the sample size from 10,790 to 8,260, the results can be more reflective of students who sought to pursue a bachelor's degree.

#### 5.4.1. Variables

A list of the variables and the coding structure that I used for an expanded model analysis is available in Table 5.1. The dependent variable in the analysis was an indicator variable for whether or not the respondent graduated with a bachelor's degree. I used an indicator for whether or not the respondent started at a community college as the primary independent variable. The control variables include demographics, family background, personal wages two years after high school, and last post-secondary institution's control and selectivity (Table 5.1).

#### 5.4.2. Measuring Involvement

“[T]he extent to which students become involved in the academic and social aspects of college life reflects specific choices that they make about how to allocate limited resources” (Bahr et al. 2013:482). Astin (1999) believed that involvement was a unique concept different from the motivation to persist in post-secondary education. In his view, involvement in higher education was both a qualitative and a quantitative concept. Previous work has examined the hours students spent studying or participating in extracurricular activities (Berger and Malaney 2003, Laanan 2007). Other work has examined involvement from the way the way students allocate their time (Davies and

Casey 1999). For the mediated variable in the analysis, I chose to measure the number of what Kuh (2008) has called “high-impact educational activities” with which each student is involved during his or her time in post-secondary education. The list of high-impact activities includes:

- Internship/ co-op/ field experience
- Research project with faculty
- Study abroad
- Community-based project
- Culminating senior experience
- Mentoring

Through the National Study of Student Engagement (a study of four-year institutions), Kuh has identified these activities as critical for deeper student learning and personal development. According to Kuh (2008), student participation with these activities leads to higher rates of student retention and engagement on campus (9). Most of these activities are associated with the latter years of higher education, although community college students experience many of them while studying. Kuh’s (2008) results identify that most of these activities are more commonly a part of the environment at more selective, private colleges and universities.

In this analysis, the value for this variable could be any number between ‘0’ and ‘6’ depending on the number of different activities that the student undertook. The study counted repeated similar activities such as multiple internships once in the analysis. A person with a value of 6 took part in all six of the activities during his or her time in higher education.

Many students (including all of the community college students in this study) attended multiple institutions prior to graduation. The question only asks respondents if they participated in each of these activities when they were studying. Therefore, there is no way to determine the post-secondary institution where the students did the high-impact activities. Though this is a limitation, it does not affect this analysis on the relationship between activity participation and graduation.

#### 5.4.3. Analysis

In the review of literature on student persistence and degree completion, I highlight the correlation between being a community college transfer student and graduating with a bachelor's degree. Additionally, I cite theory and studies that establish a correlation between campus involvement and persistence in pursuing a degree. For this analysis, I used a mediated structural equation model with a maximum likelihood estimation. In general, maximum likelihood estimation has been identified as a consistent and asymptotically efficient point estimator (Greene 2014). I suggest that student engagement on campus has an intervening or mediated effect on the impact that starting at a community college has on persistence to graduate with a bachelor's degree. I present an overview of the mediated model in Figure 5.1.

According to Baron and Kenny (1986), there are four distinct steps establishing a mediated relationship among variables. First, path c (in Figure 5-1) is the total effect, noted as the impact of starting at a community college on the likelihood of bachelor's degree completion. The second step involves estimating the effect of being a community college transfer student on the likelihood of the mediating variable, participation with high-impact educational activities, (noted as path a). For path b and c', I rerun the

original estimation of starting at a community college on the likelihood of graduation (c'), and I include student involvement as an additional variable in the model (b).

In order to interpret the value of the coefficients, I must standardize all of them so that the means and standard deviations of the values are consistent. I do this by multiplying the coefficient by the ratios of the standard deviation of the coefficient over the standard deviation of the predicted outcome.

$$B'_k = B \times \frac{S_{x_k}}{S_{y^*}}$$

The value of the standardized coefficient for starting at a community college in the third equation is the direct effect (c'). To find the indirect effect (or mediated effect), I multiply the standardized coefficient by the standardized coefficient in b. Ultimately, I should be able to add the standardized coefficient for c' to the product of the standardized coefficients of a and b to get the standardized coefficient for the value in c.

$$c = c' + a \times b$$

According to Judd and Kenny (1981), this type of analysis is appropriate as long as the coefficients in a, b, and c are significant, and the coefficient in c' is not significant. I present the results in path and table form. All coefficients are standardized and all standard errors are robust. I present variable significance levels in the tables.

### 5.5. Results

To begin the results, I present some of the summary findings for student involvement. Table 5.2 includes all of the activities that were part of the study and their frequency by degree and initial type of institution where the student enrolled. The most common educational activity was internships. Over half of the respondents had done at

least one internship while studying. Overall, almost three quarters of the respondents with graduate degrees had completed an internship. The second most common activity was a senior experience or project. Almost half of the respondents who completed a bachelor's degree undertook these projects. The third most common experience was being the recipient of mentoring. Also, about one third of the graduate degree holders had an undergraduate research experience with a faculty member. The least common activity overall was study abroad. Though almost one in five of the bachelor's degree and graduate degree holders did some study abroad, less than 5% of the rest of the respondents undertook such an activity. Students who started at four-year institutions were more likely than students who started at community colleges to do all of the activities.

Table 5.2 also includes the average number of different activities that members within each group of respondents experienced. Overall, certificate and associates' degree holders averaged about one activity, while bachelor's degree and graduate degree holders averaged about two per person. Students who started at four-year institutions were twice as likely to do activities as students who started at a community colleges to do a high-impact educational activities. Figure 5.2 presents a visual representation of how many activities each student did. There were more community college students than four-year students who did not have any high-impact activities. There were almost no community college starters who had more than three activities. When examining the starting institution of the respondent, respondents who initially enrolled in a four-year institution undertook an average number of activities that was twice that of respondents who went to

community colleges (those values are lower because they include degree non-completers).

Degree completion rates by initial institutions are in Table 5.3. Overall, about one third of the respondents did not receive a post-secondary education credential by 2012 and about another third received a bachelor's degree. The last two columns of the table breaks down responses by whether or not the community college starters had attended a four-year institution during their time in post-secondary education. Slightly more than half of all community college starters had not completed a degree program. This result is heavily influenced by students who did not go to a four-year institution (64% non-completers). The degree completion percentages of respondents who were community college starters that had attended a four-year institution were very similar to the degree completion percentages of four-year starters. Only around 26-28% of the students from those two groups did not finish a degree. The only major difference between the four-year institution starters and the community college starters who attended four-year institutions was that about 10% more of the four-year starters had attained a graduate degree, while about 10% more of the community college starters completed an associate degree.

Table 5.4 and Figures 5.3 and 5.4 present the simple mediated model for the effect of starting at community college on graduation with a bachelor's degree with the effect mediated by participation with high-impact educational activities on campus. Table 5.4 includes values, robust standard errors, and significance levels. The two figures present a visual representation of the correlations. The numbers in the table and figures are consistent.



The analysis of the simile mediated model only considers the effect of starting at a community college and participating with high-impact educational activities on graduation. The path c in Figure 5.3 and the first column in Table 5.4 is the total effect of starting at a community college on obtaining a bachelor's degree. The overall effect is negative (-0.111,  $p < 0.05$ ). In Figure 5-4 and the final two columns in Table 5.4, I present the mediated model with high-impact educational activities as the mediating variable. In the path a, starting at a community college has a negative relationship with participation with high-impact activities (-0.121,  $p < 0.01$ ), and participation with high impact activities has a large positive relationship with graduation (path b, 0.353,  $p < 0.01$ ). The indirect effect, or the mediated effect, is the product of those two values ( $a \times b = -0.043$ ). The proportion of the total effect mediated by the intervening variable is 36%. The direct effect, noted in the paths b and c' column, is the coefficient the measures the influence of starting at a community college when high impact activities is in the model. That value, -0.076, is closer to zero and statistically significant, indicating that Judd and Kenny's (1981) principles of an appropriate partially mediated model are present in this structural equation model. The Sobel-Goodman test of mediation produces a statistically significant z score (-10.06,  $p < 0.01$ ), indicating that the variable for participation with high-impact educational activities is a strong intervening or mediating variable in the analysis.

In order to better test the effect of participation with high-impact educational activities on mediating the impact that starting at a community college has on graduation, I ran the same structural equation model, but I controlled for other factors (Table 5.5 and Figure 5.5) in the mediation and in the full model.<sup>31</sup> In this expanded model, the effect of starting at community college on bachelor's degree completion is not statistically

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<sup>31</sup> Figure 5.5 only shows the mediated effects

significant in the direct effect model (first column of Table 5.5) or in the mediated effect model (third column of Table 5.5). In both cases, the value for starting at a community college on the likelihood of graduating with a bachelor's degree is almost zero (-0.003 and 0.002 respectively). There is still a statistically negative effect for starting at a community college on participation with high-impact activities (2<sup>nd</sup> column in Table 5.5, -0.042,  $p < 0.01$ ), and there is a statistically significant positive coefficient for participation with high-impact activities on the likelihood of graduating (0.138,  $p < 0.01$ ).

The additional controls in the expanded model are variables that highlight differences associated with the students at the two different institutions (also noted in Chapter 3). Overall, higher education GPA had the largest influence on participation with high-impact educational activities (0.303,  $p < 0.01$ ) and on the likelihood of bachelor's degree completion (0.347,  $p < 0.01$ ). Family SES and higher education institutional selectivity are two variables that are statistically significant and positively associated with both participation with high-impact activities and bachelor's degree completion. Living at home in 2005 (a year after graduation) was significant and negatively associated with activity participation and bachelor's degree completion (-0.056,  $p < 0.01$ ). Additionally, the natural log of a person's wages in 2005 and the number institutions that a person had attended<sup>32</sup> are negatively associated with graduation, but these variables were not statistically related to activity participation. Going to a public institution was statistically significant and negatively associated with high-impact activity participation (-0.062,  $p < 0.01$ ), but the variable was not significantly related to graduation.

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<sup>32</sup> Community college transfers effectively have a value of at least a value of 2 for this coefficient.

## 5.6. Discussion and Implications

There is a great deal of debate on what effect starting at a community college has on a person's chances of completing a bachelor's degree. This present research took a unique approach to examining the issue by incorporating student engagement on campus as a mediating factor that can affect the results. There is extensive research and theory that has established the relationship between student persistence and student engagement and involvement (Astin 1993, Kuh et al. 2008, Kuh, Scuh and Whitt 1991, Moore et al. 1998). This study merges the two major issues together: student engagement with high-impact educational activities on campus and community college transfer student persistence.

The present Department of Education emphasis on grading higher education institutions based, in part, on graduation is an issue for colleges and universities to address. Community college transfer students can have a harder time completing bachelor's degrees. The results provide a perspective of how community college transfer students' level of involvement in high-impact activities can improve the likelihood of their graduation with a bachelor's degree. It is therefore important for faculty and administrators to encourage community college transfers to get involved with engaging student activities at their new colleges and universities.

In this present study, I only examined students who had studied at four-year institutions in order to best consider students who were interested in obtaining a bachelor's degree at one time. The restriction of having only students who attended a four-year institutions allows the results of this study to present a more robust view of the implications of starting at a community college on bachelor's degree completion. This

condition in the analysis could explain some of the previous inconsistent research results. Though it is impossible to completely understand personal educational ambitions, people's personal choices are usually clear indicators of what people want to do (Hakim 2000). College and university enrollees, even those who started at community colleges, likely had an interest in completing bachelor's degrees.

The results of this study show that there is a negative effect from starting at a community college on bachelor's degree completion, but that effect is eliminated when the analysis controls for other variables like higher education GPS, family SES, living at home, and employment wages. The findings support Rouse's (1995) findings that starting at a community college does not affect the likelihood that a student can achieve a bachelor's degree. There are some major issues with the academic and social conditions at community colleges (Beach 2011, Scherer and Anson 2014). This study indicates that, though issues are present, the negative effects associated with community college attendance is a product of the social, economic, and academic characteristics of the students who start at community colleges.

There is no negative effect associated with starting at a community college on bachelor's degree completion in the expanded model. The relationship between community college starting and bachelor's degree completion is not mediated by high-impact activity participation. Rather, the relationship is linear. There is a statistically significant negative relationship between starting at a community college and participation with high-impact educational activities. Furthermore, there is a statistically significant positive relationship between participation with high-impact educational activities and the likelihood of completing a bachelor's degree. It is important to

encourage more community college transfer students opportunities to be engaged on their new college and university campuses. Student engagement on campus increases student learning and personal development (Kuh, Scuh and Whitt 1991, Kuh 2008, Pike and Kuh 2005).

Chickering and Reisser (1993) suggested that interpersonal relationships that form through connections that flourish during a student's time studying in post-secondary education are key for a young person's identity development and act as a foundation for his or her own future career. Once students are involved and feel a part of their college or university, the mitigation of social barriers that separate people can occur. It is important to recognize the value of organizational engagement as a necessary component of improving member commitment (Bakker and Schaufeli 2008). Effectively, the social closure mechanisms and the associated negative stigmas that limit community college transfer student involvement at colleges and universities campuses (Alexander, Ellis and Mendoza-Denton 2009) can be overcome by developing opportunities for the transfer students to take part in engaging activities that help students learn and grow while at colleges and universities.

Though student engagement with high-impact educational activities is a key factor that can help improve the academic performance of students especially those from disadvantaged backgrounds, "Student engagement is not a silver bullet" (Kuh 2008:22). One relevant issue is that Kuh's (2008) high-impact educational activities are formal, mainly institutionally-sanctioned student activities that may be considered only supplementary educational activities. "Institutional leaders may protest nonetheless that the practices...are labor-intensive and therefore costly" (Kuh 2008:8), and one may ask

how they can be helpful especially for those who transfer from community colleges. The answer can be in the roots of liberal arts education. “Clearly all successful careers require critical thinking, teamwork, sensitivity to cultural, demographic, economic and societal differences and political perspectives. A liberal arts education provides this grounding” (Ray 2013). In fact, Tinto (2012) notes that formal activities can lead to increased informal connections; both of which help build academic and social integration on campus. The integration helps students to persist toward obtaining a bachelor’s degree.

Almost all colleges and universities have services to handle transfer students, especially those from community colleges. When background characteristics are considered, there seems to be no indication that starting at a community college reduces the likelihood of a student graduating with a bachelor’s degree. Though there are some institutional effects from starting at a community college (the institutions are not selective and commonly help many academically challenged students (Scherer and Anson 2014)), student persistence is also a function of social involvement and personal characteristics (Tinto 2012). It is clear that getting community college transfer students involved with engaging campus activities helps retention. Colleges and universities need to invest resources to help community college transfer students adjust to the educational environment and become more involved to overcome the social disadvantage from starting at a community college. This means that targeted social and academic support services are necessary components to help students who start at community colleges and transfer to be successful as they persist toward bachelor’s degree completion.

## CHAPTER 6: ECONOMIC AND JOB PRESTIGE BENEFITS OF COMMUNITY COLLEGE DEGREES

*The underlying philosophy of the community college is to ensure access to higher education for all who can profit from it. However, since the beginning of the community college movement, one of the implied purposes of the colleges has been to provide occupationally oriented education that will lead to employment. (Hlavna 1992:47)*

Terminal occupational education has been a significant part of community colleges' mission for over 70 years (Brick 1964, Cohen, Brawer and Kisker 2014). The drive to promote two-year degrees as education options originates from the idea of a mid-level labor market between the traditional high school graduate (blue collar) labor market and the college graduate (white collar) labor market. Grubb (1996) refers to these labor market participants as being “in the middle” (i.e. people who completed high school but do not have bachelor’s degrees), and he suggests that there is a defined labor market for such people. Community colleges have developed terminal degrees as a way to generate student interest and because local corporations desire to have educated employees (Cohen, Brawer and Kisker 2014, Dougherty 1994). The ultimate goal of community college terminal degrees has been to provide more education options for more people (Griffith and Connor 1994).

President Obama has cited community colleges as a means of increasing the level of education credentials within the American workforce (Office of the Press Secretary 2009). In 2015, President Obama (2015a) proposed providing two free years of community college for anyone who wanted to study and stated:

*Every American, whether they're young or just young at heart, should be able to earn the skills and education necessary to compete and win in the 21<sup>st</sup> century economy. (para 33)*

President Obama based the plan on the work of Bill Haslam, Governor of Tennessee, who, a year earlier, signed a state bill into law providing supplemented community college tuition support for in-state high school students. Haslam stated:

*We think this is a must if Tennessee is going to compete for the jobs that will exist 10 years from now.... We have to have the people with the right training.*<sup>33</sup>

Many politicians think that community college education, specifically terminal degrees, can positively affect graduates' futures and the overall economic development of a community.

Educational credentials are the most common criteria used by employers for soliciting and screening résumés from applicants for open positions (Rivera 2011). Though some see community colleges as cheaper, quicker, and comparable alternatives to traditional bachelor's degree educations (Heck 2010); community college degrees have not consistently been considered a means of economic improvement. Some general uncertainty exists in the literature about the effect of community college credentials have upon wages (Grubb 2002b). Research indicates that employers perceive community college students as being of lower quality students than those students in four-year institutions (Van Noy and Jacobs 2012).

I propose that the uncertainty about the impact of community college credentials on wages is a function of social conditions within the power structure of corporations. Employers' human resource personnel implement minimal education requirements (normally a bachelor's degree) to limit the employment opportunities and salary potential

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<sup>33</sup> From [http://www.heraldcourier.com/news/local/haslam-signs-bill-that-gives-grads-two-years-of-community/article\\_02e589a0-dca4-11e3-8e2f-001a4bcf6878.html](http://www.heraldcourier.com/news/local/haslam-signs-bill-that-gives-grads-two-years-of-community/article_02e589a0-dca4-11e3-8e2f-001a4bcf6878.html)



available for graduates of community college programs. Credentials are considered fair mechanisms for discriminating among job applicants (Jencks 1972) because they are easily measurable indicators of competence (Rosenbaum 2001). The requirement for a minimal educational credential is considered an external form of social closure (Parkin 1979). Collins (1971) argued that educational requirements are exclusionary tactics used to maintain control at the senior level of a company. He argued that employers (mainly those who are educated) set up job requirements for open positions in their own favor and discriminate against those without similar credentials as ways to hire people with culturally similar backgrounds, suggesting that education requirements reinforce discrimination (Collins 1975:86). Present research, however, has suggested that credential increases have more to do with technological progress and the increased demand for more qualified employees (Goldin and Katz 2008).

The purpose of this chapter is to investigate whether there are limits to the employment positions and wages offered to community college graduates. This chapter seeks to test the differences in economic and job prestige benefits from obtaining community college degrees. To do this, I test the economic theory of human capital and the sociological theory of status attainment in the context of students graduating with community college degrees that will allow me to consider whether previously inconsistent findings may be the result of an unclear understanding of internal limits to opportunities.

The central theme in the arguments of President Obama, Governor Haslam, and many other politicians is that there is an economic benefit from additional years of education. Additionally, some sociologists have also suggested that there is a positive

social benefit from increased education (Blau and Duncan 1967, Bozick et al. 2010, Sewell and Hauser 1972). The correlations among education and economic and social returns is the closest that it has ever been (Goldin and Katz 2008). If one accepts Grubb and Lazerson's (2004) argument that the true benefit from human capital comes from degree completion, then one would have to assume that a community college degree would provide graduates with an economic benefit greater than that received by people with only some post-secondary experience but no credential and less than a bachelor's degree.<sup>34</sup>

Research suggests that there are overall positive wage returns from studying at community college even for students who do not complete a program (Belfield and Bailey 2011, Jacobson, Lalonde and Sullivan 2005b). Using the human capital argument, if one accepts that the difference in salaries between bachelor's degree holders and associate degree holders is a function of increased educational experience as some have suggested (Kane and Rouse 1995), then associate degree holders should earn significantly more than those who have not completed their educational training and do not have an educational credential. Summary statistics from government reports (Department of the Treasury 2012) and private organizations (Baum, Ma and Payea 2013) only that there are minimal salary differences based on educational levels. It is, therefore, useful to further investigate whether there is a mid-level labor market that provides a wage benefit advantage for community college graduates over students who pursue a post-secondary education and fail to receive a post-secondary credential.

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<sup>34</sup> Some consider the opportunity cost of missed years of work and suggest that community college degree holders earn more than bachelor's degree holders. Available at <http://hechingerreport.org/many-community-college-grads-continue-to-out-earn-b-a-holders-a-decade-after-graduation/>

### 6.1. Human Capital Theory

In 1958, Jacob Mincer proposed a single-equation based on the theory of rational choice model to explain earnings as a function of experience and education. The equation is as follows:

$$\ln Y_i = \ln Y_0 + \beta s_i + \gamma X_1 + \delta X_2^2 \dots$$

In the model,  $Y_i$  are earnings (annual, weekly or possibly hourly) for person  $i$ .  $Y_0$  is the amount of the previous year's earnings. The term,  $s_i$ , is the years of education completed by person  $i$ . The  $X$ 's are the years of experience that the person achieves. In Mincer's (1974) view, employers are the purchasers of labor and the sellers of training. The power of this theory is that workers invest in their own human capital to maximize the present value of their lifelong earnings. Using compensating differences, Mincer noted that much of the differences in income inequality can be attributed to differences in personal investments in human capital. Furthermore, he noted that personal ability and access to opportunity provide residual variation in the model. Overall, he found stability in the relationship between earnings and education and experience.

Since that early work, human capital theory has been refined and tested in multiple disciplines. The basic concept implies that when a person attends school, he or she receives education and training that increases his or her productivity and, thereby, his or her value (i.e. human capital) to employers (Becker 1993). Many economists have developed clear theoretical linkages between increased human capital and increased wages (Belfield 2000). McMahon (1998) provides a visual model that suggests that those with higher degrees have stronger earnings over their lifetime for (noted in Figure 6.1). The model suggests that early investments in education can lead to a lifetime of benefits,

both monetarily (wage differential) and socially (non-monetary returns). Though McMahon's model is useful as a visual interpretation, the approach can be more clearly delineated if we consider how a person's allocation of time between work and leisure affects his or her employment (Mincer 1997).

The human capital approach to wage growth over a life cycle emphasizes the role of knowledge and skills attained in school and on a job. Workers face a tradeoff between current and future earnings. To attain human capital, the generally accepted economic model for human capital, based on the work of Becker (1993), Ben-Porath (1967), and Mincer (1997), is:

$$Q_t = f(K_t, S_t, X_t; B)$$

In this model,  $Q_t$  is the person's overall investment in human capital during period  $t$ ,  $K_t$  is the beginning stock of human capital at  $t$ ,  $S_t$  is the fraction of time in period  $t$  devoted to the production of  $Q$ .  $X_t$  includes purchased goods and services (i.e. education) used in the production of human capital. Lastly,  $B$ , highlighted by (Becker 1993), indicates limits of the individual's intellectual and physical capacity.

From basic theory of demand, Belfield (2000) suggests that the demand for education can be formulated as a function of  $P_E$ , the price of education,  $P_X$ , the price of other goods,  $Y$ , the current parental income level,  $w$ , forgone earnings, and the distribution of income (normally defined by socio-economic status (SES)):

$$D_E = f(P_E, P_X, Y, w, SES)$$

From this equation, one can assume that if education is a normal commodity, decreases in the price of education permeated through policies derived to keep education affordable will result in increases in an individual's desired level of education. With policies

providing increased access and financing for education, specifically within the framework of the community college, one should expect huge influxes of students, which is not the case. With steady increases in enrollment, traditional microeconomic demand theory would suggest that additional education will lead to higher wages. With that in mind, research suggests that wages are increasing at a level consistent with growth in higher education enrollment numbers (Department of the Treasury 2012), though some have suggested that the connection between education and wages would be more apparent if labor market classifications originate from educational attainment levels (Grubb 1996).

In this present environment, where the provision of community colleges becomes a suitable policy measure for improving the lives of the lower and middle classes, it is therefore important for educators and policy makers to ask what role education and experience play in employment and wage decisions. The perceived value of human capital cannot be determined easily. Education and experience are signaling mechanisms that suggest to employers that an applicant has a certain level of potential human capital (Ehrenberg and Smith 2006). Employers then use those mechanisms to rate applicants. Employers interview the applicants who signal sufficient human capital. Using Careerbuilder.com, employers can sort applicants based on the levels of their previous experience and education, the two components of human capital theory. Employers do not even have to look at applications that do not meet the minimum assigned standards. In effect, this screening blocks applicants with lower education and experience levels from pursuing higher-level jobs.

Ultimately, the analysis in this present research considers if sub-baccalaureate and baccalaureate credentials have similar effects on wages. I propose that employers who seek to hire people into more prestigious, higher-paying jobs restrict access to applicants with sub-baccalaureate degrees because a bachelor's degree has become a socially legitimized marker of sufficient post-secondary education (Kalmijn 1994). The traditional argument suggests that a bachelor's degree signals sufficient human capital in the labor market. This legitimization of bachelor's degree attainment as an education marker is the main premise for my argument that social closure based on educational credentials negatively affects college graduates with sub-baccalaureate credentials. Many employers perceive applicants with community college credentials such as associate degrees as weaker job applicants than applicants with bachelor's degrees (Van Noy and Jacobs 2012). Some employers restrict certain white-collar employment opportunities from job applicants who do not have bachelor's degrees because they do not hold the minimum education requirement for the open positions. A degree from a community college serves as an *a priori* signal to potential employers of an inferior educational credential net of any human capital skill attainment or experience.

#### 6.1.1. Human Capital Returns

Oreopoulos and Petronijevic (2013) and Paulsen (2001) summarized much of the recent human capital research on the substantial positive private returns from the personal investment in achieving post-secondary credentials. More specifically, Grubb (2002a, 2002b) and Belfield and Bailey (2011) summarized most of the early research work on human capital returns from community college education in a macro assessments of national, state and local studies. According to Grubb's (2002a) assessment, degree

completion at community colleges has benefits that can materialize within a few years. Though positive returns have been established, the question remains whether associate degrees lead to better employment options (Grubb 2002b).

Much of the employment success that a person has after finishing postsecondary education relates to the type of degree received. Marcotte et al. (2005) found that people who graduated from community colleges had better earnings than people who only had a high school diploma. Specifically, Dadgar and Trimble (2015) found increased wages and salary returns that are consistent with the length of the programs of study (longer programs led to higher wages). Jepsen, Troske and Coomes (2014) found positive economic returns for people with associate degrees or diplomas and almost no returns for those who completed certificate programs. Xu and Trimble (2014), however, found positive economic returns for people who study certificate programs. Other studies have found weak returns for certificate programs, but somewhat stronger returns for associate degrees (Dadgar and Trimble 2015, Liu, Belfield and Trimble 2015). Even attaining some post-secondary credit without a degree can have a positive effect on earnings (Belfield and Bailey 2011, Jacobson, Lalonde and Sullivan 2005b, Marcotte et al. 2005).

There are also effects that are the results of demographics and programs of study. Davies and Guppy (1997) found that the field of study had an effect on post-graduate earnings. After completing higher education, people with more specific and technical degrees do better financially than do people in other degree programs (Selingo 2013). Hodara and Xu (2014) found a positive effect on earnings from taking developmental reading and writing courses at community colleges. In contrast, taking developmental math courses decreased wage earnings. Research found that women gain higher returns

from obtaining credentials (Dadgar and Trimble 2015, Jepsen, Troske and Coomes 2014, Liu, Belfield and Trimble 2015). In a pair of studies based on Washington state statistics, Jacobson, Lalonde, and Sullivan (2005a, 2005b) found that students in technically-oriented, science and engineering-based programs were more likely to have higher earnings than were people studying non-technical fields. Overall, wage returns for community college credentials vary by state and by program (Dadgar and Trimble 2015, Hodara and Xu 2014).

Human capital theory does not explain all of the circumstances surrounding employment. For example, it does not account for the growing income inequalities in our country (Congressional Budget Office 2014). A large body of research by sociologists identifies discrimination, class privilege, market structure and a variety of structural factors, all of which undermine the human capital argument that more education leads to better wages (Berg and Gorelick 1970, Breen and Jonsson 2005, Coleman 1988, Ginzberg and Berg 1972, Goldrick-Rab 2006, Granovetter 1974, Vallas 2012, Williamson 1981). Despite a considerable body of scholarship on college quality and choice (Haveman and Smeeding 2006, Karabel and Astin 1975), very little recent work has been done to investigate if exclusionary actions can affect community college students' future education and employment.

## 6.2. Status Attainment Theory

Lee and Rojewski (2009) have suggested that status attainment theory is a relevant concept when considering students' occupational aspirations. In the tradition of Blau and Duncan (1967), status attainment theory proposes that occupational aspirations are products of social stratification and are dependent on social and demographic



variables (Johnson and Morimer 2002). The theory suggests that structural factors play a significant role in individuals' choices and potential attainment. "Status attainment researchers assume that occupations differ in their levels of prestige or status reflecting in turn their importance to the functioning modern economy" (Kalleberg and Berg 1987:10). The theory relies on subjective measures of the importance people assign to certain employment positions. In an early use of the theory, Blau and Duncan (1967) examined structural forces in the labor market. They noted that, though some have suggested that each person is a product of his or her family background, the effects of a person's background on occupational attainment are mediated by that person's attained educational levels. Sewell and Hauser (1975) went further in applying the theory by incorporating an individual's aspirations, academic ability, and other factors into a status attainment model. Recent work stresses the role of social networks in building career aspirations (Bozick et al. 2010, Sewell et al. 2003, Walpole 2003). The recent research suggests that young people from affluent families are more likely to receive ample support from their social and family networks to do well in school and pursue their academic goals

Status attainment theory is not without its critics (Burawoy 1977, Coser 1975). Some suggest that status attainment theory oversimplifies the complexities associated with a person's understanding of their own social mobility (Jencks 1972). Particularly, some researchers see status attainment as an oversimplified supply and demand argument, where status or prestige is just a given component of an occupation (Kalleberg and Berg 1987). In this view (sometimes referred to as new structuralism), researchers should incorporate other factors such as race and gender into what become status

outcomes. My research is an extension of that desire to develop an expanded view of factors that affect employment outcomes. In the context of social closure, a central observation of new structuralism is that job status is a function of credentials (Bills 1988).

There has also been some work on the relationship between community college students and socio-economic status. Many studies conclude that social status origins have an impact on college attainment (Walpole 2003). Status attainment among community college students has, however, not been as widely explored. Research studies reviewed by Pascarella and Terenzini (2005) indicate that when a person initially attends a two-year institution decreases subsequent occupational status. Older research works highlight differences in job status outcomes by degree earned, but additional research needs to be done to consider the effect of educational credential attainment on occupational status in the context of the present job market.

#### 6.2.1. Status Returns

Venniker (2001) summarized many of the research studies into the social benefits of increased education. In early research on community colleges, Monk-Turner (1983) examined the effect of attending a community college on job attainment 10 years after graduating from high school. Even when controlling for backgrounds, she found that former community college graduates held lower status than four-year college entrants. In addition, she found that community college entrants were half as likely to work in professional occupations and twice as likely to have blue-collar occupations. Anderson (1984) obtained similar findings while controlling for social backgrounds and high school performance. In later work, Monk-Turner (1991) reaffirmed the status difference with

more recent data and suggested that community college attendance had a negative impact on a person's future SES. She suggested that, early in their employment life cycle, community college students suffer an occupational and wage penalty that outweighs the opportunity costs of attending a four-year institution.

Since Monk-Turner's work, Whitaker and Pascarella (1994) found that there was a small status-attainment disadvantage for students who complete an associate degree when compared to the status-attainment for students who complete a bachelor's degree. The authors suggest that transferring to a four-year institution will negate any experiential disadvantage that comes from attending a community college. Terenzini, Cabrera and Bernal (2001), however, found that high school students have already developed a prior understanding of their own status attainment possibility based on their families' present SES, and that understanding affects what type of higher education they pursue. Therefore, any differences between SES and educational attainment are difficult to disentangle.

Regarding careers, Levey (2010) found that community college graduates start on a much lower career path, and that job status and salary outcome differences between community college graduates and four-year institution graduates are neither increased nor eliminated even 15 to 20 years later (though some of the results are not significant). In somewhat similar findings, Smart (1986) found that higher educational institutional characteristics, student performance, and student experiences outside of the classroom all play significant roles in a person's post-graduation occupational status. Applying the analysis of status to community colleges internationally, Anisef, Ashbury and Turritin

(1992) examined the results of a longitudinal survey of residents in Ontario, Canada<sup>35</sup> and found that community college graduates found employment in positions that had lower occupational prestige than those obtained by graduates with bachelor's degrees.

### 6.3. Institutional Effects

Many research studies highlight how institutional quality, specifically admissions selectivity, have a direct relationship with post-graduation earnings (Pascarella and Terenzini 2005). Kalleberg and Dunn (2015) found several community college characteristics (not related to personal student characteristics) had an effect on individual earnings separate from the effects of personal student characteristics. Additionally, the authors found that salaries for graduates were lower (significantly for males) if the college is located in an area with high unemployment. Stephan, Rosenbaum and Person (2009) and Person and Rosenbaum (2006) found that students at two-year public and private colleges had very similar backgrounds, but degree completion outcomes were much better for students at the private two-year colleges. Perhaps with some relevance to those outcomes, Laanan (2003) found that students from private two-year institutions came from higher socio-economic backgrounds, went to college further from home, and were more likely to live in on-campus housing facilities. Additionally, Anderson (1984) found that graduates from smaller, more academically selective, less vocationally oriented colleges (both two-year and four-year institutions) had higher socio-economic status attainment outcomes than peers from other types of institutions.

There is no clear support for the presence of economic and status benefits for community college graduates. Some education is obviously better than no education. It is,

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<sup>35</sup> Canada has a similar community college system to what is in the U.S.

therefore, impractical to compare high school graduates with people who studied post-secondary education. I propose that most of the monetary and job status benefits from degree attainment come more from credential signals sent to potential employers and less from the graduates' increased educational knowledge. My proposal may partly explain the impact of institutional and field of study differences on wage outcomes. An acquired knowledge benefit from community college education (a key component of human capital theory) manifests itself in the positive wage benefits that even non-completers receive when compared to high school graduates. For example, a person in a Computer Aided Design course learns skills that can be useful in employment even for people who do not have a degree in computers. Though some might disagree, there is no consistent support for suggesting that completion of an associate degree plays a major role in the employment market. This chapter takes a new direction in that I examine the differences between degree earners and non-degree earners taking into account occupations. Thus, I hypothesize two points:

1. *All higher education degrees will have positive effects on graduates' wage outcomes relative to the wages of those who obtained some post-secondary education but did not earn a degree.*
2. *All higher education degrees will have positive effects on graduates' job status outcomes relative to the job status of those who obtained some post-secondary education but did not earn a degree.*

#### 6.4. Methods

This analysis incorporates data from Educational Longitudinal Study (ELS) with data from the 2000 U.S. Census. The ELS follows 16,190 10<sup>th</sup> graders in 2002 through

2012. I investigated the effect of degree earned on wage and job status outcomes based on self-reported data in 2012. I investigated the correlation between earnings, job status and the highest degree that each respondent had earned by eight years after high school. I do the analysis by using Ordinary Least Squares (OLS) multiple regression and fixed effects.

#### 6.4.1. Variables

I used four groups of higher education credentials as my independent variables: certificates, associate degrees, bachelor's degrees, and graduate degrees. There are clear differences between the ability and motivation of students who pursue higher education and those who do not (Becker 1993, Cohen, Brumer and Kisker 2014). In the present study, I compared people with similar ages and control for many background characteristics in order to minimize any potential differences that could bias the results. The reference group included people who attended a higher education institution but did not get a degree by 2012. With this comparison, I was able to identify what benefit can be attributed to attaining an educational credential as opposed to just attaining human capital based on higher education.

I controlled for demographic variables, family and community socio-economic characteristics, post-secondary institutional characteristics, and personal higher education variables in the analysis. The demographic variables included race and gender. I used the respondent's family SES for the socio-economic well-being of the family. Using 2000 U.S. Census data, I included the natural log of family income in 2000 by zip code area to consider the variable economic characteristics of the community where the respondent resided when he or she was in high school. I sought to control for institutional

characteristics, so I added a variable if the respondent's final institution was "highly selective" according to 2005 Carnegie Classifications of Institutes of Higher Education.<sup>36</sup> I also included a variable indicating whether the final institution was public or private. I also added some individual higher education variables, including the respondents' higher education grade point average (GPA),<sup>37</sup> the number of higher education institutions that the respondent attended, and whether or not the individual attended a four-year institution.<sup>38</sup> The final three variables examined the person's present environment, including whether or not he or she had received public assistance between 2009 and 2012, whether or not the person is working fulltime at one occupation, and whether or not the individual is single in 2012. Table 6.1 identifies all variables as well as coding structures included in the models for this chapter.

There are two dependent variables in this analysis. The first is the natural log of annual wages seven years after high school in 2011 (the year before the study concluded). This variable has been the established dependent variable in human capital models for many years (Mincer 1974). This format makes outliers less influential in the model. Furthermore, one can interpret the results to discover the percentage change in wages. The second dependent variable is the occupational prestige scores as defined by the National Opinion Research Center 1989 rankings (Nakao and Treas 1990). The prestige scores come from personal interviews where respondents had to rank occupations. The values range from 1 to 100. Values are noted to 1/100 of a point. A score of 100 would apply to the most prestigious job.

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<sup>36</sup> Data available at <http://carnegieclassifications.iu.edu/downloads.php>

<sup>37</sup> GPA is highly correlated with other standardized measures of academic ability like SAT or ACT scores. I chose this variable because not all community college students reported taking standardized test scores.

<sup>38</sup> I included four-year attendance to consider if there were any effects on wages and prestige from just attending a college university.

I used a fixed effect regression analysis based on two-digit O\*NET occupation codes for job categories, referred to as job families. O\*NET is a program developed by the U.S. Department of Labor to provide available occupational information.<sup>39</sup> There are 24 job families, and there were at least 20 respondents in my analysis in 23 of the job families (one family was not present). There are six-digit occupational codes with specific occupation definitions, but I did not have enough respondents to use the expanded codes for fixed effects regression.

#### 6.4.2. Analysis

Multivariate linear regression models present the dependent variable as a function of the independent and control variables. A common way to estimate parameters with a multivariate model is by using OLS regression. This approach establishes parameter values that minimize the differences in the observed responses. OLS assumptions are not practical for many types of analyses because estimators have strong potential for biased responses (Long and Kurlaender 2009). Furthermore student outcomes have unobserved student characteristics such as background and motivation for which general OLS models cannot account (Card 2001).

I used two different approaches to examine the two hypotheses.<sup>40</sup> For the analysis of the wage data, I used OLS, but I also modeled the results with an individual fixed-effect (FE) model to address the issue of individual effects based on the type of position that a person holds. There is potential for a correlation between an individual's wages and the type of employment that he or she has, so this type of analysis is useful because this time-invariant variable will not bias coefficients. Overall, the coefficients represent the

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<sup>39</sup> More information available at <https://www.onetonline.org/>

<sup>40</sup> I also did the analysis using Weighted Least Squares regression and the results are consistent.



difference between each entity (or job category for this analysis) over time and the average for all the effects for that entity:

$$Y_i - \bar{Y}_i = \beta_1(Y_i - \bar{Y}_i) + \dots$$

The fixed effect approach controls for unobserved heterogeneity between occupations in the results. The results are less interpretable than those obtained with OLS but control for omitted variable bias. Many researchers have used this type of approach for research studies on community colleges (Hodara and Xu 2014, Jacobson, Lalonde and Sullivan 2005a, Jacobson, Lalonde and Sullivan 2005b, Jepsen, Troske and Coomes 2014, Liu, Belfield and Trimble 2015, Xu and Trimble 2014). For the analysis of the status data, I do not use entity fixed effects because the dependent variable, occupational prestige, is based on the O\*NET job family.

My research is different from previous studies in that I control for many background variables including occupation. More recent work, Liu, Belfield and Trimble (2015) used financial aid as a proxy for family background, yet my results indicate that community college students are less likely than university students to accept financial aid (Table 3.7). Furthermore, Liu, Belfield and Trimble (2015) use only the first semester GPA as a proxy for academic ability but that variable does not account for issues that could arise during a student's first semester at a college. In my analysis, all of the respondents were roughly the same age, a control that is different from many other studies that looked at students from all ages (Dadgar and Trimble 2015, Jacobson, Lalonde and Sullivan 2005b, Xu and Trimble 2015). Some research work controlled for the family economic situation (Dadgar and Trimble 2015, Kane and Rouse 1995), but no work has considered the communities from which the respondents grew up. I take into

account the respondent's residential zip code. As Cresswell (1996) states, "the effect of place is not simply a geographical matter. It always intersects with sociocultural expectations" (8).

The previous work on community colleges students and wages used fixed effects models that were generally analyses of certain states. Many times, the researchers used fixed effects based on time and entity (the community college) (Hodara and Xu 2014, Jacobson, Lalonde and Sullivan 2005a, Jacobson, Lalonde and Sullivan 2005b, Jepsen, Troske and Coomes 2014, Liu, Belfield and Trimble 2015, Xu and Trimble 2014). This research differs from previous work in that I used a nationally representative study of respondents who were at community colleges and four-year institutions, and I based the fixed effects on occupational categories (called families). Students transfer regularly, and it is therefore valuable to include students from both types of institutions.

### 6.5. Results

Table 6.2 presents the average annual earnings of the respondents in 2011 and the average occupational prestige score. The results reveal that the average salary per credential increases up to a bachelor's degree at almost \$34,000, with the average salary for graduate degree holders being about \$3,500 lower. The lower average for graduate degree holders is partly because almost a quarter of them were doctoral degree earners (medical and other fields), and their average salary was \$24,261.20 (with a median of only \$10,000). The average salaries of the holders of diplomas to associate degree ranged from \$20,405 to \$25,142. Average salaries were several thousands of dollars apart for the other educational categories. Individuals who did not obtain a high school diploma earned the lowest average salary (\$14,249), a value less than half of the average salary of

graduate degree holders. According to the U.S. Department of Health and Human Services, this wage equates to the poverty level for sole providers of families with two or more individuals in 2012.<sup>41</sup>

Average job prestige scores increased for each credential category (second column of Table 6.2). All categories had individuals with the lowest job prestige score of 27.1 (food preparation and serving related occupations) and one at the highest of 64.2 (healthcare practitioners and technical occupations). By far, graduate degree holders had the highest average prestige score. Their average of 56 was more than 7 points higher than the average of the second highest group, bachelor's degree holders. It is this high because medical professionals and lawyers, the two job families with the highest occupational prestige, made up more than half of all graduate degree holders. There was very little difference between the average job prestige of the diploma holders (approximately 1300 people) and the average job prestige score for respondents who did not attain a high school credential (approximately 330 people). Both groups had the most people in jobs with the lowest prestige scores. The average prestige scores for the people with some post-secondary education, a certificate, or an associate degree were very similar. In fact, the median job prestige score were almost the same for all three groups. Some college and certificate students had a median prestige score of 37.7 (the score of office and administrative support), while the associate degree holders' median score was somewhat higher at 40.1 (the score of installation, maintenance and repair).

Table 6.3 includes the estimated coefficients and robust standard errors for the models tested. The first two sets of columns present the effects of higher education credentials on the natural log of wages with general OLS regression and with fixed

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<sup>41</sup> Available from <https://aspe.hhs.gov/2011-hhs-poverty-guidelines>

effects. With the fixed effect model, there are 23 groups, and the group size ranged from 20 to 877 (average 264.1). The results are surprisingly very similar. Coefficient values stayed almost the same. Both models had very similar coefficients of determination (OLS  $r^2 = 0.193$  and FE  $r^2 = 0.229$ ). The rho coefficient in the fixed effect model indicates that only 6.9% of the variance in the model is due to differences in wages across occupations. In the wage model, graduate degrees and associate degrees led to no statistically significant differences in wages when compared to wages received by people with some post-secondary education and no credential. In contrast, there is a small significant impact on wages for associate degree holders ( $p < 0.05$ ), and possession of bachelor's degrees has stronger statistical significance when compared to people who have no credential ( $p < 0.01$ ).

The control variables highlight the role of other factors that can affect wages. Being male had a statistically significant positive effect on earnings ( $p < 0.01$  in the FE model), while there was almost no effect based on race. Family SES did not significantly correlate with the natural log of wages, but the natural log of mean family income for the respondent's high school community was significantly positively correlated with the natural log of respondent's wages in 2011. Additionally, graduating from a highly selective institution is positively associated with wages, but there was no significant difference between graduating from a public or private university and wages. The correlation between a person's GPA and his or her natural log of wages is both positive and statistically significant ( $p < 0.01$ ). There was also a positive and statistically significant correlation between accepting financial aid ( $p < 0.05$ ) and the natural log of wages (a larger percentage of four-year students accept financial aid than community

college students, see Table 3.7). Attending a four-year institution did not have a significant impact on wages, but the number of post-secondary institutions that a person attended is negatively correlated with the natural log of wages. Regarding the respondent's situation at the time of the survey, people who had received public assistance in the immediate past and people who were single were statistically more likely to have lower wages than people who not on public assistance or married at that time ( $p < 0.01$ ). Finally, working fulltime is positively and significantly related to earning higher wages ( $p < 0.01$ ).

The final set of columns in Table 6.3 present the results of the impact of degree on occupational prestige using OLS regression. The F statistic for the model is statistically significant ( $F = 99.55$ ), and the coefficient of determination ( $r^2$ ) suggests that the model accounts for about 19% of the variance in the dependent variable. All credentials were statistically significant and positively correlated with increased job prestige (all were  $p < 0.01$ , except for certificates, which was  $p < 0.05$ ). A negative correlation exists between being female and job prestige ( $p < 0.01$ ), but there was no relation with any of the race or ethnicity variables and job prestige. Graduating from a highly selective institution was significantly correlated with having jobs with increased prestige ( $p < 0.01$ ), but there was no significant correlation between institutional control (being public or private) and a respondent's job prestige. The coefficients for higher education GPA, receiving financial aid, and the number of post-secondary institutions attended were all positive and statistically correlated with increased job prestige ( $p < 0.05$ ). Interestingly, the number of post-secondary institutions attended is negatively correlated with the natural log of wages, but the variable positively correlated with job

prestige. Being single and having made previous use of public assistance negatively affect job prestige, while working fulltime positively affected job prestige. All three of the 2012 situational variables were statistically significant ( $p < 0.01$ ). The value of the model intercept for the job prestige model was only about 2 points higher than the value for the lowest job prestige in the model (27.1).

## 6.6. Discussion and Implications

The present analysis examined the impact of higher education credentials on wages. Specifically, I investigated, in a comparison of people who studied in higher education but did not earn a credential, whether or not community college credentials (certificates and associate degrees) improved wages and job prestige. In general, my findings were different from previous studies (Belfield and Bailey 2011, Grubb 2002a, Grubb 2002b). Previous research suggests that community college students earn more than high school graduates and less than bachelor's degree holders. I found no positive wage benefits and only small benefits in prestige for associate degree holders and a small wage and status benefits for certificate earners. The results of this present study challenges some of the assumptions of human capital theory as a rationale for promoting community college education. This research contributes to the present body of literature by utilizing more recent data and by controlling for the respondents' backgrounds, abilities, and employment.

Though there were no significant wage benefits from obtaining associate degrees, there were positive wage benefits for receiving certificates. The positive effect from certificate programs is logical because many people who study in certificate programs get specific vocational training for occupations that are more technically-oriented. Often

these employment fields have credential or entry test requirements (Weeden 2002). Also, almost half of the certificate earners in this study were in health related fields (see Table 3.10), and these jobs are in high demand.<sup>42</sup> A wage benefit is, therefore, understandable. Xu and Trimble (2015) also found positive returns from certificate programs, but the results of this study contrast with the findings of Liu, Belfield and Trimble (2015) and Dadgar and Trimble (2015), which suggest wage returns from certificate programs are much weaker than the returns from associate degree programs. The studies from Liu, Belfield and Trimble (2015) and Dadgar and Trimble (2015) have large-scale, single-state analyses of all students who study in community colleges. I was able to replicate their results (except for the institutional effects), but there are many other factors that are necessary to consider when establishing the effect of any credential on wages. The additional controls in this study are one reason why the findings in this present research contrast with many of the established research on community college education.

Though the results indicate that there are no significant positive wage benefits from having only an associate degree when compared with the benefits of attending college without completing a credential, I am not suggesting that all associate degrees are worthless. There are specific occupations that require associate degrees. Many of associate degree jobs are technical in nature (DeZube 2016); however, almost one third of the people in this study whose highest level of credential was an associate degree studied liberal arts or general studies (noted in Table 3.10). Another 13% of the associate degree earners studied business. Furthermore, only around one third of associate degree earners are in positions that require an associate degree (noted in Table 3.16). I, therefore,

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<sup>42</sup>Information available at <http://allhealthcare.monster.com/careers/articles/1801-top-10-in-demand-healthcare-occupations?page=1>

question Grubb and Lazerson's (2004) assertion that completing a community college credential leads to a human capital benefit. I propose that there is a middle labor market between that market occupied by high school graduates and the market occupied by college and university graduates, as Grubb (1996) suggests. In contrast to Grubb, I do not think associate degree credentials define the primary condition for entry to jobs within this labor market. The positions in the labor market are based on a vocational knowledge that is not necessarily related to degree attainment.

It is important to recognize that the analysis in this research study was different because I used a fixed effects model based on the type of job people were doing eight years after high school and not on their post-secondary institution. Many researchers suggest that the value in community college does not just come from the receipt of a degree, but that it can materialize from just the experience of studying in higher education (Jacobson, Lalonde and Sullivan 2005a, Kalleberg and Dunn 2015, Marcotte et al. 2005). It can be, therefore, useful to control for occupations when examining the effect of credentials earned on wages. In the present political environment, especially with the current strong emphasis on promoting terminal degrees at community colleges, it is essential to consider the value of credentials especially in different occupations.

Though my results did not indicate a significant effect on wages from having an associate degree, they did indicate that earning community college credentials had positive effects on job prestige ratings. The results of the study indicate that job prestige improves with increased educational credentials. The contradiction between the null effect on wages and the positive effect on job prestige ratings is logical. Although the higher average job prestige rating is statistically significant for community college degree



holders, the improvement only amounts to between one or two points on a 100-point scale of job prestige. Additionally, job prestige ratings are subjective measures based on personal opinions and do not always measure the well-being associated with a position. Occupational prestige ratings are often used as a measure of SES, but the scale has some substantive differences from other measures of socioeconomic well-being (Nakao and Treas 1994). There have been criticisms that the occupational prestige ratings do not appropriately reflect occupations commonly held by women (Hauser and Warren 1997). Certificate and associate degree programs can help improve a person's occupational prestige, but the improvements may be small and may not be reflective of better overall employment.

With the present political emphasis on higher education outcomes, it is practical to address wage and job status findings for community college degree holders. There are limitations in the benefits to the benefits that can be gained from community college degrees. Some of the benefits from community college credentials are related to the nature of the degree particularly if it is vocational and related to occupations that are in high demand. General studies associate degrees have very limited benefits for people who do not complete bachelor's degrees. It is necessary to pivot the discussion from opening community colleges through President Obama's plan for free community college education to everyone to developing policies that provide targeted pathways where community college students who want to study can find themselves working toward employment in useful occupations that they enjoy.

## CHAPTER 7: CONCLUSION AND POLICY IMPLICATIONS

*I am particularly interested in knowing more about efforts to reduce geographic and economic barriers to the development of individual talents through extended educational opportunities which seem to be reflected in many states and localities by so-called “community college.” (Harry Truman 1950)<sup>43</sup>*

“In a context of increasing inequality between rich and poor and growing challenges to the established order, the importance of a new pathway to economic advancement is difficult to overestimate” (Brint and Karabel 1989:5). There are almost 13 million people students in the 1,132 community colleges in the United States.<sup>44</sup> All of these individuals seek opportunities to improve themselves through furthering their education. These institutions provide educational opportunities for many poor and disadvantaged people in small towns and big cities across the country. Because the institutions have generally open access admission policies, community colleges provide a pathway for many who would not otherwise be able to go to post-secondary institutions. Community colleges are convenient, accessible, and expensive to almost anyone within the country.

In the view of some, “Open access to higher education, as practiced by the community college, is a manifestation of the belief that a democracy can thrive, indeed survive, only if people are educated to their fullest potential” (Vaughan 2006:4). There are those, however, who suggest open-access policies at community colleges hinder

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<sup>43</sup> This quote comes from a letter from President Truman to the “Office of Education – Higher Education Division” printed on page 129 of Thomas Diener’s (1986) *A Documentary History of the Junior and Community College Movement*. New York: Greenwood Press.

<sup>44</sup>Information from: <http://www.aacc.nche.edu/AboutCC/Pages/default.aspx>

opportunities for those who are less fortunate (Scherer and Anson 2014) and are a “contemporary expression of the dual historical patterns of class-based tracking and of educational inflation” (Karabel 1972:526).

The purpose of this dissertation was to test for the presence of social closure using two distinct parts of the educational mission of community colleges. One part of the mission, which I called the “gateway to opportunity” argument, suggests that community colleges provide viable entrance points for people who want to pursue a bachelor’s degree. I tested two aspects of this argument. I investigated whether or not attending a community college affects the likelihood that a person will meet or exceed his or her educational expectations. I also tested the effect of starting at a community college on obtaining a bachelor’s degree for community college students who transferred to four-year institutions. In this model, I included a mediating variable, participation with engaging student activities to highlight the social influence on degree persistence.

The second aspect of the mission is what I refer to as “economic well-being and job prestige” argument. Community colleges provide terminal degrees for millions of Americans. Employers consider community college credentials, mainly certificate programs and associate degrees, superior to high school diplomas but are not as prestigious as bachelor’s degrees (Van Noy and Jacobs 2012). There are those who believe that there is a developed labor market for people with community college credentials (Grubb 1996). Some believe that community college credentials provide opportunities for people to move up in the world, as they differentiate themselves from people who only graduated from high school (Griffith and Connor 1994). Yet, others

assert that a community college education seeks to reinforce labor market segmentation and hold back people from disadvantaged backgrounds (Karabel 1986).

The mission of the community college, though designed to include almost all forms of educational assistance to local communities, can be considered to be inherently contradictory, and community college outcomes, though based on positive intentions, can be best described as unclear. It is uncertain to what extent community colleges help the disadvantaged and to what extent they serve to reinforce inequalities. “The community college could be very good at allowing students access to higher education and yet be poor at helping them achieve a baccalaureate degree” (Dougherty 1994:7). With so much uncertainty and political interest about the issue, this dissertation contributes to the discussion by investigating multiple aspects of community college student outcomes. This topic is politically relevant for many because the development of economic opportunities for local communities is high on the agenda of many state and national political leaders.

### 7.1. Discussion of the Findings

I based my research on the Weberian-derived theory of social closure. In Weber’s view, the actions of a social class can create a market situation when members of a social class coordinate social actions in ways that restrict access and opportunities (Gerth and Mills 1946). This action is referred to as social closure. For this dissertation, I focused on what Parkin (1979) calls exclusionary closure, an “attempt by one group to secure for itself a privileged position at the expense of some other group through the process of subordination” (45). Contemporary theorists consider this type of closure the “predominant mode of closure in all stratified systems” (Parkin 1979:45).

I analyzed students studying in both parts of America's stratified post-secondary higher education system: community colleges and four-year institutions in order to test hypotheses about the presence of formal and informal social closure mechanisms that can affect community college attendees and graduates. I based my research on four distinct theoretical frameworks: the "cooling out" hypothesis, education theories of student engagement and persistence, human capital theory, and status attainment theory.

The second chapter of this dissertation highlights the historical issues and policies involving community colleges. Local educational and political leaders originally developed two-year colleges as a means of providing educational opportunities in local communities and keeping weaker students out of prestigious colleges and universities. The administrative structure at community colleges varies greatly among states (Richardson Jr. and de los Santos 2001), yet there is a consistent institutional emphasis on increasing enrollment numbers (Scherer and Anson 2014). Community colleges changed into tools of vocational education in order to stay relevant and to respond to political desires (Dougherty 1994). These shifts in the community college agenda have led to the community colleges that we see today, multi-campus institutions where everyone from high school dropouts to college transfers can pursue an education that is responsive to their demands and schedules. Though there has been some work on increasing student involvement at community colleges (Brown, King and Stanley 2011), most community colleges maintain only general facilities that focus classes and student access.

In Chapter 3, I present summary statistics for community college and university students. The results show that, although race and gender do not have an effect on the post-secondary institution high school students choose, family socio-economic status and

communities do play an important role. Overall, community college students are less able academically and are more likely to come from less affluent backgrounds. Community college students are more likely to delay enrollment in post-secondary education and to work while enrolled in classes. Many of these students take a lot longer to complete their studies. About 30% of the associate degree earners and non-completers were still taking college classes eight years after they left high school. The most common associate degree fields for students who did not complete additional credentials after community college were general studies degrees. The most common certificate programs were in health-related occupations. Only about one third of the people who were employed with associate degree were in positions that require an associate degree. This finding calls into question the validity of the political argument that having more people with associate degrees will improve the economic development of communities.

In the fourth chapter, I reported my investigation of the cooling out hypothesis as applied to the 12<sup>th</sup> grade educational expectations of students attending either a community college or four-year institution. I analyzed two models of bachelor's degree expectants. The first investigated where the respondent started their higher education. The second model looked at the credit hours earned and also considered the completion of an associate's degree as a factor. Both models had strong predictive capability (based on model-fit statistics). In the first model, there was a negative effect on starting at a community college on the likelihood of a person meeting or exceeding their educational expectations. In the second model, there was positive effect for credit hours earned but a very strong negative effect for students who completed associate degrees. Cooling out is likely still occurring among community college students, so those who suggest that the

cooling out process died in the 1970's (Cohen, Brawer and Kisker 2014) may be incorrect.

Overall, the results would suggest that there may be cooling out, but it is not clear if it is caused by community college administrators seeking to reorient those community college students with lower expectations. Not meeting or exceeding educational expectations seemed to be more of a factor of the completion of a lower-level credential, the associate degree. What is not clear is why students choose to pursue associate degrees when they want bachelor's degrees. In Chapter 3, I found that most people who receive an associate degree do not complete a bachelor's degree by eight years after high school (Table 3.8). Personal economic pull factors may cause the decision for some to earn an associate degree instead of a bachelor's degree. It may be that students think that an associate degree is good enough for the types of jobs they want. The associate degree provides quicker economic returns for students who want to go to the workforce faster. The negative coefficients for the variables "starting at a community college" or "graduating with an associate degree" may also come from personal push factors on students to complete shorter degree programs by students' family, work, or social situations. Students may feel pressure to finish earlier with associate degrees. It may also be that associate degree earners just take longer to realize their expectations of getting a bachelor's degree because of external factors. If the negative effect on the likelihood of students meeting or exceeding their educational expectation is a push factor associated with friends or family encouraging associates degree earners to stop future studies because of personal, job, or economic needs; then there is the possibility that social closure limits affect people who go to a community college (though personal issues does

not appear to be a consistent issue for community college students who did not complete a degree, see Table 3.14).

In the fifth chapter of my dissertation, I focused on students who started their education at a community college and transferred to a college or university. I tested the likelihood of a student completing a bachelor's degree if he or she started at a community college. I added participation with engaging educational activities on campus as the mediating variable to social conditions affects community college transfer students. I also controlled for only students who attended a four-year educational institution. In order to do this analysis, I used structural equation modeling with maximum likelihood expectation. Overall, I found that there was a negative effect associated with a student starting at a community college on bachelor's degree completion, but that effect goes away when the analysis includes controls for the social, economic and characteristics of the students. The lack of a statistically significant effect for starting at a community college in the expanded model is consistent with the findings of Rouse (1995). Additionally, I found that community college transfers were less likely to become engaged with high-impact educational activities on campus and that involvement with such activities is positively related to the likelihood of a person completing a bachelor's degree. Therefore, I suggest that some previous research studies are correct in suggesting that students who transfer from community colleges struggle when they go to universities (Alfonso 2006, Doyle 2009, Long and Kurlaender 2009, Monaghan and Attewell 2015, Reynolds 2012). The community college transfer student struggle, however, relates to factors other than if the person started at a community college. Rather, the issue is a product of community college students' background and social environment, factors



consistent with social closure theory. Administrators and faculty can address the lack of involvement among community college transfer students by them to take part in out-of-class educational activities around campus.

In Chapter 6, I investigated economic well-being and job prestige arguments by examining the wage and status returns for community college degree holders. Overall, I found only a small positive wage benefit for certificate holders and no wage benefit for associate degree recipients. The effects remained consistent even when I controlled for the person's job categories. The positive wage benefit associated with certificate programs highlight the demand for highly skilled vocational training in the market. The null effect for associate degree is contrary to the predictions of most established theory. I attributed the non-significant effect to the fact that a large portion of associate degree holders studied only general studies program. Furthermore, many of the previous analyses lacked sufficient personal, institutional, and environmental. Though positive wage returns were not present, associate degree holders do achieve positive status returns in their occupations. I attribute the discrepancies between wage and status returns to differences in objective and the subjective measures of job quality. Though community college students may achieve higher status positions, when compared to people who studied but did not receive a degree, the benefits were small. It is, therefore, important to consider the economic benefits of pursuing sub-baccalaureate credentials in the present political interest in providing free community college education for all.

The null effect for associate degrees does not suggest that all associate degrees are worthless. It is important for community college leaders to develop the curriculums for associate degrees so that they will target open job opportunities. One community college

president told me informally that he is considering stopping the law enforcement program at his school even though it has sufficient enrollment because there are so few law enforcement agencies hiring officers in his community. He wanted to reapply those funds to technical fields where there is a larger demand for associate degree graduates. More higher education administrators should considering job market conditions when developing sub-baccalaureate program options.

Overall, the results show some mixed support for the potential of social closure affecting community college students. There are signs that differences exist in the opportunities and outcomes for students who study at community colleges and the opportunities and outcomes for students who study at colleges and universities. The results were not consistent with social closure in all analyses. Weber's definition of a structured social class can be applied to students in the dual higher education system in the U.S. It is just not clear that social class actions are negatively affecting community college students. I found that starting at a community college negatively affects student expectations and student engagement. I found no effect on wages for associate degree holders, but a positive effect on wages for certificate holders. Many of the differences that do exist between community college and four-year students relate to students' background, academic ability, and social situations. It is not clear, however, whether the differences in student outcomes are a product of a concerted effort by the well-educated to restrict the class mobility of the less-educated. It is possible that the differences in the student body at community colleges and the student body at four-year institutions are just a functional response to differences in institutional access.

Many community college students think of themselves as lower-class outsiders (Alexander, Ellis and Mendoza-Denton 2009, Townsend 2008). This research reinforces there is likely a social class rationale for community college transfer students to not be involved on university and community college campuses. Further, many employers have negative perceptions of associate degree holders (Van Noy and Jacobs 2012) and there is no wage benefit from obtaining such a degree (though there is a benefit for a certificate). There is, therefore, some support to suggest both that community colleges may not be the great equalizer for the disadvantaged. Social closure mechanisms, both internal and external, affect community college students in some ways.

## 7.2. Policy Implications

It is important to look beyond the statistics and analyses in this dissertation to understand how social closure affects community college students and what could be done to overcome the issues surrounding community college student success. Community college students are different in that they are products of local communities and social closure mechanisms hinder their ability to be successful. Community colleges are affordable alternatives to four-year colleges and universities and they provide many courses that are equivalent to classes offered at those colleges and universities.<sup>45</sup> It is important for policy makers and educational leaders to take steps to assist community colleges, so that disadvantaged students can overcome social class differences and be academically and economically successful.

In public secondary school systems, social class and academic ability differences have been overcome through mandated programs such as -the elimination of funding

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<sup>45</sup> Community college course quality is a debatable point that I do not want to engage in this dissertation.

disparities and the redrawing of school district lines (Hochschild 2003). In higher education, it is much harder to make changes in higher education that will erase the social class differences among students, especially in the present political environment, in which states are reducing higher education funding (Mettler 2014). It is, therefore, important for policy makers and administrators in higher education institutions to be committed to helping students who are disadvantaged and to seek creative solutions to help address social class issues.

In order to overcome student uncertainty about what is needed if he or she wants to transfer to a college or university, community colleges should provide more than “open doors.” They should provide clear course pathways for students. The University of California provides an easy to follow plan of the courses community college students should take in order to transfer and not lose credit.<sup>46</sup> Many of the campuses in the system offer admission guarantees for community college students who meet certain course and GPA requirements.<sup>47</sup> Articulation agreements are not new, but some community colleges can have as many as 50 different transfer agreements with colleges and universities.<sup>48</sup> Complicated articulation agreements can hinder students in the ambitions to transfer to four-year institutions. The different programs make students feel unsure about what classes they should take. It is beneficial both for institutions and students that a state community college system and state higher education system have a collaborative relationship that provides clearly understandable pathways for transfer students. Though there is research that suggests articulation agreements do not increase the likelihood that community college students will transfer to four-year institutions (Anderson, Sun and

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<sup>46</sup> Available at: <http://admission.universityofcalifornia.edu/transfer/preparation-paths/index.html>

<sup>47</sup> Available at: <http://admission.universityofcalifornia.edu/transfer/guarantee/index.html>

<sup>48</sup> This is an example: <https://www.ivytech.edu/transfer/>

Alfonso 2006), other research has found that a coordinated transfer policy that is easy to follow, considers reverse student transfers, and incorporates faculty input can improve community college transfer student success (Ignash and Townsend 2001). An academic success emphasis at community colleges can help improve student success especially for students who transfer to four-year institutions (D'Amico et al. 2014).

Though it is wrong to try to manipulate community college students by “cooling out” their ambition, it is not wrong for community college academic advisors to be realistic when counseling students about the commitment they need to have to transfer to a four-year institution and pursue a bachelor’s degree. There are some who suggest that admissions quotas are driving community college admissions counselors to encourage under-performing students to enroll in community colleges by suggesting to them that pipe dreams of bachelor’s degrees are possible (Scherer and Anson 2014). Though this present research does not address the admissions process, the results of this study do suggest that there is an adjustment of student ambition in high school (see Table 4.2) consistent with previous research (Weis, Cipollone and Jenkins 2014). After students go to community colleges, it is important to continue the conversation about what is required for each higher education credential. Unlike some authors (Scherer and Anson 2014), I am not advocating for community colleges to impose admission restrictions that may limit entry for disadvantaged students, but students should receive an honest explanation of the necessary commitment for any credential even if the conversation may affect a] post-secondary institutions’ numbers. Community college educational options should not be used as a means of guiding students into convenient pathways, but they should be used as keys to help people from different backgrounds to excel in their current situation.

For the community college students who do transfer, it is important that the faculty and staff at the new institution work hard to help them succeed. A concerted effort from university students and staff can help community college transfer students overcome any issues relating to transferring to a more socially-involved college or university. Community college transfer students cannot just enroll at a major university, take a full load of courses, and be expected to do just as well as students who started at the institution. Many universities have transfer student services that need to be reinforced by faculty and senior administrators.

SUNY Binghamton's campus offers an office of transfer student services that provides more than a traditional orientation program. The transfer student office at the university sponsors a transfer student organization, organizes a mentoring program for new transfer students, and sponsors a student organization for them and an honor society for those who excel academically. These types of services aid transfer students' integration to a part of the university community and can provide real support to help transfer student persist in their studies.<sup>49</sup> There is research that suggests highly integrative student services for community college transfer students improves student persistence toward bachelor's degree completion (Flaga 2006).

There are, however, many more services that could be beneficial to community college students who transfer to colleges and universities. These include making more classes available at non-traditional times to accommodate people who work during the day or providing on-site, supplemented child care for college and university students with young children. Some students fall short in completing their bachelor's degrees because they need universities that can provide flexible educational options like community

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<sup>49</sup> Available at: <https://www.binghamton.edu/transfer-services/>

colleges do. This is one reason why for-profit universities have been increasingly attractive to people from disadvantaged backgrounds who want to study higher education.

Another example of how policy makers can help community college students comes from the New Jersey Higher Education Student Assistance Authority. New Jersey provides scholarships for in-state, top academic seniors to enroll in state county (community) colleges.<sup>50</sup> Instead of offering all students free community college tuition like what is proposed by President Obama, the program provides scholarships for better academic performers to attend community colleges. At the community colleges, the scholarship students interact and study with academically challenged students, and all students benefit. Substantial research suggests such peer group support can help all students improve academically (Astin 1993, Phinney, Dennis and Chuateco 2005, Tinto 1997).

An expanded version of the New Jersey program provides financial support for the best of those community college graduates who come from disadvantaged backgrounds and want to pursue a bachelor's degree. Scholarships can help defray the costs of pursuing a bachelor's degree. These types of financial incentives for top academic students can have a ripple effect that benefits all students in the community colleges. Instead of providing free community college for all as President Obama (2015a) proposes, providing bachelor's degree scholarships for top community college students can help improve the likelihood that community college students can earn bachelor's degree credentials. Targeted financial assistance can be more cost-effective and productive for the people who want to pursue higher education.

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<sup>50</sup> Available at: <http://www.njstars.net/>

It is important for employers and community college leaders to work together to develop curricula that best meet the needs of the local workforce. When there are targeted programs focused on local labor market opportunities, students are better situated to compete for better, higher-paying jobs. There are many examples of targeted community college programs. In order to help improve the quality of the workforce, the BMW plant in Spartanburg, SC offers college scholarships at Spartanburg Community College and part-time jobs for students studying in fields related to automobile manufacturing (Brooks 2013). When Giti tires planned to open a factory in Chester, SC, they worked with the local community college, York Technical College, to develop a curriculum to train employees even before the factory was built (Staff 2014). In both cases, the community colleges developed programs to provide good jobs for people in the community.

“[E]ducation has emerged as the great divider between persons with good jobs and those with bad jobs” (Kalleberg 2011:57). Community colleges can work to eliminate that divide by providing higher education to the disadvantaged. It is important for business leaders to raise the value of that education by developing distinct opportunities for community college graduates. Targeted programs can help improve the value of community college degrees and have the potential for encouraging student interest in community colleges enrolment. The middle-level labor market can expand by providing relevant opportunities that will be open to workers with appropriate sub-baccalaureate credentials.

The suggestions in this section are just some ways to address the social class issues facing community college students. Many other things can be done to help



community college students and transfers to be successful in their education and employment pursuits. The important point is to keep the issue of community college success at the forefront of the higher education political agenda so that social class issues can be overcome. There is a policy window opening right now and political support for changes, two components for effective policy implementation (Kingdon 1996). It is up to political and education leaders to take chances and develop effective policy measures to help disadvantaged community college students who have ambitions of educational success.

### 7.3. Limitations and Future Research Directions

“Because community colleges are so numerous and varied, they are only poorly captured in generalizations” (McGrath and Spear 1991:15). The community colleges highlighted in Appendix B present a brief snapshot of the variety that exists. Some are in the middle of large cities, while others are located on the outskirts of small towns. Some institutions focus primarily on preparing students to transfer to a four-year institution, while other community colleges focus on terminal degree completion. Therefore, all results and recommendations should be interpreted in the context of an institution’s specific educational aims and its political environment.

Many of the variables that I used for this dissertation were mathematically imputed by the study’s supervisors in order to address missing data and improve the number of cases in the results. With mathematical imputation, there is an assumption that missing responses are similar to the responses that are present. Issues with missing variable imputation have the possibility of affecting the results. With such a wide range of respondents from across the country in the ELS (noted in Table 1.1) and no pattern of

missing responses, there is no reason to believe that there are systematic biases in the responses. It is important, however, to be cautious when interpreting the results of this dissertation.

This research used data from a recent study on respondent wage and education outcomes. It would be useful to do further analyses on this topic based on more specific job characteristics. The data in this research was able to control for just the job families when investigating respondents. Further work should consider comparing the perceptions of graduates working in the same profession but have different educational credentials. In order to examine issues such as social class and closure, it is important to have a more detailed survey of young people and their perspectives. Furthermore, it was obvious that some graduate education wage returns had not fully materialized, so it would be important to examine wage and status returns over a longer time period. Overall, it is important that future researchers continue to investigate the outcomes to community college education, so that policy makers can understand how to effectively assist community college students and overcome any social closure in higher education.

#### 7.4. Conclusion

The very real contribution that the community college has made to the expansion of opportunities for some individuals does not, however, mean that its aggregate effect has been a democratizing one. On the contrary, the two-year institution has accentuated rather than reduced existing patterns of social inequality. (Brint and Karabel 1989:226)

The political efforts of many to emphasize community colleges as economic panaceas for communities may be misplaced. Community colleges are now an engrained part of the post-secondary education market, but the student outcomes are sometimes less than ideal. The point of this dissertation was not to blame community colleges for any kind of social

inequality related education. The reason for writing this dissertation was to examine how some of the conflicting aspects of the community college mission and consider how those issues can be overcome. A new coordinated effort among political and educational leaders needs to be made toward helping community college students to be more successful in their academic endeavors.

Though not always clearly visible, social divisions based on education exist and need to be overcome. Community college students need more assistance and help to address the social disparities that exist between them and four-year institution students. Government funds should not be directed toward providing free education for all to community colleges. The most disadvantaged students are able to go to community college with Pell Grants, Giving a free community college education to everyone would accentuate the social class differences in higher education rather than eliminate them. Financial support should be directed toward community college students succeed. Money should be directed at support and career services to help those who are trying to help themselves.

There is in effect a “social contract” between community colleges and their students. “[S]ocial contracts are a conceptual vehicle that links the individual and her/his schemas to the larger social structure in which she or he is situated and on which she or he acts” (Rubin 2012:328). Community colleges have an intrinsic commitment to provide a better future for their communities' students. A community college education can be a vehicle for individual social mobility. Students would not want to go to community colleges if they thought the education was useless. Policy makers and community college leaders should, therefore, focus their efforts on looking beyond admissions numbers and

developing ways to improve the outcomes for the students, many of whom are from disadvantaged backgrounds. Community colleges are more than just the junior colleges of the past, but they are not a panacea for all of communities' economic woes. For community colleges to evolve in ways that can help the students in the communities that they serve, there need to be more than the political and financial plans for providing community college education.

I am a former community college instructor who has worked with hundreds of students at multiple institutions. I recognized the students' desire to improve themselves. I knew my role as a facilitator of that academic development. I also knew that many of my students faced academic challenges stemming from a multitude of factors, yet they still needed to make the most of their opportunities. Many of the students that I taught considered their education at the community college to be their chance to improve the opportunities for themselves and their families. Therefore, in beginning this dissertation, and throughout my investigations of the outcomes for community college students, I continued to be motivated to find useful and practical outcomes. I knew that the issues facing community colleges could not be appropriately described by esoteric rhetoric about egalitarianism and social class. The issues facing community colleges and their students have practical implications for people, and policy makers all over the country need to understand different types of higher education can affect lives differently.

This dissertation is just one part of the ongoing discussion of community colleges. There are some who suggest that community colleges reinforce social class structure (Karabel 1972). Specifically, some people believe that the "community college is in fact a social defense mechanism that resists changes in the social structure" (Zwerling

1976:xix). Others see community colleges as “democracy’s colleges” (Boggs 2010) and reflections of the communities that they serve (Cohen, Brawer and Kisker 2014, Griffith and Connor 1994). I find evidence that both may be true. Ultimately, community colleges will continue to have diverse and somewhat contradictory missions for the students that they serve. The debate on the role of community colleges in our society will not diminish, especially with the present political emphasis on the use of community colleges as vocational education centers. To improve the future of community colleges around the country, policy makers at the national, state, and institutional level must develop constructive data-centered approaches to address the social and economic influences on and consequences of students attending and graduating from community colleges.

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## APPENDIX A: PELLISSIPPI STATE COMMUNITY COLLEGE MISSION STATEMENT

The mission of Pellissippi State Community College is to serve its community by providing college-level and non-credit courses and learning support instruction using a variety of delivery methods, including distance learning. The College provides support for teaching and learning, training and workforce development, and opportunities for life, civic and cultural enrichment.

### Features of the Mission

To fulfill its mission, Pellissippi State provides students and other citizens of its community specific offerings in the following areas:

- Associate's degrees and certificate programs that lead to employment in computer, engineering, and media technologies; business; and health science.
- Associate's degree programs and courses that prepare students for transfer to baccalaureate-level colleges and universities.
- Learning support instruction and academic and student support services.
- General Educational Development (GED) preparation.
- Training to meet specific needs of businesses, industries and individuals.
- Continuing education programs, seminars and workshops.
- Resources for special grade K-12 programs and events.
- Support for, involvement in, and promotion of civic and cultural projects and events.

Accessed September 30, 2015 from:

<http://www.pstcc.edu/about/mission.php#.VgwboHpViko>

## APPENDIX B: PHOTOS AND BRIEF SUMMARIES OF COMMUNITY COLLEGES FROM ACROSS THE U.S.

This section provides a summary of various community colleges from across the country. The purpose of this section is to highlight some of the basic community and structural characteristics of community college. This section also highlights unique features and programs at the community colleges. The collection of schools in this appendix are quite diverse. There are examples of large, multi-campus urban community colleges. I also have examples of small, rural community colleges as well. There are examples of colleges that offer bachelor's degrees. There is one community college that has merged with a university and there are two that operate as a branch campuses of public universities. Overall, I present pictures of 23 different community colleges from 16 states.

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| SUNY Broome Community College            | 224 |
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| Pennsylvania                             | 255 |
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| York Technical College                   | 262 |
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| Mississippi State Community College      | 270 |
| Texas                                    | 275 |
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## California

College of the Desert  
Palm Desert, California  
Established 1958

College of the Desert is one of the most uniquely named community colleges in the country. It is located near Palm Springs in Riverside County, California. The college began after voters in the Coachella Valley approved in a landslide vote the creation of a two-year college for the region.<sup>51</sup> The college, one of the 112 public community colleges in California, is a major source of transfer students for CSU San Bernardino and has many terminal degrees in fields like public safety, culinary, and horticulture.<sup>52</sup> The campus has a predominantly Hispanic study body. The college competes in 14 athletic fields as a part of the California Community College Athletic Association.<sup>53</sup> One of the popular activities for over 30 years on campus is the Street Fair, a mix of food, entertainment and shopping.<sup>54</sup>

Photos: Marilyn Moffitt (2)

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<sup>51</sup> <http://www.collegeofthedesert.edu/aboutus/Pages/history.aspx>

<sup>52</sup> <http://www.collegeofthedesert.edu/aboutus/Pages/default.aspx>

<sup>53</sup> [http://www.codathletics.com/information/about\\_us](http://www.codathletics.com/information/about_us)

<sup>54</sup> <http://www.palmspringslife.com/Palm-Springs-Life/Desert-Guide/Calendar-of-Events/index.php/name/College-of-the-Desert-Street-Fair-in-Palm-Desert/event/23703/>

College of the Desert



## Florida

Miami Dade College  
Wolfson Campus  
Miami, Florida  
Established 1959

Miami Dade College is the largest higher education institution in Florida. The college operates 10 campuses and centers located around Dade County.<sup>55</sup> The college began offering a few bachelor's degree programs in 2003. Nearly three quarters of the student population is Hispanic, and less than 10% is White. Most students commute to campus using the above-ground, free city rail line. The college offers many cultural events and participates in intercollegiate athletics. The pictures below are from the Wolfson Campus, located in the historic downtown. The college has invested a great deal on new facilities and improvements

Photos: Sam Grubbs (10)

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<sup>55</sup> [http://www.mdc.edu/main/about/\\*](http://www.mdc.edu/main/about/*)



Miami Dade College





Miami Dade College



Miami Dade College





## Miami Dade College



## Georgia

Georgia Perimeter College  
Clarkston Campus  
Clarkston, Georgia  
Established 1964

Georgia Perimeter College (GPC) is a network of five campuses in the suburbs of three counties around Atlanta. The college competes several intercollegiate sports. The Clarkston Campus is located adjacent to the town's high school. The campus is one of the most culturally diverse college campuses in the state with representatives from over 150 countries.<sup>56</sup> The campus houses the DeKalb Symphony Orchestra. On January 6, 2016, the University of Georgia Board of Regents approved the merger of GPC and Georgia State University. GPC has now become Perimeter College, a part of Georgia State University.<sup>57</sup>

Photos: Curt Payne (6)

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<sup>56</sup> <https://perimeter.gsu.edu/about-perimeter-college/our-campuses/clarkston/>

<sup>57</sup> <http://www.collegiannews.com/2016/01/message-from-president-mark-becker/>



Georgia Perimeter College



Georgia Perimeter College





Georgia Perimeter College



## Indiana

Ivy Tech Community College  
North Central Region, South Bend Campus  
South Bend, Indiana  
Established 1963

Ivy Tech is a state-wide system of community colleges. The system is divided into 14 regions, and there are campuses in 31 cities and towns.<sup>58</sup> The South Bend campus consists of two buildings and is located near the center of town, about 3 miles from Notre Dame University and less than 2 miles from Indiana University South Bend.

Photos: Tracy Rehlander (2)

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<sup>58</sup> <https://www.ivytech.edu/>



Ivy Tech



## Louisiana

South Louisiana Community College  
Lafayette, Louisiana  
Established 1997

South Louisiana Community College is relatively new and quite large. In 2012, the college merged with Acadiana Technical College to form the largest community college in Louisiana.<sup>59</sup> The college consists of 8 campuses located in southern Louisiana parishes.

Photos: Bill Thompson (8)

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<sup>59</sup> <http://solacc.edu/about>

South Louisiana Community College





South Louisiana Community College



South Louisiana Community College





South Louisiana Community College



## Michigan

Henry Ford College  
Dearborn, Michigan  
Established 1938

Henry Ford College has approximately 18,000 students and is located just the University of Michigan-Dearborn.<sup>60</sup> It was previously called Fordson Junior college and Dearborn Junior college. It became Henry Ford Community College in 1952 (the administration shortened the name in 2014). The college offers more than 100 different types of associate degrees and one bachelor degree in culinary arts. The college has a Skilled Trades and Apprenticeship Division for students who want to work in skilled trades. The college has a university center where area universities have offices and offer classes for community college students who want to study further.<sup>61</sup> Additionally, the college participates in six intercollegiate sports through the Michigan Community College Athletic Association (including co-ed golf).<sup>62</sup>

Photos: Jennie Wienke (4)

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<sup>60</sup> <https://www.hfcc.edu/about-us/our-history>

<sup>61</sup> <https://www.hfcc.edu/university-center>

<sup>62</sup> <https://athletics.hfcc.edu/>

Henry Ford College





Henry Ford College



Schoolcraft College  
Livonia, Michigan  
Established 1961

Schoolcraft College was originally formed by a vote of local residents.<sup>63</sup> The college, originally called Northwest Wayne County Community College, was renamed to honor the memory of Henry Rowe Schoolcraft, an explorer who helped in the early development of Michigan. The college offers nine areas of study. Additionally, the college participates in four women's sports and four men's sports as part of the Michigan Community College Athletic Association.<sup>64</sup>

Photos: Jennie Wienke (4)

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<sup>63</sup> <http://www.schoolcraft.edu/about-us/welcome/our-history>

<sup>64</sup> <http://www.schoolcraft.edu/campus-life/athletics>



Schoolcraft College





Schoolcraft College



## New Mexico

Central New Mexico Community College  
Albuquerque, New Mexico  
Established 1964

Central New Mexico Community College, formally called Albuquerque Technical Vocational Institute, has 7 campuses and centers around Albuquerque. It is the largest post-secondary institution in New Mexico. The college has been recognized as one of the best models in the country for adult basic and developmental education.<sup>65</sup>

Photos: Marilyn Moffitt (4)

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<sup>65</sup> <http://www.cnm.edu/about>

Central New Mexico Community College





Central New Mexico Community College



New Mexico State University – Alamogordo  
Alamogordo, New Mexico  
Established 1958

New Mexico State University – Alamogordo (NMSU-A) is a community college that is operated as a campus of New Mexico State University. The college campus offers traditional associate's degrees, but it also offers a clear articulation agreement with the main campus of New Mexico State University in Las Cruces. The campus is located 13 miles from Holloman Air Force Base. The Tays Center on campus has an active performing arts program.

Photos: Marilyn Moffitt (8)



New Mexico State University – Alamogordo



New Mexico State University – Alamogordo





New Mexico State University – Alamogordo



New Mexico State University – Alamogordo



## New York

SUNY Broome Community College  
Dickenson, New York  
Established 1946

SUNY Broome is located north of Binghamton, NY. It is part of the State University of New York (SUNY) system that includes public universities, colleges, and community colleges in the state. Many Broome students articulate to SUNY Binghamton University. The school competes in many intercollegiate sports including ice hockey. Members of the community regularly use the ice rink for recreation. Unlike most community colleges, Broome provides residence halls for students. Being an older community college, Broome has many features common to residential colleges.

Photos: Linda Sukarat (8)



## SUNY Broome Community College



## SUNY Broome Community College





# SUNY Broome Community College





## SUNY Broome Community College



a Broome  
residence hall



## North Carolina

Central Piedmont Community College  
Central Campus  
Charlotte, North Carolina  
Established 1963

The North Carolina State Legislature established Central Piedmont Community College (CPCC) through the merger of Mecklenburg College and Central Industrial Education Center.<sup>66</sup> CPCC has seven campuses and two centers in Mecklenburg County. The college operates WTVI, the Public Broadcasting Station for Charlotte. The photos are of the Central Campus located just outside of the downtown area of Charlotte. The architecture on this campus is a mix of 60's and 70's style buildings and modern brick buildings. One of the main facilities on campus used to be Central High School of Charlotte. The Central Campus, also, maintains an active performing arts program.

Photos: Sam Grubbs (9)

Central Piedmont Community College

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<sup>66</sup> <https://www.cpcc.edu/about>

Central Piedmont Community College





Central Piedmont Community College





Central Piedmont Community College





Central Piedmont Community College



Southwestern Community College  
Sylva, North Carolina  
Established 1964

Southwestern Community College is a small community college that supports counties in southwest North Carolina. It was originally developed as part of Asheville-Buncombe Technical College to help local residents get trade skills and take introductory college courses.<sup>67</sup> Many students transfer to Western Carolina University, less than five miles away, after finishing coursework at Southwestern.

Photos: Lynley Hardie (4)

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<sup>67</sup> <https://www.southwesterncc.edu/50-year-celebration>



## Southwestern Community College





Southwestern Community College



Stanly Community College  
Albemarle, North Carolina  
Established 1971

Stanly Community College is located on top of a hill at the edge of Albemarle, North Carolina right beside a National Guard center. Albemarle started as an agriculture and textile manufacturing community about 40 miles northeast from the center of Charlotte. Many of the programs are now focused on new economy fields like technology and health. The first seven pictures are from the main campus. The last picture is of the Crutchfield Education Center for the college, located in Locust close to the border with Cabarrus County.

Photos: Sam Grubbs (8)

Stanly Community College





Stanly Community College





Stanly Community College





Stanly Community College



## Ohio

Cuyahoga Community College  
Eastern Campus  
Highland Hills, OH  
Established 1963

Cuyahoga Community College, commonly called Tri-C, was the first community college in Ohio and remains one of the largest in the state.<sup>68</sup> Tri-C includes eight campuses and centers located around the Cleveland area. The college is one of the top national community colleges for conferring associate's degrees. Tri-C competes in intercollegiate athletics with other area community colleges.

Photos: Marjorie Edguer (8)

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<sup>68</sup> <http://www.tri-c.edu/about/index.html>



Cuyahoga Community College





Cuyahoga Community College



Cuyahoga Community College





## Cuyahoga Community College



Lakeland Community College  
Kirkland, Ohio  
Established 1967

Lakeland Community college is located about 30 minutes outside of Cleveland, Ohio in Lake County. The college was established by a vote of Lake County Resident.<sup>69</sup> The Mooreland Mansion, a national historic site is located on the campus. Lakeland, also, competes in intercollegiate athletics against other area community colleges.

Photos: Marjorie Edguer (8)

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<sup>69</sup> <http://www.lakelandcc.edu/web/about/lakeland>

Lakeland Community College





Lakeland Community College





Lakeland Community College



Lakeland Community College





## Oregon

Portland Community College  
Portland, Oregon  
Established 1961

Portland Community College (PCC) is the largest higher education institution in Oregon with around 90,000 students.<sup>70</sup> It has four campuses in the Portland metropolitan area. PCC started as the adult education program for Portland Public schools. The first two pictures below are from the Sylvania Campus, and the bottom 3 pictures are from the Rock Creek Campus. The college also competes in men's and women's basketball and soccer with the Northwest Athletic Conference.

Photos: Jake and Suzie Grubbs (5)

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<sup>70</sup> <http://www.pcc.edu/about/>

Portland Community College





Portland Community College



## Pennsylvania

Luzerne County Community College  
Nanticoke, Pennsylvania  
Established 1966

Luzerne County Community College's main campus is on the outskirts of Nanticoke, PA. The college also operates 8 other campus and distance learning centers across northeast Pennsylvania.<sup>71</sup> The college competes in 8 intercollegiate sports in the Eastern Pennsylvania Athletic Conference.<sup>72</sup>

Photos: Beth Rubin (4)

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<sup>71</sup> <http://www.luzerne.edu/about/>

<sup>72</sup> <http://www.luzerne.edu/studentlife/athletics/>

## Luzerne County Community College





Luzerne County Community College



## South Carolina

Midlands Technical College  
Beltline Campus  
Columbia, South Carolina  
Established 1974

Midlands Technical College (MTC) started with the merger of three career institutions around Columbia, SC.<sup>73</sup> The college is part of the South Carolina Technical College System and has six campuses in Richland, Lexington, and Fairfield Counties. MTC offers 120 programs of study.<sup>74</sup> The Beltline Campus is just outside of downtown Columbia and about three miles from the University of South Carolina.

Photos: Sam Grubbs (6)

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<sup>73</sup> <http://www4.midlandstech.edu/history.htm>

<sup>74</sup> <http://www.midlandstech.edu/>



Midlands Technical College





Midlands Technical College



Midlands Technical College



York Technical College  
Rock Hill, South Carolina  
Establish 1964

York Technical College (commonly referred to as York Tech) is located 30 minutes from Charlotte and about 3 miles from Winthrop University in Rock Hill, SC. York Tech, as part of the South Carolina Technical College, serves three counties in the upstate of South Carolina and operates one branch campus and two off-campus centers. The college began as a regional education center.<sup>75</sup>

Photos: Sam Grubbs (8)

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<sup>75</sup> <http://www.yorktech.edu/about/>



York Technical College





## York Technical College



York Technical College





York Technical College



University of South Carolina – Lancaster  
Lancaster, South Carolina  
Established 1959

University of South Carolina Lancaster (USCL) began in 1959 as an extension center for the University of South Carolina.<sup>76</sup> USCL is one of four regional colleges in the University of South Carolina system.<sup>77</sup> The campus offers associates degrees focused on students who want to transfer to the University of South Carolina or go through the system's online bachelor's degree completion program (Palmetto College).<sup>78</sup> USCL competes regionally in two men's sports and two women's sports.<sup>79</sup>

Photos: Sam Grubbs (4)

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<sup>76</sup> <http://usclancaster.sc.edu/usclhist.htm>

<sup>77</sup> [http://southcarolina.edu/our\\_campuses/index.php](http://southcarolina.edu/our_campuses/index.php)

<sup>78</sup> <http://bulletin.usclancaster.sc.edu/content.php?catoid=11&navoid=321>

<sup>79</sup> <http://www.usclathletics.com/>



University of South Carolina Lancaster



University of South Carolina Lancaster





## Tennessee

Pellissippi State Community College  
Hardin Valley Campus  
Knoxville, Tennessee  
Established 1974

Pellissippi State Community College has about 10,000 students, and its main campus, Hardin Valley, is located in the suburbs of Knoxville.<sup>80</sup> The college's original name was State Technical Institute at Knoxville or STIK. The name, Pellissippi, comes from the Cherokee word for the Clinch River.<sup>81</sup> The college has an active theater program and offers many technical degree program options.

Photos: Edward Schilling (8)

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<sup>80</sup> <http://www.pstcc.edu/ieap/index.php>

<sup>81</sup> <http://libanswer.pstcc.edu/faq/52640>

Pelissippi State Community College





Pelissippi State Community College





Pelissippi State Community College



Pelissippi State Community College





## Texas

El Centro College  
Dallas, Texas  
Establish 1966

El Centro College is part of the Dallas County Community College District. The name reflects the college's location in the center of town.<sup>82</sup> The college has three campus. Enrolled students can ride the public transportation system for free. The downtown campus of El Centro consists of a historic department store building, an art gallery, and a learning center.<sup>83</sup>

Photos: Mary Turner (6)

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<sup>82</sup> <http://www.elcentrocollege.edu/about>

<sup>83</sup> <http://www.elcentrocollege.edu/about/facilities>

El Centro College







## Virginia

Northern Virginia Community College  
Manassas Campus  
Manassas, Virginia  
Established 1964

Northern Virginia Community College is one of the largest community colleges in the U.S. It has six campuses across northern Virginia in the suburbs of Washington, DC. The school developed preferred transfer relationships with public universities in the state to increase student transfer opportunities.<sup>84</sup> NVCC's most famous faculty member is Dr. Jill Biden, the wife of Vice President Joe Biden.<sup>85</sup> The college participates in seven intercollegiate athletics.<sup>86</sup>

Photos: Melissa Stivaletti (4)

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<sup>84</sup> <https://www.nvcc.edu/about/index.html>

<sup>85</sup> [https://www.nvcc.edu/alumni/\\_files/09079alumninewsletter.pdf](https://www.nvcc.edu/alumni/_files/09079alumninewsletter.pdf)

<sup>86</sup> <http://www.novaathletics.com/landing/index>

Northern Virginia Community College





Northern Virginia Community College



## APPENDIX C: TABLES

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Table 1.1: Percent of respondents by state

|                         | % of study<br>respondents | % of U.S.<br>population* |
|-------------------------|---------------------------|--------------------------|
| Alabama                 | 2.1                       | 1.55                     |
| Alaska                  | 0.1                       | 0.23                     |
| Arizona                 | 1.4                       | 2.07                     |
| Arkansas                | 1.07                      | 0.94                     |
| California              | 11.55                     | 12.07                    |
| Colorado                | 1.07                      | 1.63                     |
| Connecticut             | 1.17                      | 1.16                     |
| Delaware                | 0.27                      | 0.29                     |
| District of<br>Columbia | 0.28                      | 0.20                     |
| Florida                 | 4.7                       | 6.11                     |
| Georgia                 | 3.86                      | 3.14                     |
| Hawaii                  | 0.85                      | 0.44                     |
| Idaho                   | 0.27                      | 0.51                     |
| Illinois                | 5.14                      | 4.15                     |
| Indiana                 | 2.02                      | 2.10                     |
| Iowa                    | 0.58                      | 0.99                     |
| Kansas                  | 1.34                      | 0.92                     |
| Kentucky                | 1.57                      | 1.40                     |
| Louisiana               | 2.35                      | 1.47                     |
| Maine                   | 0.67                      | 0.43                     |
| Maryland                | 1.44                      | 1.87                     |
| Massachusetts           | 1.64                      | 2.12                     |
| Michigan                | 3.41                      | 3.20                     |
| Minnesota               | 2.64                      | 1.72                     |
| Mississippi             | 1.93                      | 0.96                     |
| Missouri                | 1.77                      | 1.94                     |
| Montana                 | 0.56                      | 0.32                     |
| Nebraska                | 0.25                      | 0.59                     |
| Nevada                  | 0.34                      | 0.87                     |
| New Hampshire           | 0.33                      | 0.43                     |
| New Jersey              | 3.26                      | 2.84                     |
| New Mexico              | 0.65                      | 0.66                     |
| New York                | 6.83                      | 6.27                     |
| North Carolina          | 3.24                      | 3.09                     |
| North Dakota            | 0                         | 0.22                     |
| Ohio                    | 4.93                      | 3.73                     |
| Oklahoma                | 0.99                      | 1.21                     |
| Oregon                  | 0.95                      | 1.24                     |

Table continued on next page

Continuation of Table 1.1

|                | % of study<br>respondents | % of U.S.<br>population* |
|----------------|---------------------------|--------------------------|
| Pennsylvania   | 3.95                      | 4.11                     |
| Rhode Island   | 0.28                      | 0.34                     |
| South Carolina | 1.37                      | 1.50                     |
| South Dakota   | 0.36                      | 0.26                     |
| Tennessee      | 1.94                      | 2.06                     |
| Texas          | 6.25                      | 8.15                     |
| Utah           | 0.7                       | 0.89                     |
| Vermont        | 0.19                      | 0.20                     |
| Virginia       | 2.3                       | 2.59                     |
| Washington     | 1.93                      | 2.18                     |
| West Virginia  | 0.65                      | 0.60                     |
| Wisconsin      | 2.44                      | 1.84                     |
| Wyoming        | 0.12                      | 0.18                     |

\*according ASC 2012 5-year estimates

Table 3.1: Respondent's background and family by initial post-secondary institution

|   | 4-yr  | CC    | Total  |
|---|-------|-------|--------|
| <hr/>   |       |       |        |
| % race  |       |       |        |
| White   | 64.26 | 54.06 | 60.49  |
| African Am.   | 11.11 | 12.95 | 11.79  |
| Asian, Pac. Island, Native Am.                            | 11.32 | 10.12 | 10.88  |
| Mixed race  | 4.42  | 4.38  | 4.4    |
| Hispanic  | 8.89  | 18.48 | 15.63  |
| N   | 6,500 | 3,810 | 10,310 |
| <hr/>   |       |       |        |
| % male  | 45.16 | 46.10 | 45.51  |
| N   | 6,510 | 3,830 | 10,350 |
| <hr/>   |       |       |        |
| % family income in 2002 in range                          |       |       |        |
| \$20,000 or less  | 8.17  | 16.94 | 11.42  |
| \$20,001-\$35,000   | 13.00 | 19.95 | 15.56  |
| \$35,001-\$50,000   | 15.97 | 20.52 | 17.66  |
| \$50,001-\$75,000   | 21.94 | 21.79 | 21.88  |
| \$75,001-\$100,000  | 17.29 | 12.31 | 15.44  |
| \$100,001 or more   | 23.52 | 8.48  | 18.04  |
| N   | 6,820 | 4,020 | 10,840 |
| <hr/>   |       |       |        |
| % with two parent families                                | 69.16 | 56.18 | 64.36  |
| N   | 6,510 | 3,830 | 10,330 |
| <hr/>   |       |       |        |
| Family socio-economic status                              | 0.41  | -0.01 | 0.26   |
| N   | 6,290 | 3,470 | 9,760  |
| <hr/>   |       |       |        |
| Respondent's 12th grade avg. hours watching TV per week   | 2.76  | 3.25  | 2.93   |
| N   | 6,180 | 3,340 | 9,520  |
| <hr/>   |       |       |        |
| Respondent's 12th grade avg. hours worked per week at job |       |       |        |
| None  | 27.48 | 25.41 | 26.73  |
| 1-10 hours  | 22.44 | 13.93 | 19.38  |
| 11-20 hours   | 29.15 | 26.86 | 28.32  |
| 21-40 hours   | 19.53 | 31.13 | 23.71  |
| more than 40 hours  | 1.4   | 2.67  | 1.85   |
| N   | 6,520 | 3,680 | 10,190 |
| <hr/>   |       |       |        |

Table 3.2: Respondent's high school performance by initial post-secondary institution

|   | 4-yr  | CC    | Total  |
|---|-------|-------|--------|
| Number of high school activities participated in during senior year                       | 2.76  | 1.70  | 2.38   |
| N   | 6,510 | 3,590 | 10,100 |
| % participated in high school athletics   | 48.28 | 31.83 | 42.47  |
| N   | 6,480 | 3,540 | 10,020 |
| % in English as a Second Language program in high school                                  | 5.44  | 10.31 | 7.23   |
| N   | 6,140 | 3,560 | 6,700  |
| High school grade point average   | 3.14  | 2.54  | 2.92   |
| N   | 6,320 | 3,710 | 10,020 |
| % of respondent's parents took part in high school parent-teacher organization activities | 37.98 | 26.43 | 33.84  |
| N   | 5,530 | 3,080 | 8,620  |

Table 3.3: Parent's background by initial post-secondary institution

|                             | Mother |       |        | Father |       |        |
|-----------------------------|--------|-------|--------|--------|-------|--------|
|                             | 4-yr   | CC    | Total  | 4-yr   | CC    | Total  |
| Highest Level of Education  |        |       |        |        |       |        |
| Did not finish high school  | 6.25   | 14.46 | 9.29   | 6.73   | 15.10 | 9.83   |
| Graduated from high school  | 19.84  | 29.39 | 23.38  | 20.38  | 31.51 | 24.5   |
| Attended 2-yr college       | 10.82  | 14.25 | 12.09  | 8.36   | 11.33 | 9.46   |
| Graduated from 2-yr college | 10.3   | 13.02 | 11.31  | 7.41   | 9.95  | 8.35   |
| Attended 4-yr college       | 11.91  | 10.28 | 11.31  | 10.05  | 9.66  | 9.91   |
| Graduated from college      | 26.28  | 13.31 | 21.48  | 24.75  | 13.90 | 20.73  |
| Completed Master's degree   | 11.54  | 3.79  | 8.67   | 12.64  | 5.84  | 10.12  |
| Completed PhD, MD or other  | 3.06   | 1.49  | 2.48   | 9.67   | 2.72  | 7.1    |
| Parent's Occupation         |        |       |        |        |       |        |
| No job for pay              | 2.74   | 4.26  | 3.3    | 0.74   | 1.31  | 0.95   |
| Clerical                    | 15.93  | 17.18 | 16.39  | 2.18   | 2.22  | 2.2    |
| Craftsperson                | 1.58   | 2.77  | 2.02   | 10.01  | 14.65 | 11.73  |
| Farmer                      | 0.29   | 0.71  | 0.45   | 1.37   | 2.22  | 1.68   |
| Homemaker                   | 3.24   | 4.58  | 3.74   | 1.43   | 2.51  | 1.83   |
| Laborer                     | 2.58   | 5.59  | 3.7    | 6.69   | 12.43 | 8.81   |
| Manager, administrative     | 11.95  | 10.41 | 11.38  | 16.97  | 13.71 | 15.76  |
| Military                    | 0.23   | 0.08  | 0.17   | 1.23   | 1.52  | 1.34   |
| Operative                   | 2.4    | 5.07  | 3.39   | 7.42   | 14.70 | 10.12  |
| Professional A              | 18.73  | 13.02 | 16.62  | 14.46  | 8.48  | 12.25  |
| Professional B              | 5.49   | 3.01  | 4.57   | 10.08  | 2.80  | 7.39   |
| Proprietor                  | 3.09   | 1.54  | 2.52   | 7.13   | 5.18  | 6.41   |
| Protective                  | 0.66   | 0.71  | 0.68   | 3.24   | 3.58  | 3.37   |
| Sales                       | 4.58   | 3.63  | 4.23   | 6.29   | 4.45  | 5.61   |
| School teacher              | 9.48   | 4.94  | 7.8    | 2.03   | 1.10  | 1.68   |
| Service                     | 12.28  | 16.89 | 13.98  | 3.35   | 4.40  | 3.74   |
| Technical                   | 4.75   | 5.62  | 5.07   | 5.38   | 4.74  | 5.14   |
| n                           | 6,510  | 3,830 | 10,330 | 6,510  | 3,820 | 10,330 |

Table 3.4: Respondent's high school environment by initial post-secondary institution

|   | 4-yr     | CC      | Total    |
|---|----------|---------|----------|
| % School control                                  |          |         |          |
| Public  | 67.39    | 85.35   | 74.05    |
| Catholic  | 19.6     | 8.13    | 15.35    |
| Other private                                     | 13.01    | 6.52    | 10.6     |
| n   | 6,820    | 4,020   | 10,840   |
| % School urbanicity                               |          |         |          |
| Urban   | 37.9     | 30.25   | 35.06    |
| Suburban  | 46.77    | 49.58   | 47.81    |
| Rural   | 15.32    | 20.17   | 17.12    |
| n   | 7,280    | 4,020   | 10,840   |
| % Level of crime in students' neighborhood        |          |         |          |
| High  | 2.58     | 3.41    | 2.89     |
| Moderate  | 11.32    | 15.04   | 12.69    |
| Low   | 70.48    | 68.35   | 69.69    |
| Mixed   | 15.62    | 13.20   | 14.72    |
| n   | 5,930    | 3,490   | 9,410    |
| Avg. 2002 % full time equivalent teachers         |          |         |          |
|   | 73.35    | 74.71   | 73.85    |
| n   | 6,600    | 3,870   | 10,470   |
| Avg. 2002 Lowest salary paid to full time teacher |          |         |          |
|   | 28025.69 | 28556.2 | 28221.78 |
| n   | 5,400    | 3,170   | 8,570    |
| Avg. 2002 student enrollment at high school       |          |         |          |
|   | 1217.13  | 1317.67 | 1254.43  |
| n   | 6,740    | 3,970   | 10,710   |
| Avg. 2002 % minority in school                    |          |         |          |
|   | 29.25    | 36.72   | 32.01    |
| n   | 6,670    | 3,910   | 10,570   |
| Avg. 2002 Student-teacher ratio                   |          |         |          |
|   | 16.11    | 17.06   | 16.46    |
| n   | 6,590    | 3,870   | 10,460   |



Table 3.5: Respondent's high school performance  
by initial post-secondary institution

|   | 4-yr  | CC    | Total |
|---|-------|-------|-------|
| <hr/>   |       |       |       |
| % of 2003 graduates who went to a 4-year institution              |       |       |       |
| 24% or less   | 10.01 | 23.78 | 14.62 |
| 25-49%  | 21.08 | 34.84 | 25.69 |
| 50-74%  | 28.97 | 28.81 | 28.92 |
| 75-100%   | 39.94 | 12.57 | 30.77 |
| n   | 5,560 | 2,800 | 8,370 |
| <hr/>   |       |       |       |
| % of 2003 graduates who went to the labor force or military       |       |       |       |
| 24% or less   | 89.71 | 79.50 | 86.27 |
| 25-49%  | 8.46  | 16.18 | 11.06 |
| 50-100%   | 1.82  | 4.32  | 2.66  |
| n   | 5,480 | 2,780 | 8,260 |
| <hr/>   |       |       |       |
| % of 12th graders who participated in Talent Search               |       |       |       |
| none  | 46.92 | 45.91 | 46.55 |
| 10-1%   | 35.2  | 37.30 | 35.94 |
| 24-11%  | 10.36 | 9.82  | 10.24 |
| 25-100%   | 7.52  | 6.97  | 7.34  |
| n   | 5,240 | 2,640 | 7,880 |
| <hr/>   |       |       |       |
| % of 12th graders who participated in Upward Bound                |       |       |       |
| none  | 58    | 54.60 | 57    |
| 10-1%   | 33.34 | 34.95 | 3.88  |
| 24-11%  | 6.15  | 8.24  | 6.84  |
| 25-49%  | 2.51  | 2.21  | 2.41  |
| n   | 5,260 | 2,620 | 7,880 |
| <hr/>   |       |       |       |
| Avg. % of 2001 students who fail competency test on first attempt |       |       |       |
|   | 22.93 | 27.00 | 24.65 |
| n   | 2,730 | 1,990 | 4,720 |
| <hr/>   |       |       |       |

Table 3.6: Respondent's 10th grade residential zip code statistics by initial post-secondary institution\*

|                          | 4-yr      | CC        | Total     |
|--------------------------|-----------|-----------|-----------|
| % Hispanic               | 5.24      | 6.91      | 5.85      |
| % African American       | 12.50     | 13.61     | 12.91     |
| % married families       | 77.08     | 74.74     | 76.22     |
| % owner occupied homes   | 70.07     | 68.45     | 69.47     |
| % with bachelor's        | 17.24     | 13.14     | 15.73     |
| unemployment rate        | 3.32      | 3.87      | 3.53      |
| % in poverty             | 10.53     | 12.98     | 11.43     |
| mean individual earnings | 60,110.22 | 51,770.29 | 57,037.52 |
| mean population          | 26,937.74 | 26,328.71 | 26,713.35 |

\*Based on 2000 U.S. Census estimates

Table 3.7: Respondents' Higher Education Statistics by Initial Post-Secondary Institution

|   | 4-yr   | CC    | Total  |
|---|--------|-------|--------|
| First enrolled in a moderately selective institution                    | 39.34  | 0.00  | 0.25   |
| First enrolled in a highly selective institution                        | 34.50  | 0.00  | 0.22   |
| N   | 6,820  | 4,020 | 10,840 |
| % who accepted PS financial aid   | 70.64  | 44.02 | 78.37  |
| N   | 6,010  | 2,910 | 8,920  |
| Higher ed. GPA  | 2.89   | 2.49  | 2.75   |
| N   | 6,440  | 3,590 | 10,020 |
| % remedial English  | 7.26   | 8.36  | 7.67   |
| % remedial Math   | 8.22   | 9.88  | 8.83   |
| N   | 6,030  | 3,540 | 9,580  |
| Avg. number of 4-year institutions attended                             | 1.55   | 0.44  | 1.14   |
| Avg. number of community colleges attended                              | 0.27   | 1.23  | 0.63   |
| N   | 6,740  | 3,960 | 10,690 |
| Avg. number of 4-year institution credit hours                          | 107.94 | 24.09 | 77.54  |
| Avg. number of community college credit hours                           | 8.85   | 47.59 | 22.89  |
| N   | 6,480  | 3,680 | 10,160 |
| % who could have afforded school in 2004-2005 without working           | 71.42  | 57.14 | 66.2   |
| N   | 3,570  | 2,050 | 5,630  |
| % who delayed post-secondary enrollment                                 | 10.06  | 36.04 | 19.47  |
| N   | 6,680  | 3,790 | 10,470 |
| % who lived at home two years after high school                         | 28.44  | 63.37 | 41.08  |
| N   | 6,420  | 3,640 | 10,070 |
| % who were enrolled full-time in higher ed. two years after high school |        |       |        |
| at 4-year institution   | 75.39  | 6.43  | 50.36  |
| at community college  | 5.14   | 35.07 | 16.00  |
| N   | 6,440  | 3,670 | 10,110 |
| % degree received   |        |       |        |
| Some college  | 26.06  | 50.82 | 35.24  |
| Certificate   | 4.88   | 15.37 | 8.77   |
| Associate's   | 5.53   | 15.82 | 9.35   |
| Bachelor's  | 47.57  | 16.07 | 35.89  |
| Graduate  | 15.97  | 1.92  | 10.76  |
| N   | 6,820  | 4,020 | 10,840 |

Table 3.8: Percentage of respondents first credential by final credential

|              | No Degree | 1st Certificate | 1st Associate | 1st Bachelor's | Total  |
|--------------|-----------|-----------------|---------------|----------------|--------|
| Some college | 100       | 0               | 0             | 0              | 37.62  |
| Certificate  | 0         | 92.41           | 0             | 0              | 11.53  |
| Associate    | 0         | 3.46            | 82.15         | 0              | 9.57   |
| Bachelor's   | 0         | 3.68            | 16.12         | 88.2           | 35.86  |
| Graduate     | 0         | 0.44            | 1.74          | 11.8           | 5.42   |
| n            | 4,090     | 1,360           | 1,210         | 4,150          | 10,800 |

Table 3.9: Respondents' higher education statistics by degree earned

|  | No Degree | Certificate | Associate | Bachelor's | Graduate | Total    |
|--|-----------|-------------|-----------|------------|----------|----------|
| % accepted financial aid                     | 55.17     | 50.60       | 57.61     | 65.25      | 72.84    | 61.09    |
| n  | 2,750     | 840         | 850       | 3,620      | 1,100    | 9,160    |
| Avg. total financial aid amount owed         | 11518.26  | 8750.26     | 13533.55  | 23671.39   | 56372.50 | 20692.85 |
| n  | 2,770     | 830         | 760       | 2,770      | 910      | 8,030    |
| Higher ed. GPA                               | 2.19      | 2.61        | 2.83      | 3.07       | 3.40     | 2.74     |
| n  | 3,510     | 960         | 980       | 3,780      | 1,110    | 10,340   |
| Avg. number of 4-year institutions attended  | 0.77      | 0.50        | 0.84      | 1.46       | 1.93     | 1.10     |
| Avg. number of community colleges attended   | 0.80      | 0.91        | 1.02      | 0.34       | 0.20     | 0.61     |
| n  | 3,990     | 1,200       | 1,050     | 3,880      | 1,150    | 11,270   |
| Avg. 4-year inst. class credit achieved      | 33.89     | 23.95       | 39.16     | 123.63     | 126.65   | 75.53    |
| Avg. com. college class credit achieved      | 20.52     | 32.24       | 61.64     | 16.24      | 8.17     | 22.66    |
| n  | 3,620     | 1,010       | 990       | 3,780      | 1,110    | 10,520   |
| % who delayed post-secondary enrollment      | 37.00     | 39.52       | 24.60     | 5.01       | 2.03     | 21.30    |
| n  | 3,820     | 1,140       | 990       | 3,810      | 1,130    | 10,900   |
| % who were taking CC or 4-YR courses in 2012 | 31.3      | 15.81       | 30.9      | 19.93      | 16.84    | 24.15    |
| n  | 3,810     | 1,150       | 1,000     | 3,800      | 1,150    | 10,900   |

Table 3.10: 2-digit CIP majors of respondents' last degree

|  | certificate | associate | bachelor's |
|--|-------------|-----------|------------|
| Agriculture/operations/related           | 0.23        | 0.49      | 0.96       |
| Natural resources and conservation       | 0           | 0.07      | 0.79       |
| Architecture                             | 0           | 0         | 0.58       |
| Area/ethnic/cultural/gender studies      | 0.34        | 0.21      | 0.56       |
| Communication/journalism                 | 0.34        | 1.11      | 5.92       |
| Communication technology support         | 0.45        | 0.83      | 0.13       |
| Computer/information science/support     | 1.93        | 3.55      | 1.69       |
| Personal & culinary services             | 15          | 2.78      | 0          |
| Education                                | 1.25        | 4.31      | 5.9        |
| Engineering                              | 0.11        | 0.63      | 4.53       |
| Engineering technologies/technicians     | 1.82        | 3.27      | 0.9        |
| Foreign languages/literature/linguistic  | 0.91        | 0.14      | 1.39       |
| Family/consumer/human science            | 0.23        | 0.56      | 1.32       |
| Legal professions & studies              | 1.14        | 0.83      | 0.28       |
| English language & literature/letters    | 0.11        | 0.28      | 3.12       |
| Liberal arts/sci/gen studies/humanities  | 2.27        | 30.46     | 1.41       |
| Biological and biomedical sciences       | 0           | 0.7       | 6.49       |
| Mathematics and statistics               | 0           | 0.21      | 1.24       |
| Military science/leadership/op art       | 0           | 0         | 0.06       |
| Military technologies                    | 0           | 0         | 0.04       |
| Multi/interdisciplinary studies          | 0.34        | 1.25      | 2.2        |
| Parks/recreation/leisure/fitness studies | 0           | 0.35      | 2.67       |
| Philosophy & religious studies           | 0.11        | 0         | 0.73       |
| Theology & religious vocations           | 0.23        | 0         | 0.47       |
| Physical sciences                        | 0.11        | 0.21      | 1.54       |
| Science technologies/technicians         | 0.23        | 0.14      | 0          |
| Psychology                               | 0.11        | 0.56      | 6.39       |
| Security & protective services           | 3.3         | 5.63      | 2.11       |
| Public administration/social service     | 0.45        | 0.7       | 1.62       |
| Social sciences                          | 0.11        | 1.39      | 9.27       |
| Construction trades                      | 2.5         | 0.63      | 0.08       |
| Mechanic/repair technologies/technician  | 10.11       | 3.2       | 0.02       |
| Precision production                     | 1.48        | 0.07      | 0          |
| Transportation & materials moving        | 1.14        | 0.28      | 0.11       |
| Visual & performing arts                 | 1.59        | 4.52      | 6          |
| Health/related clinical sciences         | 47.27       | 17.73     | 7.07       |
| Business/management/marketing/related    | 4.77        | 12.73     | 20.17      |
| History                                  | 0           | 0.21      | 2.24       |
| N  | 880         | 1,440     | 5,320      |

Table 3.11: Respondent's employment statistics by degree earned

|  | Some<br>college | Certificate | Associate | Bachelor's | Graduate  | Total     |
|--|-----------------|-------------|-----------|------------|-----------|-----------|
| % in employment situation                          |                 |             |           |            |           |           |
| Working one FT job<br>(≥35hrs/wk)                  | 51.37           | 54.31       | 55.09     | 64.21      | 67.54     | 58.07     |
| Working a FT job<br>(≥35hrs/wk) and 1+<br>PT jobs  | 9.75            | 12.04       | 10.75     | 10.25      | 9.35      | 10.22     |
| Working 2+ PT jobs<br>totaling 35+                 | 1.88            | 1.67        | 3.3       | 2.32       | 1.87      | 2.14      |
| Working one PT job                                 | 13.69           | 11.96       | 13.3      | 8.74       | 7.56      | 11.15     |
| Working 2+ PT jobs<br>totaling <35 hrs             | 1.49            | 1.28        | 2.74      | 2.19       | 1.95      | 1.87      |
| Unemployed   | 13.83           | 11.96       | 8.96      | 5.46       | 6.03      | 9.53      |
| Out of the labor<br>force                          | 7.99            | 6.78        | 5.85      | 6.83       | 5.69      | 7.03      |
| n  | 4,090           | 1,250       | 1,060     | 3,920      | 1,180     | 11,510    |
| % ever unemployed<br>any time between<br>2009-2012 | 43.47           | 42.78       | 35.47     | 36.68      | 31.39     | 39.10     |
| n  | 4,040           | 1,230       | 1,050     | 3,880      | 1,170     | 11,360    |
| Avg. 2005 annual<br>earnings                       | 7,813.52        | 8,408.59    | 7,905.20  | 4,352.02   | 3,416.30  | 6,202.05  |
| n  | 3,660           | 1,140       | 970       | 3,740      | 1,130     | 10,640    |
| Avg. 2011 annual<br>earnings                       | 21,186.40       | 23,544.62   | 25,142.03 | 33,853.75  | 30,362.93 | 27,115.28 |
| n  | 3,880           | 1,190       | 1,010     | 3,780      | 1,140     | 11,000    |

Table 3.12: Percent respondents in 2-digit O\*NET employment position codes by degree earned

|                            | Some<br>college | Certificate | Associate | Bachelor's | Graduate | Total  |
|----------------------------|-----------------|-------------|-----------|------------|----------|--------|
| Management                 | 8.12            | 5.16        | 7.24      | 11.51      | 6.91     | 8.76   |
| Business and Financial     |                 |             |           |            |          |        |
| Service                    | 3.44            | 2.13        | 2.7       | 10.8       | 8.74     | 6.3    |
| Computers and              |                 |             |           |            |          |        |
| Mathematics                | 2.14            | 1.39        | 2.51      | 5.18       | 2.71     | 3.2    |
| Architecture and           |                 |             |           |            |          |        |
| Engineering                | 0.94            | 0.57        | 1.25      | 4.01       | 3.32     | 2.23   |
| Life, Physical and Social  |                 |             |           |            |          |        |
| Science                    | 0.94            | 0.33        | 0.87      | 3.02       | 5.94     | 2.09   |
| Community and social       |                 |             |           |            |          |        |
| services                   | 1.2             | 1.23        | 1.45      | 3.25       | 7.17     | 2.54   |
| Legal occupations          | 0.59            | 0.33        | 1.16      | 1.33       | 7.95     | 1.62   |
| Education, Training and    |                 |             |           |            |          |        |
| Library                    | 3.49            | 2.87        | 4.73      | 10.7       | 20.37    | 7.74   |
| Arts, design,              |                 |             |           |            |          |        |
| entertainment, sports, and |                 |             |           |            |          |        |
| media                      | 2.32            | 1.72        | 2.7       | 5.99       | 3.67     | 3.69   |
| Healthcare practitioners   |                 |             |           |            |          |        |
| and Technical              | 2.6             | 10.32       | 13.61     | 7.71       | 20.72    | 8.08   |
| Healthcare support         | 4               | 14.41       | 5.6       | 1.95       | 0.96     | 4.27   |
| Protective services        | 3.74            | 2.87        | 2.61      | 2          | 0.44     | 2.61   |
| Food preparation and       |                 |             |           |            |          |        |
| serving related            | 9.73            | 4.59        | 7.05      | 3.7        | 1.05     | 5.95   |
| Building and ground        |                 |             |           |            |          |        |
| cleaning and Maintenance   | 2.34            | 1.56        | 1.16      | 0.49       | 0        | 1.27   |
| Personal care and service  | 4.96            | 9.99        | 4.44      | 3.07       | 1.31     | 4.44   |
| Sales and related          | 11.25           | 6.72        | 8.98      | 7.73       | 1.92     | 8.38   |
| Office and administrative  |                 |             |           |            |          |        |
| support                    | 17.72           | 13.84       | 17.95     | 12.57      | 5.68     | 14.32  |
| Farming, fishing, and      |                 |             |           |            |          |        |
| forestry                   | 0.59            | 0.25        | 0.39      | 0.18       | 0.17     | 0.35   |
| Construction and           |                 |             |           |            |          |        |
| extraction                 | 4.02            | 4.01        | 3.09      | 0.65       | 0.17     | 2.38   |
| Installation, maintenance, |                 |             |           |            |          |        |
| and repair                 | 3.72            | 6.22        | 3.67      | 0.6        | 0        | 2.53   |
| Production                 | 5.91            | 5.08        | 3.96      | 1.28       | 0.26     | 3.46   |
| Transportation and         |                 |             |           |            |          |        |
| material moving            | 4.71            | 4.26        | 2.51      | 1.15       | 0.17     | 2.77   |
| Military specific          | 1.55            | 0.16        | 0.39      | 1.12       | 0.35     | 1.02   |
| n                          | 3,930           | 1,220       | 1,040     | 3,840      | 1,140    | 11,170 |



Table 3.13: Respondent's family situation in 2012 by degree earned

|   | No<br>Degree | Certificate | Associate | Bachelor's | Graduate | Total  |
|---|--------------|-------------|-----------|------------|----------|--------|
| % marital status                        |              |             |           |            |          |        |
| Single, never married                   | 68.96        | 62.12       | 60        | 72.01      | 71.65    | 68.71  |
| Married                                 | 25.4         | 30.61       | 34.1      | 26.45      | 27.16    | 27.31  |
| Divorced                                | 4.18         | 4.93        | 3.62      | 1.26       | 0.68     | 2.85   |
| Separated                               | 1.39         | 2.18        | 2.1       | 0.26       | 0.51     | 1.06   |
| Widowed                                 | 0.07         | 0.16        | 0.19      | 0.03       | 0        | 0.07   |
| n                                       | 4,040        | 1,240       | 1,050     | 3,890      | 1,170    | 11,390 |
| Avg. number children                    |              |             |           |            |          |        |
| n                                       | 4,040        | 1,240       | 1,050     | 3,890      | 1,170    | 11,380 |
| % in residential arrangement            |              |             |           |            |          |        |
| Pays mortgage toward<br>a home          | 21.75        | 28.62       | 36.91     | 27.7       | 24.52    | 26.31  |
| Pays rent                               | 65.67        | 59.76       | 52.62     | 64.73      | 67.56    | 63.75  |
| Has other arrangement                   | 12.59        | 11.62       | 10.47     | 7.57       | 7.92     | 9.94   |
| n                                       | 2,630        | 840         | 730       | 2,890      | 930      | 8,020  |
| % received public<br>assistance in 2011 |              |             |           |            |          |        |
| n                                       | 3,580        | 1,070       | 950       | 3,660      | 1,110    | 10,360 |

Table 3.14: Respondent's 2012 residential zip code statistics\* by degree earned

|                               | No<br>Degree | Certificate | Associate | Bachelor's | Graduate  | Total    |
|-------------------------------|--------------|-------------|-----------|------------|-----------|----------|
| % Hispanics                   | 6.85         | 6.87        | 7.26      | 7.07       | 6.96      | 6.98     |
| % African Americans           | 15.70        | 16.16       | 12.91     | 12.58      | 13.83     | 14.24    |
| % married families            | 70.13        | 70.24       | 72.09     | 73.33      | 73.12     | 71.72    |
| % owner occupied<br>homes     | 61.94        | 63.64       | 65.26     | 59.78      | 58.41     | 61.33    |
| % with bachelor's             | 17.07        | 16.11       | 16.86     | 22.64      | 23.64     | 19.52    |
| unemployment rate             | 10.02        | 10.27       | 9.46      | 8.45       | 8.27      | 9.28     |
| % in poverty                  | 16.60        | 16.44       | 15.20     | 14.25      | 14.30     | 15.41    |
| Median individual<br>earnings | 35,205.39    | 34,804.57   | 35,419    | 41,024.01  | 42,107.45 | 37,876.3 |
| Mean Population               | 4,020        | 1,240       | 1,040     | 3,870      | 1,170     | 11,330   |

\*based on 2012 American Community Survey Estimates

Table 3.15: Percentage of respondents who indicate a reason for not completing post-secondary education by initial post-secondary institution

|  | 4-yr  | CC    | Total |
|--|-------|-------|-------|
| Finished taking desired courses                      | 12.58 | 10.22 | 11.42 |
| Couldn't afford to continue                          | 50.32 | 50.42 | 50.37 |
| Would rather work and make money than continue to go | 44.60 | 48.75 | 46.64 |
| Change in family status                              | 31.99 | 39.20 | 35.54 |
| Personal problems, injury, or illness                | 24.72 | 22.11 | 23.43 |
| Conflicts with demands at home                       | 24.29 | 28.56 | 26.39 |
| Difficulty completing requirements                   | 14.62 | 14.32 | 14.47 |
| Classes not available                                | 15.00 | 19.97 | 17.44 |
| Job or military considerations                       | 17.54 | 18.05 | 17.79 |
| N  | 1,240 | 1,200 | 2,440 |

Table 3.16: Perception of employment by degree completed

|   | No Degree | Certificate | Associate | Bachelor's | Graduate | Total      |
|---|-----------|-------------|-----------|------------|----------|------------|
| % responding relationship between job and field of study                    |           |             |           |            |          |            |
| Closely related   | 18.68     | 39.81       | 41.56     | 42.31      | 68.64    | 36.74      |
| Somewhat related  | 19.34     | 18.86       | 18.59     | 28.13      | 19.55    | 22.37      |
| Not related   | 61.99     | 41.33       | 39.85     | 29.56      | 11.82    | 40.88      |
| % responding that current job would be difficult without college coursework |           |             |           |            |          |            |
|   | 14.46     | 38.37       | 38.2      | 47.47      | 71.31    | 36.98      |
| % responding that associate's degree required for job                       |           |             |           |            |          |            |
|   | 5.59      | 7.12        | 32.25     | 18.69      | 14.35    | 13.71      |
| % responding that bachelor's degree required for job                        |           |             |           |            |          |            |
|   | 8.23      | 6.35        | 5.92      | 58.24      | 77.25    | 33.07      |
| Total   | 3440-3490 | 1020-1060   | 900-940   | 3360-3640  | 960-1100 | 9660-10220 |

Table 3-17: Ratings of aspects of respondent's current job by degree attained

|                                 | No Degree | Certificate |    | Associate |    | Bachelor's |    | Graduate |    | Total       |
|---------------------------------|-----------|-------------|----|-----------|----|------------|----|----------|----|-------------|
| Job security                    | 3.63      | 3.86        | ** | 3.86      | ** | 3.74       | ** | 3.67     |    | 3.72        |
| Opportunity to learn new things | 3.74      | 4.05        | ** | 3.90      | ** | 4.06       | ** | 4.28     | ** | 3.96        |
| High earnings                   | 2.96      | 3.24        | ** | 3.09      | *  | 2.91       |    | 2.89     |    | 2.98        |
| New challenges                  | 3.50      | 3.82        | ** | 3.71      | ** | 3.83       | ** | 4.09     | ** | 3.73        |
| Time for leisure                | 3.19      | 3.25        |    | 3.33      | *  | 3.34       | ** | 3.29     | *  | 3.27        |
| Useful for society              | 3.08      | 3.46        | ** | 3.36      | ** | 3.41       | ** | 3.94     | ** | 3.35        |
| Work-family balance             | 3.45      | 3.60        | ** | 3.60      | ** | 3.53       | ** | 3.52     |    | 3.51        |
| Total                           | 3480-3500 | 1060-1070   |    | 940       |    | 3610-3630  |    | 1090     |    | 10180-10220 |

\* p < 0.05, \*\* p<0.01

Table 3.18: Percentage of respondents who indicate a perceived employment barrier by degree attained

|                                     | No Degree | Certificate | Associate | Bachelor's | Graduate  | Total       |
|-------------------------------------|-----------|-------------|-----------|------------|-----------|-------------|
| Not having the required credential  | 39.63     | 28.76       | 33.44     | 22.83      | 21.51     | 30.06       |
| Not having high enough grades       | 11.07     | 5.83        | 5.37      | 7.85       | 5.66      | 8.29        |
| Being considered overqualified      | 11.03     | 12.1        | 13.38     | 19.07      | 22.77     | 15.45       |
| Lack of openings in chosen field    | 25.59     | 29.07       | 32.28     | 45.54      | 43.4      | 35.51       |
| Lack of social connections/contacts | 20.72     | 17.31       | 18.53     | 28.53      | 24.66     | 23.34       |
| n                                   | 3570-3580 | 1070-1080   | 950       | 3660-3670  | 1110-1120 | 10370-10390 |

Table 4.1: Variable coding sources and scheme

| Variables                                       | Coding scheme   |
|---|---|
| <i>Dependent variable</i>                       |   |
| Meeting or exceeding the educational aspiration | 1 = the respondent's education level meets or exceeds what he/she indicated in 12th grade would be what he/she expected to achieve.<br>0 = the respondent's education level is lower than what he/she indicated in 12th grade would be what he/she expected to achieve. |
| <i>Independent variables</i>                    |   |
| Started at a community college                  | 1 = the respondent started higher education at a community college<br>0 = the respondent started higher education at a 4-year institution   |
| Attended a 4-year institution                   | 1 = attended a 4-year institution<br>0 = never attended a 4-year institution  |
| Community college class credit                  | number of credit hours earned at a community college  |
| 4-year institution class credit                 | number of credit hours earned at a college or university  |
| <i>Control variables</i>                        |   |
| Gender  | 1 = man<br>0 = woman  |
| Race  | 1 = Black or African American<br>1 = Asian, Pacific Islander, or Native American<br>1 = Hispanic, race specified or not<br>1 = Mixed race<br>(The reference group is White)   |
| High school work hours                          | a 9 value categorical variable with 0 indicating no work, 1-8 indicates 5 hour intervals of work per-week leading up to 40, 9 indicates more than 40 hours of work per-week   |
| Number of high school activities                | The number of school-sponsored activities that the respondent participated in during 2003-04. The values go up to 9.  |
| High school GPA                                 | Respondent's high school Grade Point Average on a 4.0 scale   |
| Family socio-economic status                    | Values between -2 and 2, composite value based on parent's educational level, occupational status, and income   |
| Two parent family                               | 1 = respondent's family has 2 parents<br>0 = respondent's family does not have 2 parents  |
| Living at home in 2006                          | 1 = respondent was living at home 2 years after high school<br>0 = respondent was not living at home 2 years after high school  |

Continuation of Table 4.1

| Variables                         | Coding scheme  |
|-----------------------------------|--|
| Received higher ed. financial aid | 1 = respondent received financial aid from first post-secondary inst.<br>0 = respondent did not received financial aid from first post-secondary inst.   |
| Higher ed GPA                     | Respondent's cumulative higher education Grade Point Average on a 4.0 scale  |
| Institutional selectivity         | 1 = First institution is highly selective by 2005 Carnegie classification<br>1 = First institution is moderately selective by 2005 Carnegie classification<br>(The reference group is nonselective institutions) |
| Public Institution                | 1 = respondent's first institution attended was public<br>0 = respondent's first institution attended was private  |
| Institutions                      | The number of higher education institutions that a student attended.   |

Table 4.2: Respondents' educational ambition

|  | 10th grade |       |        | 12th grade |       |        |
|--|------------|-------|--------|------------|-------|--------|
|  | 4-yr       | CC    | Total  | 4-yr       | CC    | Total  |
| Less than high school                    | 0.18       | 0.71  | 0.37   | 0.08       | 0.15  | 0.1    |
| GED or equivalent                        | -          | -     | -      | 0.13       | 0.87  | 0.38   |
| High school graduation                   | 1.46       | 6.46  | 3.24   | 0.69       | 3.94  | 1.82   |
| Attend or complete 2-year college/school | 1.99       | 9.12  | 4.52   | 3.22       | 25.06 | 10.77  |
| Attend college, 4-year degree incomplete | 1.87       | 5.28  | 3.08   | 1.89       | 5.46  | 3.13   |
| Graduate from college                    | 36.99      | 44.07 | 39.5   | 37.05      | 37.71 | 37.28  |
| Obtain Master's degree or equivalent     | 30.59      | 19.01 | 26.48  | 34.47      | 17.15 | 28.48  |
| Obtain PhD, MD, or other advanced degree | 26.92      | 15.35 | 22.8   | 22.47      | 9.67  | 18.04  |
| exceeded expectations                    | 7.66       | 8.13  | 7.83   | 6.02       | 7.11  | 6.42   |
| met expectations                         | 25.05      | 19.48 | 22.99  | 29.74      | 33.28 | 31     |
| did not meet expectations                | 61.84      | 61.22 | 61.61  | 60.71      | 48.92 | 56.42  |
| original expectations were "don't know"  | 5.45       | 11.17 | 7.56   | 3.53       | 10.68 | 6.13   |
| N  | 6,500      | 3,810 | 10,310 | 6,570      | 3,750 | 10,330 |

Table 4.3: Logistic regression models for students who expected to receive a bachelor's degree

|  | CC beginning<br>model | Credit model<br>+ Assoc. Deg. |       |
|--|-----------------------|-------------------------------|-------|
| Male   | 0.36                  | 0.26                          | *     |
| Black  | 0.31                  | 0.16                          |       |
| Asian/Pacific/Native American                    | 0.27                  | -0.03                         |       |
| Mixed race                                       | 0.04                  | -0.11                         |       |
| Hispanic   | 0.00                  | -0.22                         |       |
| High School Work Hours                           | -0.05                 | *                             | -0.01 |
| # of High School Activities                      | 0.02                  |                               | -0.01 |
| High School GPA                                  | 0.36                  | **                            | 0.20  |
| Family SES                                       | 0.46                  | **                            | 0.28  |
| Two Parents                                      | 0.14                  |                               | 0.03  |
| Living at home in 2006                           | -0.52                 | **                            | -0.10 |
| Received Financial Aid                           | -0.06                 |                               | -0.20 |
| Higher Education GPA                             | 1.49                  | **                            | 1.23  |
| Highly Selective Institution                     | 0.52                  | **                            | -0.13 |
| Moderately Selective Inst.                       | 0.46                  | **                            | -0.13 |
| Public Institution                               | 0.08                  |                               | -0.21 |
| Number of institutions attended                  | -0.13                 | **                            | -0.34 |
| Started higher education at<br>community college | -0.62                 | **                            |       |
| CC Credit Hours                                  |                       | 0.02                          | **    |
| 4YR Credit Hours                                 |                       | 0.03                          | **    |
| Received Associate's Degree                      |                       | -1.21                         | **    |
| Constant   | -5.04                 | **                            | -6.44 |
| LR Chi Square                                    | 999.942               | 1689.744                      |       |
| Nagelkerke R <sup>2</sup>                        | 0.435                 | 0.663                         |       |
| AIC  | 2546.761              | 1756.662                      |       |
| N  | 2540                  | 2460                          |       |

\* p &lt; 0.05, \*\* p&lt;0.01

Table 5.1: Variable coding sources and scheme

| Variables                         | Coding scheme  |
|-----------------------------------|--|
| <i>Dependent variable</i>         |  |
| Bachelor's degree attained        | 1 = the respondent achieved a bachelor's degree by 8 years after high school<br>0 = the respondent did not achieve a bachelor's degree by 8 years after high school  |
| <i>Independent variables</i>      |  |
| Started at a community college    | 1 = the respondent started higher education at a community college<br>0 = the respondent started higher education at a 4-year institution  |
| <i>Mediating variable</i>         |  |
| High-impact activities            | The respondent's number of high-impact educational activities that the he/she participated in while studying higher education  |
| <i>Control variables</i>          |  |
| Gender                            | 1 = man<br>0 = woman   |
| Race                              | 1 = Black or African American<br>1 = Asian, Pacific Islander, or Native American<br>1 = Hispanic, race specified or not<br>1 = Mixed race<br>(The reference group is White)                                      |
| Family socio-economic status      | values between -2 and 2, composite value based on parent's educational level, occupational status, and income  |
| Living at home in 2006            | 1 = respondent was living at home 2 years after high school<br>0 = respondent was not living at home 2 years after high school   |
| Natural log of 2005 wages         | The natural log of the respondent's wages in 2005, the second year out of high school  |
| Received higher ed. financial aid | 1 = respondent received financial aid from first post-secondary inst.<br>0 = respondent did not received financial aid from first post-secondary inst.   |
| Institutional selectivity         | 1 = Last institution was highly selective by 2005 Carnegie classification<br>1 = Last institution was moderately selective by 2005 Carnegie classification<br>(The reference group is nonselective institutions) |
| Public last institution           | 1 = respondent's last institution attended was public<br>0 = respondent's last institution attended was private  |
| Higher ed GPA                     | Respondent's cumulative higher education Grade Point Average on a 4.0 scale  |
| Number of institutions attended   | The number of higher education institutions that a student attended  |



Table 5.2: Percent of respondents who completed the respective activity & avg. activities per group

|  | Internship/ co-op/ field experience | Research project with faculty | Study abroad | Community-based project | Culminating senior experience | Mentoring | avg. number of activities |
|--|-------------------------------------|-------------------------------|--------------|-------------------------|-------------------------------|-----------|---------------------------|
| Final degree earned                      |                                     |                               |              |                         |                               |           |                           |
| No Degree                                | 18%                                 | 7%                            | 4%           | 9%                      | 7%                            | 8%        | 0.54                      |
| Certificate                              | 49%                                 | 10%                           | 5%           | 14%                     | 13%                           | 17%       | 1.07                      |
| Associate's                              | 44%                                 | 10%                           | 4%           | 16%                     | 16%                           | 13%       | 1.02                      |
| Bachelor's                               | 60%                                 | 17%                           | 17%          | 25%                     | 45%                           | 21%       | 1.84                      |
| Graduate                                 | 70%                                 | 29%                           | 22%          | 35%                     | 50%                           | 30%       | 2.36                      |
| Where r started post-secondary education |                                     |                               |              |                         |                               |           |                           |
| Started at 4-yr                          | 52%                                 | 17%                           | 15%          | 23%                     | 36%                           | 20%       | 1.62                      |
| Started at CC                            | 31%                                 | 8%                            | 4%           | 12%                     | 13%                           | 10%       | 0.77                      |
| Total                                    | 44%                                 | 13%                           | 11%          | 19%                     | 27%                           | 16%       | 1.29                      |

n = 10400-10460

Table 5.3: Percent degree completers by respondent's initial post-secondary institution

|              | 4-year institution starters | All community college (CC) starters | CC starters who did not go to 4-yr inst.* | CC starters who did go to 4-yr inst.* | Total  |
|--------------|-----------------------------|-------------------------------------|---|---------------------------------------|--------|
| Some college | 26.06                       | 50.82                               | 63.86                                     | 28.12                                 | 35.24  |
| Certificate  | 4.88                        | 15.37                               | 20.01                                     | 6.65                                  | 8.77   |
| Associate's  | 5.53                        | 15.82                               | 15.94                                     | 15.93                                 | 9.35   |
| Bachelor's   | 47.57                       | 16.07                               | 0.20                                      | 44.11                                 | 35.89  |
| Graduate     | 15.97                       | 1.92                                | 0.00                                      | 5.19                                  | 10.76  |
| N            | 6,820                       | 4,020                               | 2,530                                     | 1,440                                 | 10,840 |

\* sub-categories of community college starters based on whether or not the respondent attended a college or university

Table 5.4: Community College Effect on Bachelor's Degree Mediated by Participation in High-Impact Educational Activities

|  | Path C, Total effect<br>of CC on Bachelor's<br>Degree |                           |       | Path A, effect of CC<br>on Activities         |                           |       | Paths B and C',<br>effect of CC and<br>Activities on<br>Bachelor's Degree |                           |       |
|--|---|---------------------------|-------|---|---------------------------|-------|---|---------------------------|-------|
|  | Graduate with a<br>Bachelor's Degree                  | Robust Standard<br>Errors |       | # of High-Impact<br>Educational<br>Activities | Robust Standard<br>Errors |       | Graduate with a<br>Bachelor's Degree                                      | Robust Standard<br>Errors |       |
| Started at<br>community college            | -0.111  | **                        | 0.011 | -0.121  | **                        | 0.010 | -0.076  | **                        | 0.011 |
| # of High-Impact<br>Educational Activities |   |                           |       |   |                           |       | 0.353   | **                        | 0.010 |
| Constant                                   | 1.303   | **                        | 0.015 | 1.097   | **                        | 0.011 | 0.954   | **                        | 0.020 |

\*  $p < 0.05$ , \*\*  $p < 0.01$

Table 5.5: Community College Effect on Bachelor's Degree Mediated by Participation in High-Impact Educational Activities with Control Variables

|  | Path C, Total effect<br>of CC on Bachelor's<br>Degree |                        |       | Path A, effect of CC<br>on Activities      |                        |       | Paths B and C',<br>effect of CC and<br>Activities on<br>Bachelor's Degree |                        |       |
|--|---|------------------------|-------|--|------------------------|-------|---|------------------------|-------|
|  | Graduate with a<br>Bachelor's Degree                  | Robust Standard Errors |       | # of High-Impact<br>Educational Activities | Robust Standard Errors |       | Graduate with a<br>Bachelor's Degree                                      | Robust Standard Errors |       |
| Male                                       | 0.018   | 0.011                  |       | -0.060                                     | **                     | 0.013 | 0.034   | **                     | 0.011 |
| Black                                      | 0.013   | 0.012                  |       | 0.030                                      | *                      | 0.013 | 0.009   |                        | 0.012 |
| Asian/Pacific/Native<br>American           | 0.032   | **                     | 0.011 | 0.003                                      |                        | 0.013 | 0.029   | **                     | 0.012 |
| Mixed race                                 | 0.008   |                        | 0.011 | 0.020                                      |                        | 0.013 | 0.009   |                        | 0.011 |
| Hispanic                                   | 0.016   |                        | 0.011 | 0.014                                      |                        | 0.013 | 0.015   |                        | 0.012 |
| Family SES                                 | 0.061   | **                     | 0.012 | 0.073                                      | **                     | 0.014 | 0.051   | **                     | 0.013 |
| Living at home in 2006                     | -0.070  | **                     | 0.013 | -0.091                                     | **                     | 0.013 | -0.056  | **                     | 0.013 |
| natural log of wages in 2005               | -0.054  | **                     | 0.013 | -0.017                                     |                        | 0.013 | -0.055  | **                     | 0.012 |
| Received Financial Aid                     | -0.002  |                        | 0.013 | 0.045                                      | **                     | 0.013 | -0.008  |                        | 0.012 |
| Highly Selective Last Inst.                | 0.224   | **                     | 0.016 | 0.117                                      | **                     | 0.016 | 0.210   | **                     | 0.014 |
| Moderately Sel. Last Inst.                 | 0.224   | **                     | 0.015 | 0.046                                      | **                     | 0.014 | 0.213   | **                     | 0.014 |
| Public Last Institution                    | -0.013  |                        | 0.013 | -0.062                                     | **                     | 0.013 | -0.001  |                        | 0.011 |
| Higher Education GPA                       | 0.395   | **                     | 0.012 | 0.303                                      | **                     | 0.012 | 0.347   | **                     | 0.012 |
| Number of institutions<br>attended         | -0.096  | **                     | 0.014 | 0.019                                      |                        | 0.014 | -0.095  | **                     | 0.013 |
| Started at community<br>college            | -0.003  |                        | 0.013 | -0.042                                     | **                     | 0.013 | 0.002   |                        | 0.013 |
| # of High-Impact<br>Educational Activities |   |                        |       |  |                        |       | 0.138   | **                     | 0.013 |
| Constant                                   | 0.100   |                        | 0.111 | -0.062                                     |                        | 0.126 | 0.138   |                        | 0.115 |

\* p &lt; 0.05, \*\* p &lt; 0.01

Table 6.1: Variable coding sources and scheme

| Variables                                    | Coding scheme   |
|--|---|
| <i>Dependent variables</i>                   |   |
| Natural log of 2011 wages                    | The natural logarithm of 2011 respondent's annual wages   |
| Job prestige                                 | NORC occupational prestige scores for job family  |
| <i>Independent variables</i>                 |   |
| Highest degree attained                      | 1 = Certificate<br>1 = Associate's<br>1 = Bachelor's<br>1 = Graduate<br>(The reference group is some post-secondary education)  |
| <i>Control variables</i>                     |   |
| Gender                                       | 1 = man<br>0 = woman  |
| Race   | 1 = Black or African American<br>1 = Asian, Pacific Islander, or Native American<br>1 = Mixed race<br>1 = Hispanic, race specified or not<br>(The reference group is White) |
| Family socio-economic status                 | composite value between -2 and 2 based on parent's educational level, occupational status, and income   |
| Natural log of 2000 mean income for zip code | Natural log of mean family income for people within the respondent's residential zip code in 2000 U.S. Census   |
| Institutional selectivity                    | 1 = Last institution was highly selective by 2005 Carnegie classification<br>0 = Last institution was not highly selective by 2005 Carnegie classification                  |
| Public last institution                      | 1 = respondent's last institution attended was public<br>0 = respondent's last institution attended was private   |
| Higher ed GPA                                | Respondent's cumulative higher education Grade Point Average on a 4.0 scale   |
| Received higher ed. financial aid            | 1 = respondent received financial aid from first post-secondary inst.<br>0 = respondent did not received financial aid from first post-secondary inst.                      |
| Attended a 4-yr institution                  | 1 = respondent attended a 4-year post-secondary institution<br>0 = respondent did not attend a 4-year post-secondary inst.  |

Continuation of Table 6.1

| Variables                                   | Coding scheme   |
|---|---|
| Number of institutions attended             | The number of higher education institutions that the student attended   |
| Received public assistance in the past year | 1 = received public assistance between 2009 and 2012<br>0 = did not receive public assistance between 2009 and 2012 |
| presently works fulltime                    | 1 = presently working fulltime at a single job<br>0 = presently not working at a fulltime job at a single job       |
| single                                      | 1 = presently single<br>0 = presently married   |

Table 6.2: Respondents' average wages and job prestige by degree earned

|              | Avg. 2011 annual earnings | Avg. job prestige score | number of respondents |
|--------------|---------------------------|-------------------------|-----------------------|
| no diploma   | 14,249.15                 | 36.24                   | 340-320               |
| diploma      | 20,405.44                 | 37.77                   | 1300-1310             |
| Some college | 21,186.40                 | 41.10                   | 3880-3930             |
| Certificate  | 23,544.62                 | 42.59                   | 1190-1220             |
| Associate's  | 25,142.03                 | 44.75                   | 1010-1040             |
| Bachelor's   | 33,853.75                 | 48.93                   | 3780-3840             |
| Graduate     | 30,362.93                 | 56.06                   | 1140                  |
| Total        | 26,082.53                 | 44.77                   | 12640-12800           |

Table 6.3: Effects of degree earned on wages and job prestige for higher education attendees

|   | natural log of wages OLS<br>regression |    | Robust Standard Errors |  | ln wages reg. w/ job<br>fixed effects |    | Robust Standard Errors |  | job prestige regression |    | Robust Standard Errors |  |
|---|--|----|------------------------|--|---------------------------------------|----|------------------------|--|-------------------------|----|------------------------|--|
| Certificate earner                              | 0.15                                   | *  | 0.06                   |  | 0.12                                  | *  | 0.05                   |  | 1.23                    | *  | 0.55                   |  |
| Associate's earner                              | 0.05                                   |    | 0.05                   |  | 0.03                                  |    | 0.04                   |  | 1.75                    | ** | 0.54                   |  |
| Bachelor's earner                               | 0.18                                   | ** | 0.04                   |  | 0.15                                  | ** | 0.03                   |  | 3.08                    | ** | 0.40                   |  |
| Graduate deg. earners                           | -0.02                                  |    | 0.05                   |  | -0.02                                 |    | 0.07                   |  | 9.12                    | ** | 0.50                   |  |
| Male  | 0.20                                   | *  | 0.02                   |  | 0.15                                  | ** | 0.04                   |  | -0.69                   | *  | 0.27                   |  |
| Black   | -0.03                                  |    | 0.04                   |  | -0.04                                 |    | 0.04                   |  | 0.81                    |    | 0.46                   |  |
| Asian/Pacific/Native<br>American                | -0.12                                  |    | 0.05                   |  | -0.13                                 | *  | 0.06                   |  | 0.83                    |    | 0.45                   |  |
| Mixed race                                      | 0.09                                   |    | 0.05                   |  | 0.06                                  |    | 0.05                   |  | -0.12                   |    | 0.66                   |  |
| Hispanic  | -0.08                                  |    | 0.04                   |  | -0.07                                 |    | 0.05                   |  | -0.64                   |    | 0.45                   |  |
| Family SES                                      | 0.01                                   |    | 0.02                   |  | 0.01                                  |    | 0.02                   |  | 0.34                    |    | 0.22                   |  |
| Natural log of 2000 mean<br>income for zip code | 0.12                                   | ** | 0.04                   |  | 0.11                                  | ** | 0.04                   |  | 0.59                    |    | 0.45                   |  |
| Highly Selective Last Inst.                     | 0.14                                   | ** | 0.03                   |  | 0.11                                  | ** | 0.03                   |  | 1.46                    | ** | 0.35                   |  |
| Public Last Institution                         | -0.02                                  |    | 0.03                   |  | -0.04                                 |    | 0.02                   |  | 0.11                    |    | 0.29                   |  |
| Higher Education GPA                            | 0.10                                   | ** | 0.02                   |  | 0.09                                  | ** | 0.02                   |  | 2.15                    | ** | 0.20                   |  |
| Received financial aid                          | 0.07                                   | *  | 0.03                   |  | 0.06                                  | *  | 0.02                   |  | 0.59                    | *  | 0.28                   |  |
| Attended a 4-yr inst.                           | 0.01                                   |    | 0.04                   |  | 0.00                                  |    | 0.06                   |  | 1.61                    | ** | 0.43                   |  |
| Number of PS institutions<br>attended           | -0.06                                  | ** | 0.01                   |  | -0.06                                 | ** | 0.01                   |  | 0.38                    | *  | 0.16                   |  |
| Received public assistance<br>in past           | -0.52                                  | ** | 0.05                   |  | -0.47                                 | ** | 0.05                   |  | -3.31                   | ** | 0.46                   |  |
| presently works fulltime                        | 0.61                                   | ** | 0.03                   |  | 0.54                                  | ** | 0.05                   |  | 2.16                    | ** | 0.28                   |  |
| single  | -0.21                                  | ** | 0.03                   |  | -0.19                                 | ** | 0.03                   |  | -1.54                   | ** | 0.29                   |  |
| constant  | 8.08                                   | ** | 0.45                   |  | 8.29                                  | ** | 0.42                   |  | 29.30                   | ** | 5.00                   |  |
|   | n                                      |    | 6100                   |  | n                                     |    | 6080                   |  | n                       |    | 6740                   |  |
|   | F                                      |    |                        |  | average                               |    |                        |  |                         |    |                        |  |
|   | stat                                   |    | 60.26                  |  | group                                 |    | 264.1                  |  | F stat                  |    | 99.55                  |  |
|   | r <sup>2</sup>                         |    | 0.193                  |  | size                                  |    |                        |  | r <sup>2</sup>          |    |                        |  |
|   |  |    |                        |  | F stat                                |    | 154.64                 |  |                         |    | 0.188                  |  |
|   |  |    |                        |  | r <sup>2</sup>                        |    | 0.229                  |  |                         |    |                        |  |
|   |  |    |                        |  | rho                                   |    | 0.069                  |  |                         |    |                        |  |

\* p &lt; 0.05, \*\* p &lt; 0.01

## APPENDIX D: FIGURES

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Figure 2.1: Photo of sign at Central Piedmont Community College that shows the college's effort to be seen as a low-cost higher education alternative.

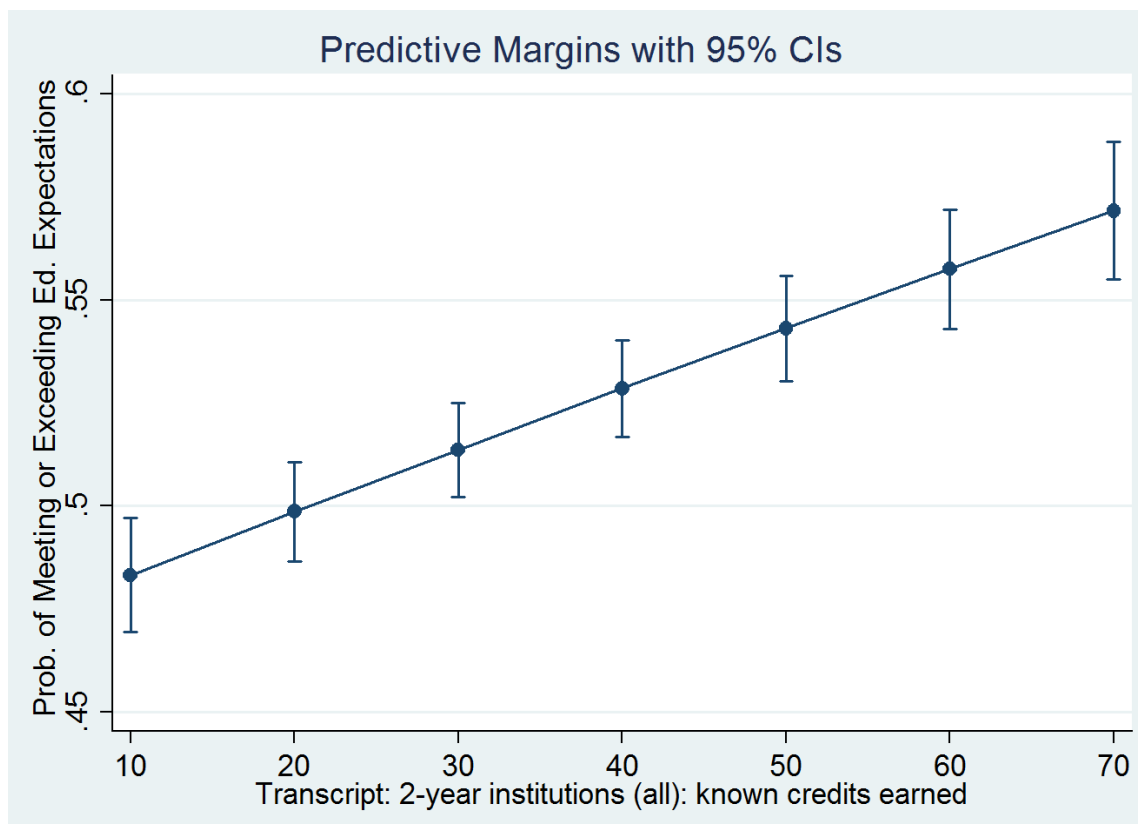


Figure 3.1: Marginal effect of community college class credit on the likelihood of receiving a bachelor's degree

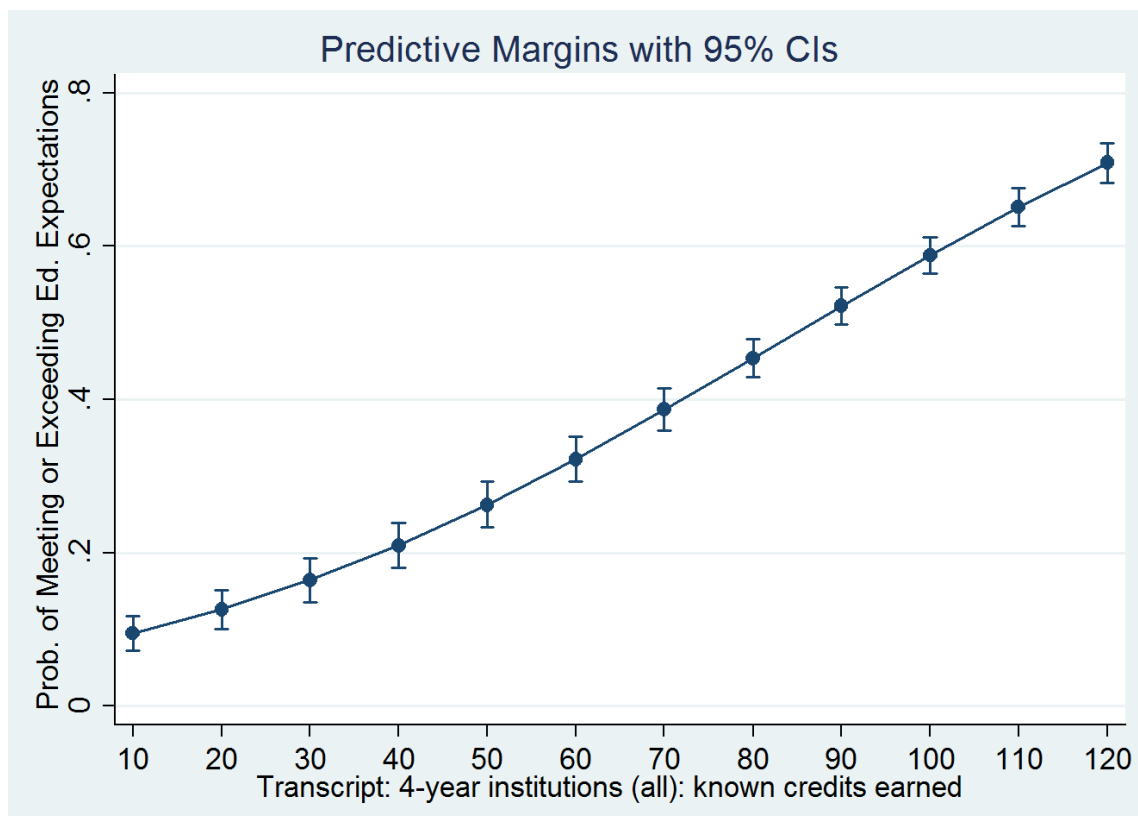


Figure 3.2: Marginal effect of four-year institution class credit on the likelihood of receiving a bachelor's degree

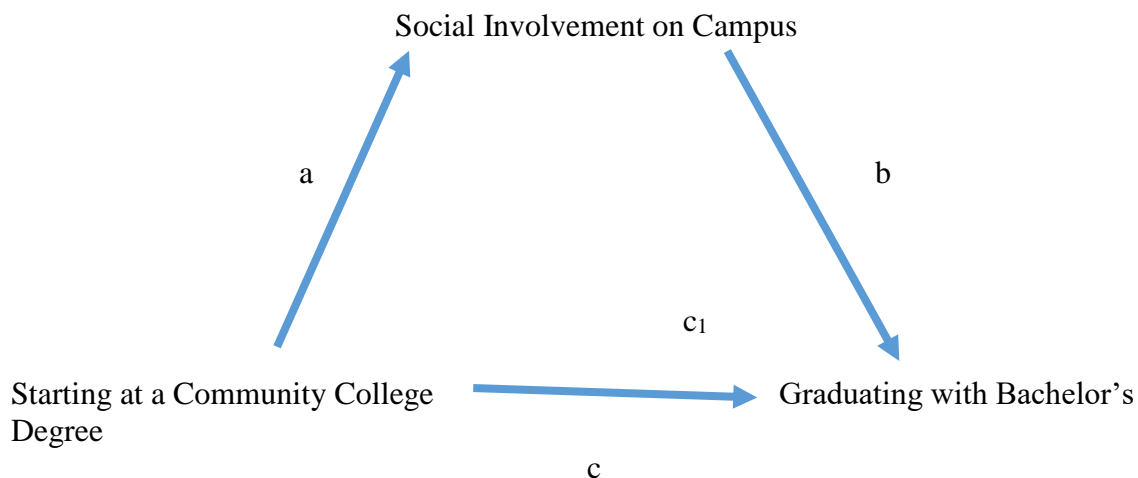


Figure 5.1: Mediated model overview

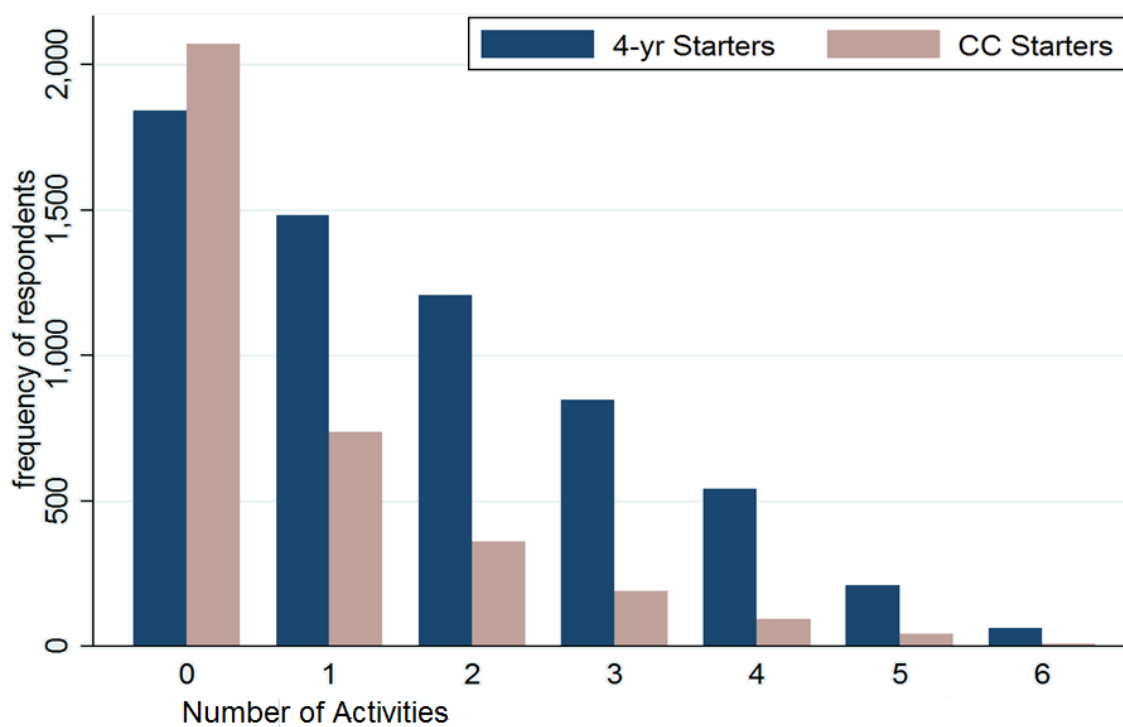


Figure 5.2: Comparison of four-year and community college starters by the number of high-impact educational activities they did

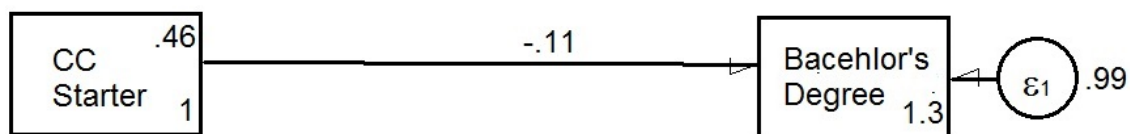


Figure 5.3: Direct model of starting at a community college on bachelor's degree completion

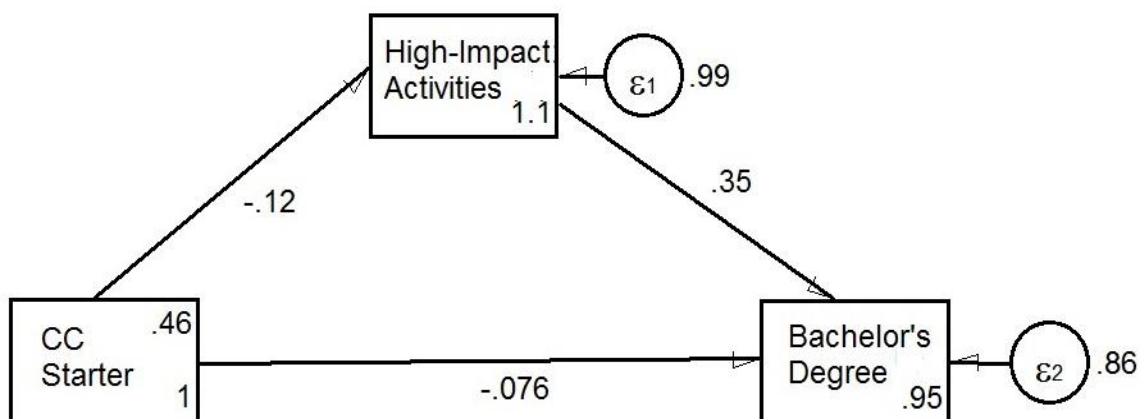


Figure 5.4: Model mediated by participation in high-impact activities

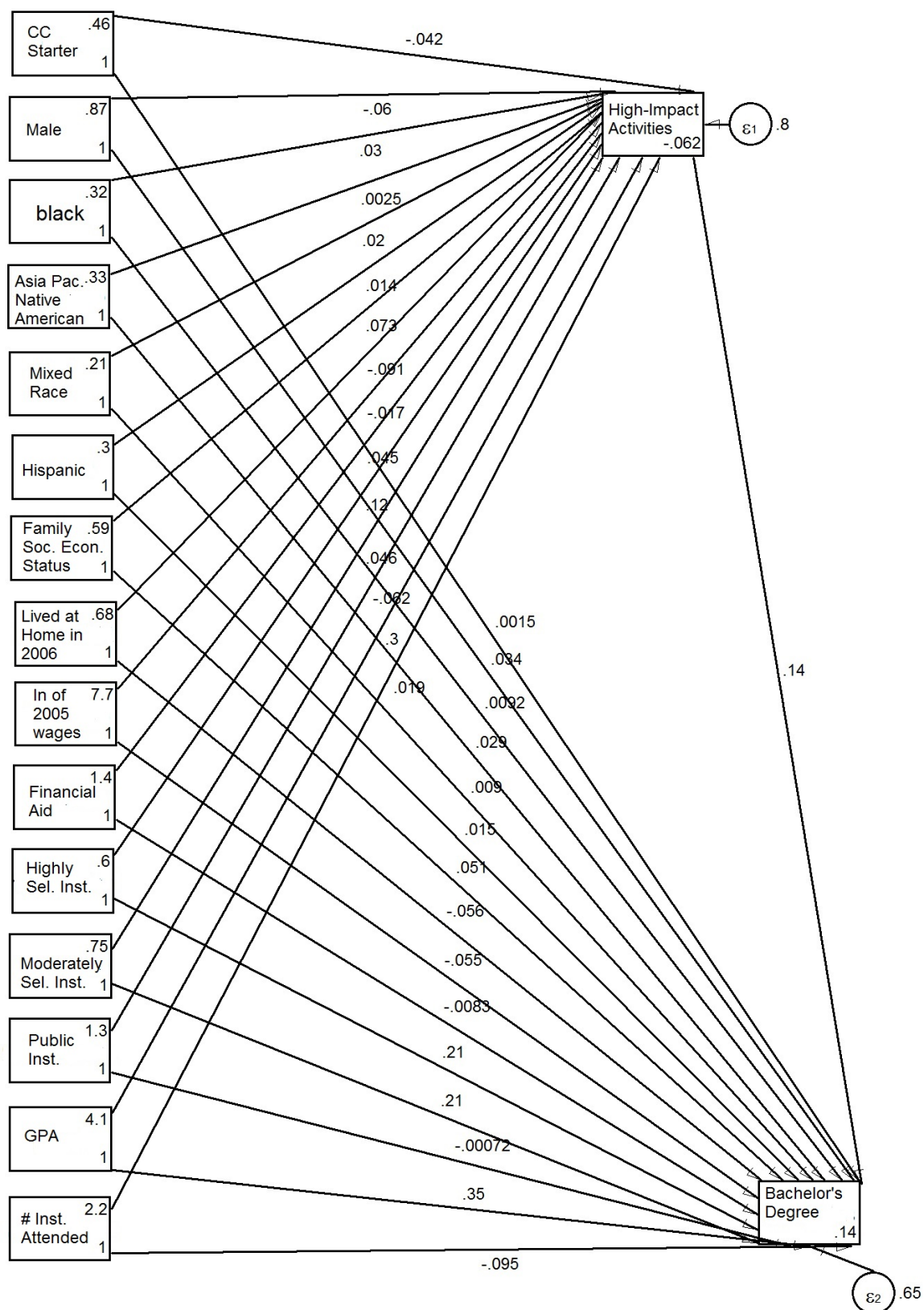


Figure 5.5: Expanded model with background and institutional characteristics

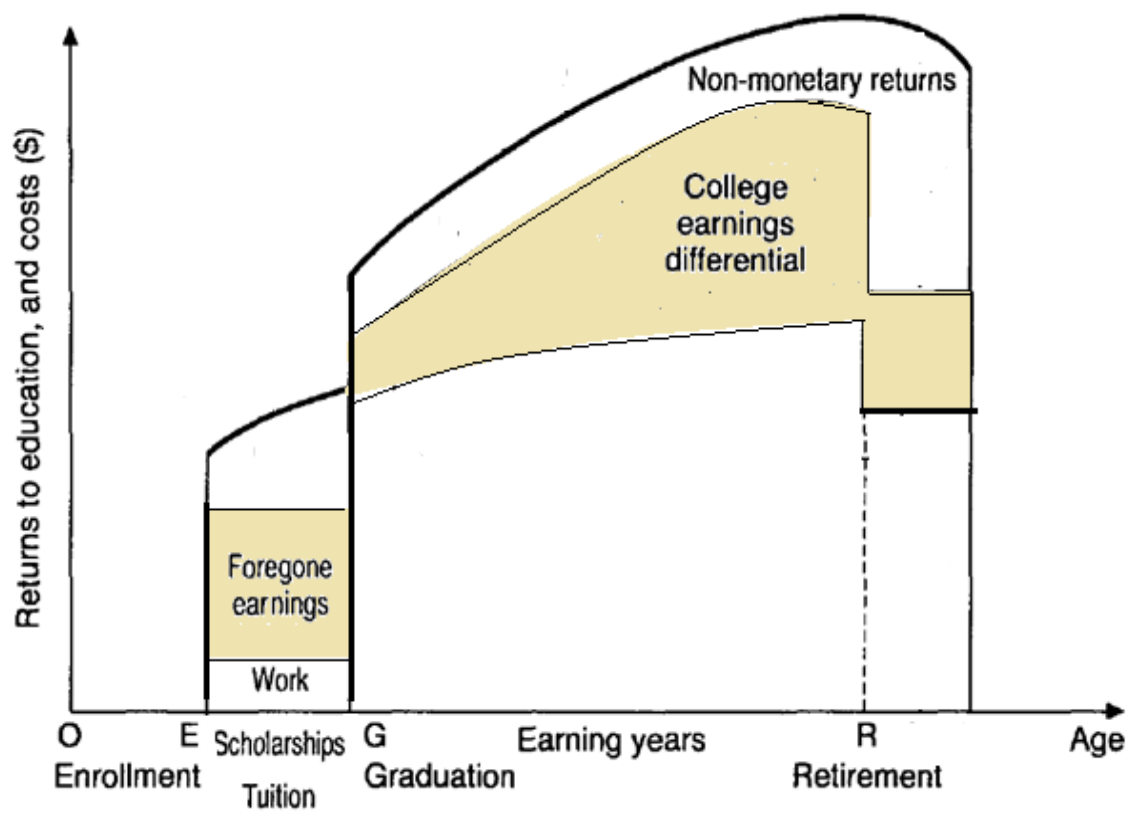


Figure 6.1: Life-Cycle Human-Capital Framework (McMahon 1998)