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ANALYSIS OF THE NEW YORK STATE EXCELSIOR SCHOLARSHIP  
PROGRAM**

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TUITION-FREE COLLEGE AND RETENTION: A QUANTITATIVE ANALYSIS OF THE  
NEW YORK STATE EXCELSIOR SCHOLARSHIP PROGRAM

A dissertation submitted in partial fulfillment  
of the requirements for the degree of

DOCTOR OF EDUCATION

to the faculty of the

DEPARTMENT OF ADMINISTRATIVE AND INSTRUCTIONAL LEADERSHIP

of

THE SCHOOL OF EDUCATION

at

ST. JOHN'S UNIVERSITY

New York

by

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Date Submitted: December 2, 2021

Date Approved: May 17, 2022

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## ABSTRACT

### TUITION-FREE COLLEGE AND RETENTION: A QUANTITATIVE ANALYSIS OF THE NEW YORK STATE EXCELSIOR SCHOLARSHIP PROGRAM

Maria P. Conzatti

Although the community college's original intent was to fulfill a mission dedicated to offering a low-cost, high-quality education to its community, fulfilling its mission is has become more difficult based on ever-increasing financial stresses being placed upon it by various constituent groups. As such, a growing piece of the community college funding model is student tuition. In an attempt to offset the ever-increasing student financial burden, many states have initiated their own form of scholarship aid, such as the new Excelsior Scholarship Program now offered in New York State. The continued decrease in community college funding has motivated additional research to examine the potential relationship between state financing policies and student retention. This study investigated the possible relationship between scholarship receipt and retention at the post-secondary level. Specifically, this study examined the predictive influence between tuition-free college policies, such as the New York State Excelsior Scholarship Program, and student retention at a suburban community college. A logistic regression was calculated using full-time entering students in Fall 2017 and Fall 2018.

*Keywords:* community college, scholarship, free college, retention

## DEDICATION

No great accomplishment is achieved alone; it takes a village . . .

To Dr. Katherine Aquino, an outstanding advisor who knows how to cultivate an individual's ability to succeed.

To my committee members, Dr. Freeley and Dr. Kotok, for providing your invaluable feedback and guidance throughout my research.

To the cohort: We stuck together and pushed each other to get it done. I am grateful for all your support and friendship.

To the core group, and you know who you are: You eased the journey and made it all worth it.

To Dr. Thomas Dolan, the man who started it all for so many: I thank you for everything from the bottom of my heart.

To my mother, who has always been my biggest cheerleader, I love you.

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## CHAPTER 1

Through its measurement by consistent enrollment each academic year (Cuseo, 2014) and ultimate degree completion, student persistence is viewed as an affirmation of student success and fulfillment of a national agenda of increased post-secondary credentialing (O'Banion, 2010). For higher education, student success has always been and continues to be of great importance (Adelman, 1999; Braxton & Hirschy, 2005; Seidman, 2005), since these are measures by which many institutions are evaluated and as such have drawn federal, state, and local attention and monitoring. This increased attention has sparked researchers to propose several models and frameworks for student retention over the decades, including academic, student support, socioeconomic, institutional, and scholarship.

Community colleges, which were mainly formed after World War II, have always been funded on a mixed model, with revenues coming from local and state agencies plus student tuition. However, in recent years, the varying funding allocation methods among states have caused an increase in student tuition reliance. As a sector, community colleges enroll over one-third of all college-age students and are expected, through varied degree programs in the form of certificate and associate degrees, to close the education gap (Brooks, 2016).

### **The Problem**

Statistics indicate that, in fact, community colleges have a lower graduation rate than other sectors, although they provide a low-cost, high-quality undergraduate education. This lower graduation rate may be due to the types of students community colleges tend to serve: high school graduates from low-income families or first-

generation students. These groups have been shown to suffer a higher rate of life circumstances such as financial constraints, transportation issues, and child care needs, which may stall their educational progression or derail it completely (G. Chen, 2020). Financial constraints have resulted in community college students being more heavily dependent on forms of financial aid (Dowd & Coury, 2006). As such, studies have focused on the effects of various types of state and federal financial aid on retention, but not on state-sponsored last-dollar scholarships.

Although community colleges provide the opportunity for people from a variety of America's socioeconomic classes to obtain a college education (Bailey et al., 2004), this vision is in jeopardy based on their underfunding and underperformance. As states continue to provide decreased funding to community colleges, institutions have to make decisions that dramatically affect their affordability and program offerings (Mitchell et al., 2014). Often, this leads to increases in tuition and fees and cuts to vital support programs (Mitchell et al., 2014). Consequently, this has led to increases in the amount a student is expected to contribute to financing their education, making even community college affordability questionable and decreasing the availability of support programming for a historically at-risk population.

Of over 1,000 community colleges in the United States, only 38% of the entering student population complete their degree within 6 years (The Century Foundation, 2019). Others drop out before degree completion due to overextension, underpreparedness, and underfunding (Crosta, 2013), leading to lower overall completion rates at community colleges. Research has shown a direct correlation between funding and degree completion.

Public sentiment toward access to higher education is changing from the original perception of accessibility to all to it being less attainable for some due to affordability (Immerwahr, 2004). College affordability is a national issue facing policymakers, but continued policy change to various state and federal financial aid programs is helping students obtain a college credential without increased debt (U.S. Department of Education, n.d.-a). The nature and complexity of applying for these programs can still inhibit access to higher education, especially for those in lower socioeconomic categories (Dynarski & Clayton, 2006). Access to higher education is dependent on many factors, including a student's ability to pay. Paying for an education is usually done by direct payment from students and/or parents, loans, and student work. Due to public funding, community colleges are the most affordable higher education option and can help with access. In an effort to increase access, several states—Nevada, Hawaii, and Montana, to name a few—have taken the initiative to make community colleges free (Farrington, 2020). Nevada's Promise Scholarship Program is a last-dollar scholarship available to students at its four community colleges and requires a Free Application for Federal Student Aid (FAFSA) form to determine eligibility. Hawaii's Promise Scholarship is a last-dollar scholarship that provides free in-state tuition and also covers fees, books, supplies, and transportation. This program requires a FAFSA form for eligibility. Montana's Promise Act helps students attending community college with tuition and living expenses and is a last-dollar assistance program.

In addition to the free college movement, several other trends have emerged to fund higher education, such as workforce development, populism, local control, and performance-based funding (Kahlenberg et al., 2018). Indicative of these trends, for the

academic year 2017–2018, 78% of first-time, full-time students who enrolled at 2-year degree-granting institutions were awarded financial aid, an increase of 16% from 2000–2001 (Hussar et al., 2020, p. 188). Despite financial aid availability, only 62% of first-time, full-time students enrolled at 2-year degree-granting institutions in Fall 2017 were retained (Hussar et al., 2020, p. 166).

### **Purpose of the Study**

According to R. Chen (2008), students from varied racial and socioeconomic backgrounds responded to aid, in general, differently. R. Chen (2008) suggested a more comprehensive analysis given the heterogeneity of student populations that was inclusive of factors relating to college dropouts such as background characteristics, pre-college preparation, educational aspirations, financial factors, college experience, and time in college. Findings by Gross et al. (2007) indicated that low socioeconomic status (SES) correlated with low persistence. This is further evidenced by the work by Olbrecht et al. (2016), which suggested that increases in aid to non-needy students increased their retention within the higher education environment. This certainly became evident in dealing with community college students, who may vary significantly in financial position from students attending a 4-year institution (Welch, 2014). Statistically, community colleges represent a larger population of low-SES students than their 4-year counterparts (Fike & Fike, 2008). Some educators have looked at SES as the cause of student outcome disparities (Ladson-Billings & Tate, 1995). With respect to the graduation rates of minority students, there is a clear distinction when looking at ethnicity and income, as minority students are retained less and suffer lower rates of graduation (Scurry, 2003). Although colleges and universities have seen increases in enrollments in

the last few decades, students with low SES are less likely to complete a post-secondary education (NCES, 2015). SES affects access to health care, nutrition, and mobility, which creates an issue for residency (Cass, 2010). Singell (2003) found that aid was an insignificant factor in retention regardless of need when other variables such as health were added. Additionally, R. Chen and DesJardins (2008) found that low-SES students experienced a consistently higher dropout risk compared to those with higher SES (p. 14). Residency was a contributing factor for eligibility in many forms of aid. It is often used as a threshold for continuance, yet there is an increase among college-age students in housing insecurity (Foster, 2010). The lack of a permanent address affects school enrollment and causes a lack of official documentation such as medical records and academic transcripts (Crook, 2014 Rahman et al., 2015). As such, the research has shown that students with low SES continue to experience inequity within higher education.

This study investigated the potential relationship between scholarship receipt and retention at the post-secondary level. Specifically, this study examined the predictive influence between tuition-free college policies, such as the New York State Excelsior Scholarship Program, and student retention at a suburban community college. Consistent with previous studies, an analysis was conducted of the impact of pre-college demographics, specifically previous college credit and high school grade point average (GPA), on retention. It also specifically looked to see if there is a predictive relationship between a single financial aid award type or a combination of financial aid award types and retention.

## **Conceptual Framework**

It is clear that the interplay of many variables, including tuition financing, plays a role in retaining students attending a college (Tinto, 1993). Conceptual models such as that recommended by R. Chen (2008), including background, educational aspiration, pre-college preparation, financial factors, college experience, institutional characteristics, interaction effects, and time in college, should be used to evaluate the effects of tuition-free college policies and student retention.

Continued declines in state and/or local funding have sparked fundamental questions regarding overall commitment to higher education. They have motivated researchers to examine possible correlations between state financing policies and student persistence. Some studies seemed to indicate that there was a positive association between tuition-free college and student retention. In a national study by R. Chen and St. John (2011), this very issue was explored. The study integrated the theoretical aspects of researchers such as Tinto (1975, 1987), Bean (1980), Berger and Milem (2000), St. John (2006), and the heterogeneous approach of Leslie and Brinkman (1987), Heller (1997), R. Chen (2008), R. Chen and DesJardins (2008, 2010) into a comprehensive conceptual model in an attempt to understand a possible relationship. To quantify it, two questions were posed: after controlling for student and institutional-level factors, how are state-level financial policies associated with persistence overall at students' first institutions; and do the relationships between state financial policies and first-institution persistence differ by student SES and racial/ethnic background (R. Chen & St. John, 2011)? The study concluded that there were substantial gaps in persistence rates at first institutions by SES. Higher-SES students have 55% higher odds of persisting than do their low-SES

peers. In addition, social integration was a significant predictor of student persistence, as were other variables, including students' educational aspirations, high school GPA, first-year academic integration, and first-year college GPA. Not surprisingly, institutional characteristics were also linked to student persistence, and there was a positive relationship between state need-aid/public tuition and persistence to a bachelor's degree (R. Chen & St. John, 2011, pp. 652–653). Building upon noted theorists' work on retention (Bean, 1980; Tinto 1975, 1987), which indicates social integration and finances are associated with persistence, this study specifically used the R. Chen and St. John conceptual framework to determine if there was a relationship between state-sponsored aid and persistence at the associate degree level. Findings indicated that the relative amount of state financial aid programs was related to persistence as well as social integration and other variables, including high school GPA and first-year college GPA. Based on this framework and availability of specific data elements for this study, previous college credit, high school GPA, SES defined by income level, gender, race, and aid type were used as predictors.

### **Significance of This Study**

The introduction of performance-funding and public accountability for outcomes served to create new relationships between and within educational organizations, their environment, and the community at large as it relates to organizational effectiveness and efficient use of resources. These new relationships were not always positive, and in some cases, the federal spotlight on student outcomes caused threats to higher education. These threats included stripping federally-funded student financial aid and the implementation of versions of state-sponsored performance-based funding, which would equate student

outcomes to institutional funding levels. Regional accrediting agencies were also causing additional stress as they assessed institutional performance and, in some cases, recommended specific resource allocations for institutions to maintain accreditation. Those recommendations were often not aligned with internally vetted faculty and student governance priorities (Kelchen, 2018).

As colleges continue to feel pressure from federal and state agencies, the pressure is also mounting from the public. As many students look to make economically feasible and academically viable choices, the U.S. government, through the Department of Education (DOE), has sought to provide families with additional resources through websites such as [studentaid.gov](http://studentaid.gov), [usa.gov](http://usa.gov), and [ed.gov](http://ed.gov). Also, in 2015 the DOE launched the College Scorecard, an online tool devised to provide consumers with a way to compare key factors in value assessment by providing information on cost, graduation rate, employment rate, average amount borrowed, and loan default rate of all higher education institutions in the United States (U.S. Department of Education, n.d.-b).

Even though on the federal, state, and institutional levels, promotion and use of multiple forms of financial aid are available, researchers have limited evidence of financial aid's effects on retention at the associate degree level. This study contributes to the limited existing body of literature on student retention by expanding the perspective to include varied types of financial aid, especially state-sponsored, last-dollar scholarship aid. This study's results serve to inform higher education leadership, politicians, and the public and could encourage change in current state financing policies for future generations. Results show that retention is an outcome of this program and should lead to changes in what the financial aid monies cover, the annual amount covered, and changes

in institutional program offerings that support retention. This study also provides a renewed focus on pre-college factors that present challenges to retention. Second, the study contributes to institutional and sector knowledge regarding the relationship between the type of financial aid a student receives and student retention. Thus, the new data will be helpful to community college administrators in the recruitment of students and the education of financial aid staff in the awarding of financial aid to positively impact student retention. New or additional financial literacy programs could be established to facilitate student success through this increased knowledge of the relationship between financial aid and retention. Increased financial literacy through a better understanding of financial aid impact can also provide students with increased knowledge of the financial opportunities available to them, allowing them to make more informed decisions when considering program affordability, viability, and sustainability.

### **Research Questions**

This study investigated the relationship between recipients receiving various forms of financial aid and retention at a suburban community college. The following research questions were examined:

RQ1: To what extent did high school academic characteristics of community college students predict retention?

RQ2: To what extent did the Excelsior Scholarship Program influence the retention of community college students, controlling for other student characteristics?

RQ3: To what extent did aid type predict retention of the first-year, degree-seeking student?

## **Definition of Terms**

### *Retention:*

A student's attendance in a subsequent consecutive semester.

### *Scholarship Monies:*

Actual dollars received by a student.

### *Financial Aid:*

Funding available from federal and state governments, educational institutions, and private organizations to students attending a post-secondary educational institution used to assist in covering the costs of education. It can be awarded in the form of grants, loans, work-study, and scholarships.

## CHAPTER 2

Today's community college students are different from what has been defined as the traditional undergraduate, who is usually between the ages of 18–24, a high graduate, financially dependent, attending full-time, and working either part-time or not all. In fact, community college students are more likely to show as non-traditional. Non-traditional students, as defined by the U.S. Department of Education, are financially independent, attend part-time, may not have a high school diploma, and could be working full-time (Juszkiewicz, 2014).

Based on their demographic characteristics, community college students often struggle through the college application process as well as the financial aid application process. As such, one out of five students attending community college does not apply for federal aid (Juszkiewicz, 2014). This chapter will provide a detailed review of the literature as it relates to the community college postsecondary setting, student retention, and financial aid types and structure, as well as the conceptual framework driving this research inquiry.

### **Conceptual Framework**

Building upon noted theorists on retention (Bean, 1980; Tinto 1975, 1987), whose findings indicate social integration and finances are associated with persistence, this study is guided by conceptual framework presented in the research by R. Chen and St. John (2011) that used the noted framework to determine if there was a relationship between state-sponsored aid and persistence at the associate degree level.

The work of both Tinto and Bean provided a framework for how institutional characteristics influence student integration and decision-making regarding persistence.

That research, however, did not account for state financing and its influence. The work of R. Chen and St. John (2011) not only incorporated the influence of the institutional attributes studied by Tinto (1975, 1987) and Bean (1980) but that of state financing policies. Tinto (1975, 1987) and Bean (1980) were the early innovators in retention research and modeling, with Tinto's 1975 research in student integration on a social and academic level, followed by his Integration Model in 1987, which suggested that retention was related to the student's ability and actions at their institutions fostered by a harmonization between the institutional environment and student commitment (Hagedorn, 2005). John Bean (1990) agreed with Tinto's suggestion of the importance of integration but authored the Student Attrition Model (SAM), which deviated from Tinto's model. The difference lay in that it focuses on students' beliefs, which were affected by the interaction between the students and different institution components; this interaction served to shape their attitudes and serve as the predictor of persistence (Hagedorn, 2005). More recently, John Braxton has worked with several authors on student retention and recommended new views on these foundational theories, which address the diversity of the current college student population (Braxton et al., 1997). Unfortunately, despite decades of research, the theories on student retention and its measurement remain unclear (Hagedorn, 2005). A comprehensive discussion of the noted theories can be found in chronological order in this chapter's "Decades of Student Retention Strategies" section.

### **The Community College – Concept, Mission, and Establishment**

Each community college within the United States has its own distinct culture guided by the communities they serve, but at their core, all community colleges are linked by their shared mission and goals. A specific mission definition based on

institutional culture can be used for many purposes, such as for a declaration of existence (Daft, 2009; Kibuuka, 2001; Newsom & Hayes, 1991; Pearce & David, 1987; Wheelen & Hunger, 2000) or to define philosophical approaches to recruitment, marketing, funding, resource allocation, and strategic planning (Hernandez, 2014). From its beginnings, the mission of the community college—originally identified as the “junior college”—was shaped based on the United States establishing itself based on an economy primarily built on agriculture, with the majority of its population living in rural areas. Based on the educational needs of that time, the passing of the Land Grant Act of 1862, also known as the Morrill Act (Vaughan, 1985), emphasized agriculture and the mechanical arts, along with expanded access to public higher education to rural communities, which facilitated the teaching of both courses and students previously excluded from the academy (Vaughan, 1985).

To further strengthen what had been created in 1862, a second Morrill Act was passed in 1890. It called for the withholding of funds from states if admission was denied based on race. The loophole to this legislation included that states would not be denied funding if they provided separate institutions for minorities, serving as the first effort to include minorities within the post-secondary educational system purposefully. It also provided a mechanism for establishing 16 Black land-grant colleges in the southern United States and served to expand offerings into the arts and sciences. Additionally, it allowed for the further development of university systems with expanded academic offerings.

Before the 1930s, the junior college’s role was to offer academic programs to feed the bachelor’s degree-granting institutions. After the 1930s, the introduction of a more

technical education became part of the community college offerings (Vaughan, 1985). Additionally, the Servicemen's Readjustment Act, also known as the GI Bill of Rights in 1944, also contributed to increased enrollment in the post-secondary setting. The bill provided funding for veterans of World War II who wanted to pursue an education and gave an opportunity not only to veterans but also to women and minorities.

The term "junior college" was prevalent until the 1950 publishing of the book *The Community College* by Jesse R. Bogue, who propagated the term "community college" (Vaughan, 1985). The use of the word "community" was further emphasized with the publication of The Truman Commission Report, which advocated for the formation of "a network of public community colleges that would charge little or no tuition, serve as cultural centers, be comprehensive in their program offerings with an emphasis on civic responsibilities, and would serve the area in which they were located" (Vaughan, 1985, p. 8).

The real growth of the community college sector began in the 1960s as a result of earlier legislation, beginning with the GI Bill. The idea that access to higher education was no longer a privilege but a right seemed to take hold. Of course, the key to access is funding, and this was certainly achieved with the passing of legislation in 1965 with the Higher Education Act (Vaughan, 1985). This, along with subsequent amendments, put the possibility of higher education within the grasp of groups with lower SES. Since their advent as junior colleges in the early part of the 20<sup>th</sup> century, community colleges have continued to grow and add to their overall mission to reach any and all populations in an effort to offer broad, affordable educational opportunities. From the days of these institutions offering just academic programming as a springboard to a baccalaureate, the

pendulum has now swung back to the days of the more technical, hands-on approach to education, calling for the granting of more certificates and associate degrees.

In the 21<sup>st</sup> century, community colleges continue to serve their constituents through what has been a long span of time and an ever-changing landscape. There have been major educational shifts in enrollment, leadership, and finances in this decade alone. These shifts have inevitably caused changes, not only to the institutions themselves but also to their governance structure and constituents. Some of these changes could be quite dramatic and have a lasting impact on the community college's mission.

### **Financial Aid and the Role of the Free Application for Federal Student Aid**

Financial aid is defined as the money provided to fund higher education in the form of loans, scholarships, and grants. The Higher Education Act of 1965 was a pivotal action for the U.S. government, which defined the federal government's role in funding higher education as a national issue and priority. This act included guaranteed loan programs. In 1972, the government reauthorization of the act reemphasized its future commitment to higher education for its citizens and led to the establishment of the Educational Opportunity Grants and the Stafford Loan, and began to provide for the state Student Incentive Grant Program to encourage state governments to provide need-based aid (Fuller, 2014). The FAFSA, funded by the Department of Education, is the mechanism established to determine eligibility and award aid funded by government initiatives.

### **Student Retention**

Much discussion within the post-secondary environment has focused on the concept of *high-impact practices*—activities that increased student persistence and

completion, framed through a programmatic and/or social perspective (Kuh, 2008). Researchers have shown that practices such as first-year seminars, learning communities, diversity and global learning, service/community-based learning, and internships do, in fact, have a positive impact on student retention (Kuh, 2008). According to Swaner and Brownell (2008), these practices positively impact not only the general population but also underserved student populations, specifically minority, low-income, and first-generation college students. However, limited scholarship has explored the financial connection to student persistence. This chapter focuses on the current literature related to students' retention and persistence behavior and how factors including financial aid have contributed to retention and persistence. A review of literature of past decades of student retention strategies and the financial and non-financial variables identified in both the Student Attrition Model (SAM) and Student Integration Model (SIM) follows.

### ***The Role of Financial Aid in Retention***

According to the National Center for Public Policy and Higher Education (2002), a significantly higher percentage of students from middle-income families received financial aid at private, not-for-profit 4-year institutions, suggesting that institutional aid may facilitate the choice of this type of institution. Based on this, the literature provided much research on grants and retention within 4-year institutions. A study conducted by Singell (2003), using data for 10,560 in-state and out-of-state freshmen, examined the effects of financial aid on retention. The results indicated a significant increase in first-year retention for those receiving financial aid, with 18.4% more likely to re-enroll. This was not consistent with results regarding those receiving merit-based aid. For those receiving merit-based awards, even after controlling for ability, there was, in fact, a lower

predicted impact on needy versus non-needy students, who had a probability of 10.8%. Gross et al. (2007) similarly found a modest effect of aid on retention. However, they posited that this may have been due to other student characteristics like gender and race.

The Tennessee Lottery Scholarship (TELS) program was created to make college affordable with the intended outcome of increased enrollment and retention. Using data obtained from Middle Tennessee State University for all undergraduate students for the academic years 2004 through 2006, in conjunction with a logit model to predict year-over-year college retention, it was concluded that lottery scholarship monies affected the average student, but only at the margin. In addition, the lottery scholarship monies seemed to have had the most impact on continuing students and not at all for first-time students (Penn & Kyle, 2007). Using data from Fall 2010 to 2014 for first-time, full-time cohorts from a highly selective public liberal arts college in New Jersey, multivariate regression analysis provided an examination of the relationship between financial issues and student retention. Results showed that as the unmet need increased, so did the probability of retention. This seemed to then provide for logic that students who must contribute to college costs and are financially invested may be more likely to be retained (Olbrecht et al., 2016).

Similarly, at a private 4-year institution, Gansemer-Topf and Schuh (2005) examined how institutional grants (student financial aid) related to retention and graduation over a 10-year period to address the question of whether the amount and percentage of money devoted to institutional grants significantly predicted first-year retention and 6-year graduation rates in 1992, 1997, and 2002. Through multiple regression analysis, it was found that if, in fact, an institution's primary objective was

increasing retention and graduation, that for low-selectivity colleges, a reallocation of resources would be advised.

Unlike that about 4-year institutions, literature about community college students' effects was limited. Based on a regression discontinuity analysis of Tennessee's 13 state community colleges from Spring 2002 to Spring 2012, which looked at post-matriculation outcomes, including persistence, for five cohorts of students, findings suggested that reducing community college costs does not impact student persistence. In addition, it had little impact on areas such as academic performance and degree completion for marginally eligible students (Welch, 2014).

Research conducted with first-time college students in North Carolina on the effects of financial aid on community college retention offered insights based on academic factors, pre-college demographics, and financial aid data. Findings indicated that aid recipients had distinct characteristics that affected retention and completion. The strongest indicator for retention was first-year GPA and first-year course completion. Recommendations included the creation of learning communities, financial aid orientations, academic progress workshops, and an emergency loan program; further, the study initially supported faculty/staff professional development in dealing with at-risk students (Brooks, 2016).

In addition, a state-wide study on persistence conducted of the Oklahoma Higher Education Access Program (OHLAP), Pell grants, and Stafford Loans indicated that all forms of aid independently and in combination were predictors of persistence and were further differentiated by race and income. It also validated the effectiveness of state-wide

financial initiatives such as OHLAP that combine need and merit-based criteria, as well as counselor support and academic benchmarking (Mendoza et al., 2009).

### ***Persistence vs. Retention***

In higher education, the terms “persistence” and “retention” are often seen as and used interchangeably in the context of student persistence, and they have been the subject of discussion and debate for decades. According to the National Center for Education Statistics, the difference between them was a matter of point of view as “retention” is an institutional measure and “persistence” is a student measure, meaning that an institution can retain its students, but only a student can persist at an institution (Hagedorn, 2005). According to Manyanga et al. (2017), persistence is when “an individual student successfully fulfills specific course requirements leading to graduation, whereas retention is institutional in nature and requires continuous student enrollment through graduation.”

### ***Student Attrition Model and Student Integration Model***

Through discussion and debate over three decades that began in the 1970s, two conceptual models emerged: SAM and SIM, with the College Dropout Model (CDM) adding financial barriers to those identified in SAM and SIM (Manyanga et al., 2017). SIM looks at the organizational, personal, and environmental variables that affect student persistence (Cabrera et al., 1992). SAM posits that events prior to dropout affect beliefs that drive attitudes influencing student departure (Manyanga et al., 2017). These models over several decades have been and continue to be further defined as research in this area advances.

Student retention has been studied for several decades and has gone through several stages. Published work from the 1960s focused on social engagement, with the

era of student retention hitting its peak in the 1970s. The 1980s focused on student enrollment, and the focus on student diversity began in the 1990s. The past two decades have brought attention to the areas of student advising, engagement, and retention, and beginning in 2010, a focus on integrated strategies emerged (Manyanga et al., 2017).

### ***Decades of Student Retention Strategies***

**The Student Retention Era – 1970–1979.** With the GI Bill’s introduction providing financial support and increased access for middle- and low-income students, a post-World War II environment brought exponential enrollment growth to higher education, and institutions began to monitor enrollment. By the early 1960s, during a time of political and social unrest, increases in enrollment had also brought increases in diversity, and with it, questions about access, persistence, and graduation arose. In the late 1960s, the topic of retention became a common conversation of concern on campuses, and as such, the 1970s began the work of the systemic study of retention. Spady (1970) established the first model addressing student dropout, building on Durkheim’s 1961 model of suicide. Durkheim’s model posited that suicide can be categorized into four classifications: egoistic, altruistic, fatalistic, and anomic. Spady’s egoistic category is manifested when an individual is unable to achieve societal integration either socially or intellectually. Spady hypothesized two essential aspects based on Durkheim’s work; the first is that group values lead to less suicide and similarly less dropout, and the same is true for friendship support, i.e., the more friends that supported an individual, the less likely commitment of suicide or dropout (Bean, 1981). Spady’s (1971) research was based on five variables that contributed to social integration and influenced a student’s decision to drop out. The variables were academic potential,

grade performance, intellectual development, normative congruence, friendship support, and were supported by Durkheim, with research findings identifying academic performance as the dominant factor. Spady's model concluded that all of the variables contributed to increased social integration, which increased satisfaction. This increased satisfaction resulted in increased institutional commitment, which stemmed from dropout (Bean, 1981).

Tinto (1975) introduced his SIM developed from Spady's and Durkheim's previous research. This model looked to explain why students left college prior to completion. According to Tinto, this was achieved through a combination of goal and institutional commitment, as students may not be committed to an institution or to the goal of degree completion based on financial concerns. These concerns may cause alternative decisions to be made, such as the acceptance of a full-time job or transfer (Cabrera et al., 1992). In an institutionalized system such as academe, goal commitment can be seen as a leading indicator of higher grade achievement and, thereby, greater intellectual development. This increased development then fostered a greater academic integration, which in turn fostered the cycle of even greater goal commitment, therefore, lessening dropout. In a societal system based on human socialization and interaction, institutional commitment fostered peer-to-peer, group, and faculty interactions, which resulted in greater social integration and increased institutional commitment, all leading to a reduction in the likelihood of dropping out (Bean, 1981). The work of both Tinto (1975) and Bean (1981) showed a correlation between increased levels of institutional interaction providing an increased level of student satisfaction and thus institutional commitment and student persistence.

Pascarella and Terenzini (1976) found a significant correlation between out-of-classroom contact (for purposes of advising, counseling, discussion, or socialization) and faculty and student satisfaction. They found these interactions to influence a student's personal and intellectual development.

**The Student Enrollment Era – 1980–1989.** Bean (1980) introduced an industrial model of student attrition which looked at a student's background as a factor for student success through variables such as parents' education and high school grades, which were anticipated to influence indicators of student interaction, such as having close friends, supportiveness of an advisor, informal contact with faculty members, grades, and organizational memberships. Furthermore, student intent to stay meant a decreased likelihood of dropping out with an increased effect on institutional commitment. In addition, environmental variables involving the opportunity to transfer, opportunity to get a job, family approval of the institution, family responsibilities, likelihood of marrying, and difficulty of financing one's education were expected to have direct effects on institutional commitment and dropout, making this model the first to use student attitudes as variables to predict dropout (Bean, 1981).

Pascarella (1980) introduced a conceptual model of dropout, which stressed the importance of student-faculty informal contact. In this model, background characteristics interact with the institutional image, administrative policies and decisions, size, admissions, and academic standards. These institutional factors were expected to influence informal contact with the faculty, including other college experiences, extracurricular and educational outcomes such as intellectual and personal development, educational and career aspirations, college satisfaction, and institutional integration. All

of these outcomes were expected to directly influence persistence/withdrawal decisions (Bean, 1981).

Research conducted by Bean and Metzner (1985) looked at the models previously presented by Spady (1970), Tinto (1975), Pascarella (1980), and Bean (1985) of the dropout process for traditional students but that had not taken into account non-traditional students. The non-traditional student was defined as “older than 24, or did not live in a campus residence (e.g., was a commuter), or was a part-time student or some combination of these three factors” (Bean & Metzner, 1985). Findings suggested that the main difference in attrition for a traditional versus non-traditional student lay in the external environmental factors rather than social integration variables which had been shown to affect traditional student attrition (Bean & Metzner, 1985). With regard to college financing, students’ ability to finance their college education has been measured in multiple studies by various indicators such as parents’ SES (e.g., occupation, education); students’ or parents’ income; and students’ perceptions about their finances, e.g., financial problems, inadequate finances, degree of financial concern, and extent of certainty about finance. Findings suggested that financial difficulty was related to attrition for residence-oriented 4-year institutions, as well as commuter-oriented 2-year and 4-year institutions (Bean & Metzner, 1985).

Tinto’s work in student retention spans many years of research, and his early work focused on student behavior and dropout (Tinto, 1975, 1982, 1987). His theory specifically looked at the decision to drop out of college as an integration of three areas as related to student characteristics and the degree to which they are integrated into their institutions’ academics, socialization, and environment. His later work in 1993 led to the

development of the longitudinal, explanatory model of departure, which added variables such as isolation and finances. His theory posited that if a student was integrated on a social and academic level, the student displayed more institutional commitment and thereby more commitment to the goal of graduation (Pascarella et al., 1986).

**The Student Diversity Era – 1990–1999.** The work of Cabrera et al. (1993) tested the theory that the variables studied and presented by Tinto (1975) and Bean (1982) could be merged into one integrated model for retention. This theory combined Bean's courses and institutional fit variables with Tinto's academic integration and institutional commitment. Results of this merger indicated that this more comprehensive review explained the student attrition process and that environment played a much more significant role than initially identified by Tinto. This study suggested that institutional retention plans focus on variables that encourage persistence and address students' attitudes toward withdrawal (Aljohani, 2016).

Swail (1995) focused on minority student retention, specifically the identification of the causes of low retention and the recommendation of a specific framework for the development of institutional practices and programs. His recommendations incorporated five components: financial aid, recruitment and admissions, academic services, curriculum/instruction, and student services. Specific to the financing of a college education, it was noted that colleges should take several steps. These steps included the identification of the availability of grants and scholarships and the appropriate steps that must be taken to apply for funding; maximizing the availability of grants and scholarships as an alternative to student loans; and the "frontloading" of grants and

scholarships to provide more support in the early years of college. It also identified the influence of the faculty-student relationship as well as campus culture.

Adelman (1999) researched students who, after graduating from high school, attended a 4-year college and graduated, including students who transferred from a community college. His findings, published in *Answers in the Tool Box*, identified what contributed to bachelor's degree completion. Findings suggested that high school curriculum reflects more significantly than test scores or class rank/academic GPA, with the curriculum producing more bachelor's graduations than other measures. In addition, the curriculum had a noticeably far greater positive impact on degree completion for African-American and Latino students and was found to be much greater than it was for White students.

Also, the combination of higher quality in high school curriculum, higher test scores, and higher class rank (defined as academic resources) produced a much higher bachelor's degree completion rate than SES. Students of low SES but with high academic resources tend to earn bachelor's degrees at a higher rate than a majority of students of high SES. Advanced Placement (AP) was also strongly associated with bachelor's degree completion, more than with college access.

**The Student Advising, Engagement, and Retention Era/Integrated Strategies – 2000–Present.** In 1999, Tinto added the need for academic advising and, in 2004, expanded this to the offering of accessible, integrated support services to support academic, personal, and social interactions. With support services linked to classroom learning, engagement was more likely. Pursuant to classroom activity, interactions between students and faculty also fostered integration into the campus community.

Kuh's (2005) research on student development indicated that campus engagement plays an essential role in retention. Findings suggested that students' learning is intensified through experiences both inside and outside the classroom when they are complementary and reciprocally reinforced. Examples of this are activities such as working on campus or writing for the student newspaper, both of which require daily decisions and tasks which facilitate a student's investment in the activity itself and the institution. Upper-division students at the University of Michigan who were involved in the undergraduate research program in their first year of college described continued and meaningful contact with their faculty mentor as a contributing factor to their continued persistence.

In addition, providing support networks and early warning mechanisms help students' academic performance, leading to greater student satisfaction, increased persistence, and higher graduation rates. Examples of these types of support networks are orientation programs; placement testing; first-year seminars; learning communities; intrusive advising; and financial aid, including on-campus work, internships, and service-learning.

Braxton (2000) used the theory of Tinto specific to social integration and student enrollment as a basis for the study. He concluded a need for revision to Tinto's theory through commuter students' lens and looked at motivation, control, self-efficacy, and empathy. Braxton concluded that Tinto's theory did not hold the same validity with commuter institutions as with residential institutions. He suggested that the theory should be inclusive of two lines of thought: academic integration and intellectual isolation.

The work of Levine and Dean (2012) looked at students and their educational expectations. It highlighted students' anticipation and wants for community belonging and connection to their faculty. Life outside the classroom seemed to indicate a trend toward less involvement in organized activities. Findings suggested that historically underrepresented students seemed to find increased satisfaction with their college experience through increased guidance and support from their institutions.

### **Relationship Between Prior Research and the Present Study**

This literature review of retention studies sought to identify if there is an association between tuition-free college policies, such as Excelsior, and student retention. Findings suggested that retention was a more complex issue than just financial. Environmental factors seemed to play a role in the retention of students, as was evidenced by studies conducted by Gross and Meriwether (2016) and served to support findings by R. Chen and St. John (2011), which found factors such as social integration, educational aspirations, high school GPA, first-year academic integration, and first-year college GPA in addition to state financing as contributors to the retention of students and their continued persistence.

Academic success prior to college entrance has been shown to be predictive of persistence, and in some studies, high school grade point average has been the most predictive (Astin, 1993; Crissman-Ishler & Upcraft, 2005). Research done by Allensworth and Clark (2020) indicated that high school grades are a reliable indicator of future academic performance. High school grade point averages were a strong predictor of college outcomes, as evidenced by Hiss and Franks (2014). Research by Hoyt and

Sorensen (2001) supported high school records as a form of multiple measures over placement exams.

Student retention rates were higher for those with previous college experience, often delivered through credit-based transition programs. These programs facilitated the earning of college credit while still attending high school and were offered through instruments such as AP, International Baccalaureate (IB) programs, Tech Prep, Middle College High Schools (MCHS), and dual enrollment (Bailey & Karp, 2003). According to Kleiner and Lewis (2005), these programs enhanced retention and adeptness in learning. In addition, participants in dual enrollment exhibited higher persistence and grade point averages (Karp et al., 2007).

Demographic and background characteristics of higher education students indicated an increasingly diverse population (Reason, 2009). According to Weidman (1989), students added to their college experience through their background and demographic individualities, including SES, academic ability, goals, and values. Several researchers have found that demographic characteristics of SES, race, and gender have a significant association to educational achievement (Peltier et al., 2000). Studies conducted by Pascarella and Terenzini (1991, 2005) concluded that persistence and completion were related to students' SES. Bowen et al. (2009) found that students of lower SES were significantly less likely than those with higher SES to earn a degree.

Few quantitative studies that looked at scholarship seem to connect race, gender, and financial eligibility. Although several of the studies reviewed used race as a variable, results were not always reported in their findings. Research conducted by Gross et al. (2007) and Penn and Kyle (2007) presented findings that race did impact persistence.

Using race as a variable during analysis was useful in connecting the significance of race as a factor in how people experience education (Milner, 2013, p. 1). Contrary to Reason's (2009) findings that Asian and White students had a higher persistence rate than other minority groups, Hu and St. John (2001) found that race was not a factor in completion if demographic variables such as SES were controlled. This led to the theory that differences in income or preparation might be at the root of differences in completion and ultimate attainment.

Gender was looked at in several studies, but again was not consistently reported in study findings. Some findings suggested that men are more likely to persist than women when institutional aid is received (Gross et al., 2007, p. 36). Leppel (2002) indicated that nationally race and circumstantial variables affected persistence differently based on gender. Although there have been meaningful gains in access and attainment of higher education by females, findings continue to show evidence of social force's influence on females' retention (Stage, 1989). The role of the female within the household, sometimes defined by cultural norms and that of child-bearer, continues to be a societal force that affects the retention of female students. Unfortunately, gender inequity persists despite the gains in access and educational attainment (Jacobs, 1996, p. 176). It would seem that this inequity was then a result of differences in educational experiences and outcomes rather than in access, which caused gender to be looked at as simply a variant on the issues of socioeconomic or racial inequality (Jacobs, 1996, p. 177).

It is clear from the literature that the effects of aid on student retention are not at all straightforward and are influenced by many factors such as race, gender, and SES. In conjunction with changing financial policies, including the addition by many states of

“tuition-free” scholarships, researchers are faced with increased challenges in accurately assessing the true impact of these and other variables on student retention. Although this literature review did not investigate all variables that could contribute to student retention, it did provide a clear indication that several variables, which should be looked at across subgroups, warranted further study.

Based on those intimations, it is evident that the use of research by R. Chen and St. John (2011) as the conceptual framework to guide this study is appropriate, as the study integrates the retention findings of both Tinto (1975, 1987) and Bean (1980), whose findings account for variables associated with both social integration and finances.

## CHAPTER 3

This study investigated the potential relationship between scholarship receipt and retention at a suburban community college. Specifically, this study used binary logistic regression and examined the predictive influence of tuition-free college policies, such as the New York State Excelsior Scholarship Program, on student retention at a suburban community college. The framework for this study was built upon work by retention theorists such as Tinto (1975, 1987) and Bean (1980), but specifically used the R. Chen and St. John (2011) conceptual framework to determine to what extent the Excelsior Scholarship Program influences the retention of community college students. An analysis was conducted of the extent to which previous college credit, high school GPA based on a 100-point scale, SES defined by income level, gender, race, and aid type predict retention. I also explored if there is a predictive relationship between a single financial aid award type or a combination of financial aid award types and retention.

The following research questions were examined:

RQ1: To what extent did high school academic characteristics of community college students predict retention?

RQ2: To what extent did the Excelsior Scholarship Program influence the retention of community college students, controlling for other student characteristics?

RQ3: To what extent did aid type predict retention?

### **Research Design and Data Analysis**

The researcher explored these questions using a non-experimental quantitative approach. In the definition of a non-experiment, the focus was on the statistical relationship or correlation between two variables but did not include manipulating an

independent variable. Logistic regression was used as a predictive analytic for an outcome based on a set of independent variables that occur or do not, making it binary. The formula for logistic regression,  $\text{logit}(p) = \beta_0 + (\beta_1 * X_1) + (\beta_2 * X_2) + (\beta_{...} * X_{...})$ , was used in defining retention as the dependent variable.

The level of significance ( $\alpha$ ) for this study was set at .05. If the  $p$ -value was less than or equal to the level of significance of .05, then the null hypothesis that there is no statistically significant relationship between tuition-free college policies such as Excelsior and student retention at a community college was rejected. If the  $p$ -value was greater than or equal to the level of significance of .05, then the null hypothesis was retained.

The following provides an outline of the variables used in the binary logistic regression analysis:

- Gender – Gender was coded as non-male = 0 and male = 1. The non-male coding included a variety of identified genders including unknown.
- Race – Race was initially provided in the Integrated Postsecondary Education Data System (IPEDS) reported breakdown and was recoded to 0 = White and 1 = non-White due to a small sample size for Asian, American Indian or Alaska Native, and Native Hawaiian or Other Pacific Islander.
- GPA – High school grade point average was coded on a scale of 0–100. High schools that reported GPA using a 4-point scale were recoded using the College Board GPA Scale converter chart.
- AP Score – AP Score was coded as 0 = non-AP, meaning that no previous AP credit was earned, and 1 = AP, meaning previous AP credit was earned.

- Intl Baccalaureate Exam Scores – IB Exam Score was coded as 0 = non-IB, meaning that no previous IB credit was earned, and 1 = IB credit meaning previous IB credit was earned.
- College Transcript HS – College Transcript High School was coded as 0 = non-college transcript, meaning that no previous dual enrollment credit was earned, and 1 = college transcript, meaning previous college credit through dual enrollment was earned.
- Pell – Federal Pell Grant award was coded as 0 = non Pell paid, meaning no Pell aid was received by the student for the academic year, and 1 = Pell paid, meaning Pell aid was received by the student for the year.
- TAP – New York State Tuition Assistance Program (TAP) was coded as 0 = no TAP paid, meaning no TAP monies were awarded, and 1 = TAP paid, meaning a TAP award was paid for the academic year.
- Excelsior – Excelsior Scholarship Program was coded as 0 = no Excelsior paid, meaning no Excelsior Scholarship monies were awarded, and 1 = Excelsior paid, meaning Excelsior Scholarship monies were received by the student for the academic year.
- SES by income level – SES by income level was coded as 0 = no Pell eligibility and 1 = Pell eligibility. In order to determine SES by income level, the income level was determined using Pell expected family contribution (EFC).
- Returning in Spring – Returning in Spring was coded as 0 = not returned in spring and 1 = returned in spring as an indication of student retention as the dependent variable.

### ***Research Question 1***

To what extent did high school academic characteristics of community college students predict retention?

To answer this question, the high school grade point average based on a 100-point scale was obtained from the student information system of Isola Lunga Community College (ILCC) collected through the submission of original high school transcripts from the high school guidance offices. A high school transcript is an admissions requirement and an eligibility requirement for financial aid. Full-time, degree-seeking students entering ILCC in Fall 2017 and Fall 2018 were coded as retained or not retained based on whether or not the student within the entering cohorts was continuously enrolled from the Fall 2017 semester to the Spring 2018 and Fall 2018 to Spring 2019 semester. A logistic regression analysis was used to determine if there was any difference between financial aid students who were retained compared to financial aid students who were not retained on the pre-college demographics of previous college credit and high school GPA.

**Hypothesis.** According to a review of literature conducted by Ishler and Upcraft (2005), a significant factor contributing to persistence was high school achievement. In support of that review, Astin (1993) found that a student's high school GPA was a predictor of a student's college GPA. Pascarella and Terenzini (2005) presented a more comprehensive approach, including five sets of variables, including pre-college characteristics such as a student's socioeconomic background, preparation for college-level work, and demographics.

Based on this research which indicated significance using several variables, the following null hypothesis and hypothesis were developed.

H<sub>0</sub>: High school academic characteristics of community college students did not predict retention.

H<sub>1</sub>: High school academic characteristics of community college students did predict retention.

### ***Research Question 2***

To what extent did the Excelsior Scholarship Program influence the retention of community college students, controlling for other student characteristics?

To answer this question, the Office of Institutional Research and Strategic Planning (OIESP) provided data in the form of an Excel spreadsheet containing the requested demographic information of all Excelsior recipients and a comparable number of non-recipients. Information on the spreadsheet was loaded into SPSS version 28 for analysis. A logistic regression was used to examine if there was a relationship between receiving scholarship monies (treatment) and retention, race, SES defined by income level, and gender. Participation in Excelsior, gender, race, and SES defined by income level were defined as the independent variables; retention was defined as the dependent variable. Due to the small sample size, the variable gender was categorized as male or non-male, and race was classified as either White or non-White.

**Hypothesis.** In research conducted by Tinto (2012), student finances were identified as a strategic component in adjusting to college life. This adjustment allowed for student success through structured academic, social, and financial support. Although research has found connections between aid, specifically grants and/or scholarships, and persistence, a study by Pascarella and Terenzini (2005) has shown mixed results. Based on the use of a simulation model of college student departure over time to financial aid

packaging, DesJardins et al (2002) found no relationship between grants and persistence, but they did find a relationship between scholarships and persistence. Murdock (1989) also found that substantial aid awards were a factor in persistence, specifically among minority groups. Additionally, since community colleges tend to serve the neediest of the student population, even after aid is awarded, students still face large amounts of unmet need (Goldrick-Rab et al., 2013). Based on this research which indicated results are mixed based on other variables such as the amount of aid, the following null hypothesis and hypothesis were developed.

H<sub>0</sub>: Controlling for other student characteristics, the Excelsior Scholarship Program did not influence the retention of community college students.

H<sub>1</sub>: Controlling for other student characteristics, the Excelsior Scholarship Program did influence the retention of community college students.

### ***Research Question 3***

To what extent did aid type predict retention of the first-year, degree-seeking student?

To answer this question, an examination of the first-year financial aid students in the retained and not retained groups was conducted. The financial aid types data included Federal Pell Grants, New York State TAP, the New York State Excelsior Scholarship Program, and amounts for the 2017–2018 and 2018–2019 financial aid year were utilized. The dependent variable of student retention was measured dichotomously as retained or not retained for each entering cohort for Fall 2017 to Fall 2018 and Fall 2018 to Fall 2019. Financial aid awards were measured by the dollar amount received in the fall and spring semesters, since aid amounts were awarded once for the year to cover the two

semesters. Enrollment data were used to determine whether the financial aid students (first attending Fall 2017 and Fall 2018) returned the following year (Fall 2018 and Fall 2019). A logistic regression analysis was used on all the variables (Federal Pell Grants, New York State TAP, and the New York State Excelsior Scholarship Program) to determine whether the award amounts had a predictive relationship to retention (for one academic year). Predictor variables were the amount of federal and state awards. The dependent variable of retention from fall to spring determined if the variable of financial aid type, individually or combined, was a significant predictor of student retention.

**Hypothesis.** Research by Cabrera et al. (1992) found that financial aid assisted in integrating students into the academic and social aspects of college life, thereby influencing student persistence. In addition, it served as an equalizer between students of various levels of SES. With the rising cost of tuition, federal grants such as Pell no longer provide the same level of support in today's economy as they did in past years (R. Chen & DesJardins, 2008). That unaccounted-for inflation has led to 45% of Federal Pell Grant recipients not persisting from their first to second year of college (Schudde & Scott-Clayton, 2014). Research by Perna (1998) concluded that award type affected persistence, finding that grants are more effective than loans. Based on this research and annual increases in college tuition, the following null hypothesis and hypothesis were developed.

H<sub>0</sub>: Aid type was not predictive of retention of the first-year, degree-seeking student.

H<sub>1</sub>: Aid type was predictive of retention of the first-year, degree-seeking student.

## **Reliability and Validity**

Several steps were taken to ensure reliability and validity in this study. Relevant assumptions of statistical analysis were tested. Before conducting the logistic regression analysis, the data were evaluated for missing data and outliers.

### ***Assumptions and Conditions of Logistic Regression***

Logistic regression is an effective method for assessing independent variable contributions to a binary outcome, whose accuracy is largely dependent upon the selection of variables that met some basic assumptions. Unlike a standard regression that is assessed based on true values of independent variables, a logistic regression assesses values from 0 to 1 (binary) revealing the possibility of particular outcomes for a variable (e.g., “pass” or “fail”). Logistic regression also did not require assumptions of normal distribution of independent variables, linearity, and equality of variance-covariance to be met (Cokluk, 2010). Still, four basic assumptions when conducting logistic regression must always be met (Stoltzfus, 2011). The first of these assumptions is independence of errors, meaning no two responses are the same. A second assumption is linearity for any continuous independent variables (e.g., age), meaning there should be a linear relationship between these variables and their respective logit-transformed outcomes. A third assumption is the nonexistence of multicollinearity, meaning any redundant independent variables that may have correlation (e.g., weight and body mass index). A final assumption is a lack of strongly influential outliers that may cause a drastic change in a predicted outcome (Stoltzfus, 2011).

### ***Missing Data***

Missing data is a predominant issue when conducting analytical studies, and as such, research has been conducted on the best solution for this issue. Of particular interest to this study, since it was based on a small sample size, was work done by McNeish (2017), which studied small sample performance using listwise deletion, joint multiple imputations, and multiple imputations for a single-level, continuous outcome regression. Results of the study showed that joint multiple imputations were the best solution, provided that assumptions of the regression analysis were met (McNeish, 2017).

A study conducted by Jakobsen et al. (2017) suggested that multiple imputations be used to handle missing data under the following conditions: missing data was substantial; only dependent variable values were missing; data were missing completely at random; or data were missing not at random. Data for this study were evaluated based on the above, and if any of the above conditions existed, multiple imputations were performed.

### **Sample**

This study's sample included full-time, degree-seeking students entering ILCC in Fall 2017 and Fall 2018 who received any Excelsior Scholarship monies and those who did not. Students were included in the sample only if they had complete gender, race, previous college credit, high school GPA, and registration status data. The student's subsequent semester registration status was necessary as it was used to indicate retention. Only the entering student data from the Fall 2017 and Fall 2018 semesters was analyzed since entering Fall 2019 would encompass subsequent Spring 2020 registration data. Data from this timeframe may have been skewed due to the COVID-19 pandemic. ILCC does not serve a substantial population of Excelsior Scholarship recipients. This may be due to

the cost of living in Isola County, from which approximately 80% of ILCC's student enrollment is derived.

The City University of New York (CUNY), founded in 1847, is the public university system of New York City. It comprises 25 institutions, of which 11 are senior colleges, 7 are community colleges, 1 is an undergraduate honors college, and 7 are post-graduate institutions (CUNY, 2019). In comparison, the State University of New York (SUNY) was established in 1948. It includes 64 institutions, of which 29 are state-operated campuses, five statutory colleges, including research universities, liberal arts colleges, specialized and technical colleges, health science centers, land-grant colleges, and 30 community colleges (SUNY, 2019). CUNY and SUNY are separate and independent systems, although both are public and funded by the State of New York. As of Fall 2017, SUNY and CUNY have a combined undergraduate enrollment in excess of 600,000 students (CUNY, 2019; SUNY, 2019). Within that total undergraduate enrollment, approximately 290,000 were enrolled in the 37 community colleges. Although conducting this study on both systems' overall undergraduate population would be ideal, a more accessible population was needed for the purposes of this study. Since almost half of the undergraduate enrollments for both systems are within the community colleges, I determined that it was reasonable to look at a single campus that serves a large student population.

Implementation of the Excelsior Scholarship Program for all State University of New York (SUNY and City University of New York (CUNY colleges began in Fall 2017 and as such was implemented at ILCC. For this reason, ILCC has been chosen, as it serves more than 17,000 students, of which approximately 250 receive Excelsior Scholarship

monies, less than 1.5% of its total credit-bearing student population. This study's findings were generalized to other SUNY community colleges, as other community colleges within SUNY serve very small percentages of Excelsior Scholarship recipients in relation to their overall enrollments.

### **Instruments**

The data needed for this study were extracted from ILCC's student information system. The student data used for this study includes cohorts of students from Fall 2017 and Fall 2018 who received Excelsior Scholarship monies and students with similar characteristics who did not receive Excelsior Scholarship monies for the Fall 2017 and Fall 2018 semesters. This study used both administrative records collected through the ILCC application and grading process, i.e., gender, race, previous college credit, high school GPA, and registration status, as well as secondary analysis of data collected through the Higher Education Services Corporation (HESC), which is charged with the administration of the Excelsior Scholarship Program. Data used for this study were requested through the Office of Institutional Effectiveness and Strategic Planning (OIESP). Since this office is the official source of reporting for the institution, it is permitted access to institutional files and those transmitted from the Higher Education Services Corporation (HESC) to ILCC. Data were collected through ILCC's Banner Student Information System, whereupon application, students enter demographic information, and grading information was recorded. Through the Student Information System's registration portion, student enrollment information was maintained. In addition, information from HESC was received in the form of a student data file (SDF), which contained student eligibility for Excelsior funding. Excelsior Scholarship applicants applied directly through the HESC website.

Upon application, income was verified by the state of New York. Upon verification of income that met the Excelsior Scholarship's limits, a file of eligible applicants was sent to the institution, and credit verification was performed. The purpose of the credit verification was to verify whether the student had any advanced standing credit or previous attendance where credit was earned. Once credit verification was completed, the institution returned the student data file to HESC, who then generated a contract for an electronic signature to the student outlining the conditions by which the scholarship is given and maintained. Once the signed contract was returned, the institution then received a student status listing (SSL) that is loaded into the student information system based on social security numbers.

### **What Is the Higher Education Services Corporation, and What Role Does It Play in Excelsior?**

HESC serves as the student financial aid agency for the state of New York. As such, HESC administers several significant state funding mechanisms such as the New York State Tuition Assistance Program (TAP) and other state-sponsored scholarships and loan forgiveness programs, including the Excelsior Scholarship Program. As a financial aid agency, HESC issues Reports and Financial Statements annually (HESC, n.d.). In addition, these monies are subject to financial audit by the New York State Office of the State Comptroller. The audit is conducted by the Division of State Government Accountability, which issues reports on programs administered by HESC, such as the November 2018 report regarding the STEM Incentive Program (New York State Office of the State Comptroller, 2018).

Implementation of the Excelsior Scholarship Program for all SUNY and CUNY colleges began in Fall 2017 and, as such, was implemented at ILCC. As of Fall 2018, the

the first year of the Excelsior Program has been concluded, and it is an appropriate time to review the retention of students who received the scholarship to see if its original intended effect in the promotion of on-time completion (graduation) is on track or in some cases has been met. Previous researchers, such as Gansemer-Topf and Schuh (2005), conducted similar research in studying the relationship between grants, retention, and graduation.

### **Procedures**

This study's data were from established data sources using secondary data analysis. Information regarding student demographics was obtained from either ILCC's information system or HESC. All data were provided from OIESP in an Excel spreadsheet containing the requested information and were loaded into SPSS version 28 for analysis.

### **Research Ethics**

Quantitative research comprises studies based on analyzing number-based data on either an experimental or non-experimental basis. Although non-experimental studies such as this one are less interactive, basic principles of ethics regarding voluntary participation, participant confidentiality and anonymity, and informed consent must be followed.

The National Institutes of Health (NIH) is committed to ensuring public trust through ethical research. This commitment is demonstrated by investment in the education of future researchers delivered through various training programs and initiatives (NIH, 2008). I have completed a web-based training course offered by the NIH in commitment to the ethical principles adhered to by this nationally recognized organization.

For this study, data were provided by a separate administrative office, the OIESP. The requested information was all third-party data and provided in an Excel spreadsheet

transmitted through a password-protected internal shared drive. No individually identifiable participant data were used.

## **Conclusion**

This study was designed to uncover the potential relationship between scholarship receipt and retention at the community college level. This was achieved by analyzing the impact of variables such as previous college credit, high school GPA based on a 100-point scale, SES defined by income level, gender, race, and aid type on retention. In addition, an analysis of the possibility of a predictive relationship between a single aid award type or a combination of award types on retention was conducted. Results of this study provided evidence that accurately assessed the true impact of these variables on student retention. This assessment lends itself to either supporting current institutional practices regarding the awarding of aid or leading to changes both institutionally and potentially within the community college sector.

## CHAPTER 4

This study used quantitative measures to investigate the potential relationship between scholarship receipt and student retention at a suburban community college. Guided by the work of R. Chen and St. John (2011), research was conducted on the predictive influence between tuition-free college policies, such as the New York State Excelsior Scholarship Program, and student retention. Specifics on the sample cohort can be found in Chapter 3. In addition, a summary of the sample cohort demographics can be found in Table 1.

**Table 1**

*Demographic Information of Student Cohort*

Demographic Characteristic	<i>n</i>	%
All	20,304	100%
Gender		
Non-male	9,520	47%
Male	10,784	53%
Ethnicity		
Non-White	13,195	65%
White	7,109	35%

**Research Question 1**

This research question compared financial aid students who were retained to those who were not retained on the pre-college demographics of previous college credit and high school GPA. To what extent did high school academic characteristics of community college students predict retention? Data for this study were evaluated prior to analysis and found to have a substantial amount of missing data, some 13%, for the independent

variable high school GPA. In order to avoid any bias, it was determined that multiple imputations were needed. Of the 20,304 records, 2,697 records were imputed. This imputation was performed using SPSS version 28 in order to create several complete data sets. These data sets produced output for each complete data set, plus pooled output that estimated what the results would have been if the original data set had no missing values. For the purposes of this study, the default value of 5 imputations was used.

A binary logistic regression analysis investigated to what extent high school academic characteristics of community college students predict retention. The predictor variable retention was tested a priori to verify there was no violation of the assumption of linearity of the logit. The predictor variable, retention, in the logistic regression analysis was found to contribute to the model. The unstandardized Beta weight for the Constant;  $B = .237$ ,  $SE = .059$ ,  $Wald = 16.297$ ,  $P < .001$ . The estimated odds ratio favored an increase of nearly 26.7% [ $Exp(B) = 1.267$ , 95% CI (1.130, 1.421)] for previous college credit every one unit increase of retention.

**Table 2**

***Results of Logistic Regression of Pre-College Demographics of Previous College Credit and High School Grade Point Average on Retention***

Independent Variables	N	B	S.E.	Wald	df	Sig.	Exp(B)	95% CI
GPA	20,304	0.000	0.000	.003	1	0.957	1.000	[1.000, 1.000]
Intl								
Baccalaureate Exam Scores	159	0.016	0.195	.007	1	0.934	1.016	[.694, 1.488]
AP Score	1,562	0.124	0.067	3.427	1	0.064	1.132	[.993, 1.291]
College Transcript HS	2,187	0.237	0.059	16.297	1	0.000***	1.267	[1.130, 1.421]
Constant		1.216	0.018	4477.368	1	0.000	3.373	[3.254, 3.494]

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

## Research Question 2

To what extent did the Excelsior Scholarship Program influence the retention of community college students, controlling for other student characteristics?

A logistic regression was conducted to determine which independent variables (participation in Excelsior, gender, race, SES by income level) are predictors of student retention. Regression results indicated that gender and participation in Excelsior were significant. The unstandardized Beta weight for the Constant;  $B = -.128$ ,  $SE = .034$ ,  $Wald = 14.056$ ,  $P < .001$ . The estimated odds ratio favored an increase of nearly 46.8% [ $Exp(B) = .880$ , 95% CI (.882, .941)] Non-male students are .880 times higher to retain. The unstandardized Beta weight for the Constant;  $B = .910$ ,  $SE = .151$ ,  $Wald = 36.440$ ,  $P < .001$ . The estimated odds ratio favored an increase of nearly 148.5% [ $Exp(B) = 2.485$ , 95% CI (1.849, 3.340)] students receiving Excelsior are 2.485 times more likely to retain.

**Table 3**

### *Results of Logistic Regression of Student Retention to Excelsior Scholarship Program*

Independent Variables	N	B	S.E.	Wald	df	Sig.	Exp(B)	95% CI
Gender	20,304 <sup>a</sup>	-0.128	0.034	14.056	1	0.000***	.880	[.822, .941]
Participation in Excelsior	474	0.910	0.151	36.440	1	0.000***	2.458	[1.849, 3.340]
Race	20,304 <sup>b</sup>	0.068	0.037	3.350	1	0.067	1.071	[.995, 1.152]
SES by income level	9,987	0.012	0.036	0.111	1	0.739	1.012	[.944, 1.085]
Constant		1.272	0.036	1255489	1	0.000	3.569	[3.326, 3.829]

<sup>a</sup> For the variable gender, male  $n = 10,784$  and non-male  $n = 9,520$ .

<sup>b</sup> For the variable race, White  $n = 13,195$  and non-White  $n = 7,109$ .

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

### Research Question 3

To what extent did aid type predict retention of the first-year, degree-seeking student?

The entering cohort financial aid students at ILCC were examined in the retained and not retained groups. The data of financial aid types included were Federal Pell Grants, New York State TAP, the New York State Excelsior Scholarship Program, and amounts for the 2017–2018 and 2018–2019 financial aid year were utilized. In addition, the dependent variable of student retention was measured dichotomously as retained or not retained for each entering cohort for Fall 2017 to Fall 2018 and Fall 2018 to Fall 2019.

The quantitative data of financial aid types for the 2017–2018 and 2018–2019 financial aid years were utilized. The financial aid awards for students included in this research were Federal Pell Grants, New York State TAP, and the New York State Excelsior Scholarship. The study examined financial aid students in the retained group or the not retained group for each entering cohort for Fall 2017 to Fall 2018 and Fall 2018 to Fall 2019.

Logistic regression was conducted to determine which financial award types (Federal Pell Grants, New York State TAP, and the New York State Excelsior Scholarship) were predictors of retention. Regression results indicated that the New York State Excelsior Scholarship and TAP were significant. The unstandardized Beta weight for the Constant;  $B = .661$ ,  $SE = .153$ ,  $Wald = 18.546$ ,  $P < .001$ . The estimated odds ratio favored an increase of nearly 93.6% [ $Exp(B) = 1.936$ , 95% CI (1.433, 2.615)] students receiving Excelsior Scholarship were 1.936 times more likely to retain. The

unstandardized Beta weight for the Constant;  $B = .440$ ,  $SE = .042$ ,  $Wald = 110.366$ ,  $P < .001$ . The estimated odds ratio favored an increase of nearly 60.8% [ $Exp(B) = 1.552$ , 95% CI (1.430, 1.685)] students receiving TAP were 1.552 times more likely to retain.

Regression coefficients are presented in Table 4.

**Table 4**

***Results of Logistic Regression of Student Retention Fall 2017 to Fall 2018 and Fall 2018 to Fall 2019 by Financial Aid Type***

Independent Variables	N	B	S.E.	Wald	df	Sig.	Exp( $\beta$ )	95% CI
Pell	9,952	-0.021	0.038	.302	1	0.583	0.979	[.908, 1.056]
TAP	7,437	0.440	0.042	110.366	1	0.000***	1.552	[1.430, 1.685]
Excelsior	474	0.661	0.153	18.546	1	0.000***	1.936	[1.433, 2.615]
Constant		1.099	0.024	2140.480	1	0.000	3.002	[2.865, 3.145]

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

Various types of financial aid, with varied requirements, are offered at both the state and federal level, each having a different effect on student retention (Mendez & Mendoza, 2008), yet college students leave institutions at a rate of 20–30% before completing their first year in college (DeBerard et al., 2004). For this reason, it is imperative to identify factors that may be influential in their decision-making. Financial consideration may lead individuals to choose a low-cost community college to lower the overall cost of degree attainment (Tinto, 1987).

This study addressed various factors that impact the retention of community college students. Several variables, including demographic characteristics, academic records, and financial aid, were analyzed as possible factors contributing to non-retention. A logistic analysis was completed to determine the relationship between tuition-free

college policies and student retention in the study. Based on the analyses conducted of institutional data, the researcher concluded that financial challenges and demographic characteristics were significant contributors to retention. This study showed that the attainment of pre-college credit, the Excelsior Scholarship Program for non-males, and the New York State TAP increased the odds of retention to the second semester.

## CHAPTER 5

Data provided by Integrated Postsecondary Education Data System (IPEDS) showed the full-time retention rate for ILCC, which was the basis for this study at 70% of full-time students who started in the Fall 2017 semester, and 65% of full-time students who began in Fall 2018, which would indicate losses of 30% and 35% respectively (NCES, 2021). According to the National Student Clearinghouse Research Center (2015), one out of every four community college students enrolled in Fall 2010 did not re-enroll for college the following semester. This statistic is disconcerting considering the estimated \$4 billion spent by federal, state, and local governments over 5 years on full-time community college students who did not persist after 1 year and left prior to obtaining any credential (Schneider & Yin, 2011).

This quantitative study investigated the potential relationship between scholarship receipt and student retention at a suburban community college, specifically the New York State Excelsior Scholarship Program. Using institutional data, pre-college demographics, and financial aid information, this study provided insight into the effect of tuition-free college policies on student retention at a suburban community college in New York. This chapter presents a summary of the study's major findings and the recommendations for higher education, particularly the community college sector, that these findings imply for tuition-free college policies.

### **Summary of Findings**

Findings from this study sought to answer if there was a predictive relationship between a single financial aid award type or a combination of financial aid award types on student retention through the examination of high school academic characteristics, the

Excelsior Scholarship Program, and various aid types of the first-year, degree-seeking student. Three key findings warrant discussion. The first finding was that prior college credit was a significant predictor of retention, which was consistent with prior research findings. This suggested that students who had previous college experiences delivered through dual enrollment retained at a rate 1.267 times higher. Findings relative to AP and IB programs were found not to be significant. In addition, high school GPA was not found to be a significant predictor.

Second, gender played a role in retention, specifically for non-male students that receive Excelsior Scholarship awards. Non-male students were 12% less likely to retain, and those receiving Excelsior were 2.485 times more likely to retain. These findings were inconsistent with previous research findings that suggested that men were more likely to persist than women when institutional aid was received. This may be due to inconsistencies reported in previous study findings and may have been due to the percentage of non-male students represented (46.9%) in this study which account for nearly half of the population in the study and that “non-male” included a variety of students’ identified genders. Also, contrary to previous findings, race and SES based on income level were not significant predictors of retention.

Finally, those students receiving an Excelsior Scholarship award were 1.936 times more likely to retain versus students receiving any other type of aid. This finding was consistent with prior research findings that grants were more effective than loans. Students receiving TAP were also more likely to retain at a rate of 1.552 times higher. Pell was found to be an insignificant predictor of retention, and this was consistent with

findings that suggested that Pell Grant recipients did not persist from their first to the second year of college (Schudde & Scott-Clayton, 2014).

Based on the statistical findings of this study, the Excelsior Scholarship Program, TAP, and previous college credit were strong predictors of retention, validating the interplay of multiple factors, including finances, in student retention. Although there were several significant findings in this study, several limitations should be noted.

First, this study was conducted on the New York State Excelsior Scholarship Program, which only began in Fall 2017. Data were therefore limited to two semesters of attendance. In addition, it was conducted using data from a large suburban community college. Since the program was relatively new within the state as of Fall 2017, initial reporting of data from community colleges within New York State may not have been consistent.

Another limitation to this study was the use of one community college's data for generalizability. Generalizability was used to make comparisons for the general population using findings from ILCC. A better representation would be had by expanding the sample size to include other community colleges within SUNY or CUNY. In addition, due to the small sample size, data on race were not disaggregated and coded as White and non-White, which could have impacted results.

Lastly, another limitation in this study was that the demographics of ILCC is such that there is a very limited non-traditional student population in attendance. It is for this reason that this study did not look at age as a variable for inclusion.

## **Discussion of Findings**

As proposed by R. Chen's conceptual model (2008), pre-college preparation and financial factors should be included in order to effectively evaluate the potential effects of tuition-free college policies and student retention. These findings were consistent with those of DesJardins et al. (2002) and R. Chen and St. John (2011). DesJardins et al. found no relationship between grants and persistence but did find a relationship between scholarships and persistence. In general, merit-based aid had a greater effect on student dropout rates over time in comparison to loan aid. On a positive note, findings indicated that students with previous college credit were more likely to graduate at a rate of 11% higher than those with no previous college experience. Research conducted by Downing showed a significant difference in student retention based on receipt of financial aid in comparison to those who did not receive aid.

Research conducted by R. Chen and St. John (2011) concluded that state need-aid and persistence were related at a ratio of 2 to 1, with every 1% increase in state need-based aid relating to a 2% increase in the odds of persistence. These findings emphasized the need to look at the relationship between aid and tuition and the relationship of each of these factors to persistence. Higher tuition without comparable increases in aid could lead to lower persistence and higher dropout rates.

Previous college credit opportunities often made available through credit-based transition programs such as AP, IB , and dual enrollment provided retention rates that were higher for those who have participated (Bailey & Karp, 2003). These findings were further supported by a study conducted by Kleiner and Lewis (2005), which indicated that these types of college credit programs enhance retention and provide adeptness in

learning. As per Karp et al. (2007), participants in dual enrollment exhibited not only higher persistence but also higher grade point averages.

### **Implications for Research**

The possibilities for further research are numerous, but a few important areas of question still remain. This study did not include data from Fall 2019 and Fall 2020 due to the pandemic that drove higher education institutions across the country to a fully remote environment. One avenue for future research would be to expand data to include those cohorts and compare pre- and post-COVID data to see if the effects of Excelsior remain consistent regardless of institutional changes made in response to the pandemic. Results of this research could lead to the additional support of R. Chen's (2008) work which included factors such as college experience, institutional characteristics, and interaction effect.

A second recommendation for future research would be to investigate if the amount of a last-dollar scholarship affects retention. Prior research suggested that increases in aid to non-needy students attending college are related to increased retention (Olbrecht et al., 2016).

A third recommendation would be to expand the student sample size to include comparable data from another state that offers a last-dollar scholarship. Collecting additional student data from other states would allow for a more comprehensive analysis of student demographics. This would allow for results to be more generalizable not only with New York State but within the community college sector.

The final recommendation would be to disaggregate the data in order to focus research on race and SES. For example, did students of a specific race and income level

benefit from last-dollar type scholarship monies and retain at a higher rate? This type of disaggregation would allow for a better understanding of how monies could be used to improve equity through increased access, resulting in larger completion percentages.

### **Implications for Practice**

Based on the results of this study, several recommendations can be made both to the institution and to the state. The first institutional recommendation is to increase access and award of the Excelsior Scholarship through increased FAFSA applications. This can be accomplished by increasing the number of and attendance at on- and off-campus workshops in an effort to increase financial literacy. In addition, workshops can be specifically designed for students based on institutional demographic information such as race or gender.

Another recommendation would be to create institutional forms of last-dollar scholarship awards based on criteria different from those of the Excelsior Scholarship Program so that more students may be eligible. For example, Excelsior requires a combined federal adjusted gross income of \$125,000 or less. That income limit could be increased annually based on a cost-of-living adjustment (COLA) similar to that used by the federal government to calculate increases to Social Security and Supplemental Security Income payments in an effort to reduce the effects of inflation. In addition, the Excelsior Scholarship covers any remaining tuition expenses up to \$5,500. This cap could be increased on an annual basis based on institutional tuition increases.

The first recommendation for state policy change would be to revamp Excelsior in its current form to a more inclusive program. New York State took the lead on assisting middle-income families when they introduced the Excelsior Scholarship Program. Not

only did this scholarship allow middle-income families access to grant funds not previously attainable, but it promoted on-time completion and potentially reduced loan dependency. It allowed for this population to attend full-time rather than part-time to budget their personal expenses and the cost of tuition, but this is also part of what needs to be changed. Many students who choose to attend community college are not full-time, which then causes ineligibility for Excelsior. Personal expenses are also an issue since Excelsior is structured as a “last-dollar” award for tuition only and does not cover books, transportation, and housing expenses.

A second recommendation would be to extend the application period. Many students make last-minute decisions to attend college. Unfortunately, because they have not planned in advance to attend, they often miss the application deadline for the Excelsior Scholarship Program. The small window of application opportunity has prevented them from benefiting from this award and, in many cases, delayed their decision to start college because they cannot otherwise pay out of pocket for a semester. extending the application period would assist this population.

A final recommendation would be to change the certification of eligibility rules. A student that is full-time but whose credit load includes remedial credits must be decertified for Excelsior. This decertification causes students not to be eligible for the reduced tuition rate, which is based on the 2016–2017 resident tuition rate charged by SUNY or CUNY. Why must colleges wait until the end of a semester to certify these students? If a student is eligible and is certified, monies can be disbursed to the student’s account. Because certification is delayed, the student’s record shows an outstanding balance and can prevent a student from enrolling for the following semester.

## **Conclusion**

Although financial aid awards have increased for community college students, retention continues to be a concern at 2-year degree-granting institutions (Hussar et al., 2020). Using available scholarship funds to support student retention is crucial to the survival of higher education, especially in support of traditionally underrepresented students served by community colleges. Previous literature regarding financial aid effects on retention at the associate degree level was limited. Using data from a suburban New York State community college, this study contributed to the limited existing body of literature on student retention by expanding the perspective that state-sponsored, last-dollar scholarship aid such as Excelsior does contribute to retention. It concluded that not only does it play a role in retention, but specifically for non-male students that receive Excelsior Scholarship awards. Based on these results, community college administrators, especially those involved in issuing financial aid, must continue to explore methods to increase student awareness of the availability of these funds and seek ways to close gaps in equity and access to promote student retention.

The New York State Excelsior Scholarship Program is just one example of a last-dollar scholarship that can be used to equalize access and completion in higher education. Community colleges must continue their quest to fulfill their mission and support diverse student populations with increasing financial burdens. States such as New York, who have initiated their own form of scholarship aid, support that effort in allowing community colleges to play a vital role in student success.

## APPENDIX A

### IRB Approval Memo



Federal Wide Assurance: FWA00009066

Jun 2, 2021 10:54:47 AM EDT

PI: Maria Conzatti

CO-PI: Katherine Aquino

Dept: Users loaded with unmatched Organization affiliation., Ed Admin & Instruc Leadership

Re: Initial - IRB-FY2021-481 *TUITION FREE COLLEGE AND RETENTION: A QUANTITATIVE ANALYSIS OF THE NEW YORK STATE EXCELSIOR SCHOLARSHIP PROGRAM*

Dear Maria Conzatti:

The St John's University Institutional Review Board has rendered the decision below for *TUITION FREE COLLEGE AND RETENTION: A QUANTITATIVE ANALYSIS OF THE NEW YORK STATE EXCELSIOR SCHOLARSHIP PROGRAM*.

Decision: Exempt

PLEASE NOTE: If you have collected any data prior to this approval date, the data must be discarded.

Selected Category: Category 4. Secondary research for which consent is not required: Secondary research uses of identifiable private information or identifiable biospecimens, if at least one of the following criteria is met:

- (i) The identifiable private information or identifiable biospecimens are publicly available;
- (ii) Information, which may include information about biospecimens, is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained directly or through identifiers linked to the subjects, the investigator does not contact the subjects, and the investigator will not re-identify subjects;
- (iii) The research involves only information collection and analysis involving the investigator's use of identifiable health information when that use is regulated under 45 CFR parts 160 and 164, subparts A and E, for the purposes of "health care operations" or "research" as those terms are defined at 45 CFR 164.501 or for "public health activities and purposes" as described under

45 CFR 164.512(b); or

(iv) The research is conducted by, or on behalf of, a Federal department or agency using government-generated or government-collected information obtained for nonresearch activities, if the research generates identifiable private information that is or will be maintained on information technology that is subject to and in compliance with section 208(b) of the E-Government Act of 2002, 44 U.S.C. 3501 note, if all of the identifiable private information collected, used, or generated as part of the activity will be maintained in systems of records subject to the Privacy Act of 1974, 5 U.S.C. 552a, and, if applicable, the information used in the research was collected subject to the Paperwork Reduction Act of 1995, 44 U.S.C. 3501 et seq.

Sincerely,

Raymond DiGiuseppe, PhD, ABPP  
Chair, Institutional Review Board  
Professor of Psychology

Marie Nitopi, Ed.D.  
IRB Coordinator

## APPENDIX B

### Variables Utilized in Research Analysis

Variable Name	Label	Descriptive Statistics	Description
GENDER	Gender	0:non-male 1:male	Variable indicates the applicant's gender
IPEDS	IPEDS	0:White 1:non-White	Variable indicates the applicant's race
GPA	GPA	0 -100	Variable indicates the final high school grade point average as reported on the high school record
APScoreOfficial	APScoreOfficial	0: Non-AP 1: AP-Advanced Placement	Variable indicates previous AP credit earned during high school by applicant
IntBaccalaureate ExamScores	IntBaccalaureate ExamScores	0: Non-IntlBacc 1: IntlBacc	Variable indicates previous IB credit earned during high school by applicant
College Transcript-High School	College Transcript-High School	0: Non CollegeTranscript 1: CollegeTranscript	Variable indicates previous dual enrollment credit earned during high school by applicant

<b>Variable Name</b>	<b>Label</b>	<b>Descriptive Statistics</b>	<b>Description</b>
FederalPellGrantPaid1	FederalPellGrantPaid1	0: Non Pell Paid 1: Pell Paid	Variable indicates Pell aid received for the academic year
NYSTAPGrantPaid1	NYSTAPGrantPaid1	0:No TAP Paid 1: TAP Paid	Variable indicates TAP received for the academic year
ExcelsiorScholarshipPaid1	ExcelsiorScholarshipPaid1	0: Non Excelsior Paid 1: Excelsior Paid	Variable indicates Excelsior Scholarship received for the academic year
SOBYSDS_PELLYes1No0	SOBYSDS_PELLYes1No0	0: No Pell 1:Pell	Variable indicates eligibility for Pell based on income level as per the FAFSA application
Returning_in_Spring	Returning_in_Spring	0: Not returned 1: Returned	Variable indicates student retention per spring enrollment. This variable is the dependent variable.

## REFERENCES

- Adelman, C. (1999). *Answers in the toolbox: Academic intensity, attendance patterns, and bachelor's degree attainment*. U.S. Department of Education.  
<http://www.ed.gov/pubs/Toolbox/toolbox.html>
- Aljohani, O. (2016). A comprehensive review of the major studies and theoretical models of student retention in higher education. *Higher Education Studies*, 6(2), 1–18.
- Allensworth, E. M., & Clark, K. (2020). High school GPAs and ACT scores as predictors of college completion: Examining assumptions about consistency across high schools. *Educational Researcher*, 49(3), 198–211.  
<https://doi.org/10.3102/0013189X20902110>
- Astin, A. W. (1993). *What matters in college: Four critical years revisited*. Jossey-Bass.
- Bailey, T., & Karp, M. (2003). *Promoting college access and success: A review of credit-based transition programs*. U.S. Department of Education, Office of Vocational and Adult Education.
- Bailey, T., Alfonso, M., Calcagno, J. C., Jenkins, D., Kienzl, G., & Leinbach, T. (2004). *Improving student attainment in community colleges: Institutional characteristics and policies*. Community College Research Center. <http://files.eric.ed.gov/fulltext/ED484346.pdf>
- Bean, J. P. (1980). Dropouts and turnover: The synthesis and test of a causal model of student attrition. *Research in Higher Education*, 12, 155–187.
- Bean, J. P. (1981, April 13–17). *The synthesis of a theoretical model of student attrition* [Conference presentation]. Annual Meeting of the American Educational

Research Association, Los Angeles, CA, United States.

<https://files.eric.ed.gov/fulltext/ED202444.pdf>

- Bean, J. P. (1982). Student attrition, intentions, and confidence: Interaction effects in a path model. *Research in Higher Education*, 17(4), 291–319.
- Bean, J. P. (1985). Interaction effects based on class level in an exploratory model of college student dropout syndrome. *American Educational Research Journal*, 22(1), 35–64.
- Bean, J. P. (1990). Why students leave: Insights from research. In D. Hossler & J. P. Bean (Eds.), *The strategic management of college enrollments*. Jossey-Bass.
- Bean, J. P., & Metzner, B. S. (1985). A conceptual model of nontraditional student attrition. *Review of Educational Research*, 55(4), 485–540.
- <https://doi.org/10.3102/00346543055004485>
- Berger, J. B., & Milem, J. F. (2000). Organizational behavior in higher education and student outcomes. In J. Smart (Ed.), *Higher education: Handbook of theory and research* (Vol. 15, pp. 268–338). Agathon.
- Bowen, S., Chawla, N., Collins, S. E., Witkiewitz, K., Hsu, S., Grow, J., Clifasefi, S., Garner, M., Douglass, A., Larimer, M. E., & Marlatt, A. (2009). Mindfulness-based relapse prevention for substance use disorders: A pilot efficacy trial. *Substance Abuse*, 30(4), 295–305.
- Braxton, J. (2000). *Reworking the student departure puzzle*. Vanderbilt University Press.
- Braxton, J. M., Johnson, R. M., & Shaw-Sullivan, A. C. (1997). Appraising Tinto's theory of college student departure. In J. C. Smart (Ed.), *Higher education: Handbook of theory and research* (Vol. 12). Agathon Press.

- Braxton, J., & Hirschy, A. (2005). Theoretical developments in the study of college student departure. In A. Seidman (Ed.), *College student retention: Formula for student success*. ACE/Praeger.
- Brooks, D. (2016). *The effect of financial aid on community college student retention* (Publication No. 10247112) [Doctoral dissertation, Wingate University]. ProQuest Dissertations Publishing.
- Cabrera, A. F., Nora, A., & Castaneda, M. B. (1992). The role of finances in the persistence process: A structural model. *Research in Higher Education*, 33(5), 571–593. <http://files.eric.ed.gov/fulltext/ED345599.pdf>
- Cabrera, A. F., Nora, A., & Castaneda, M. B. (1993). College persistence: Structural equations modeling test of an integrated model of student retention. *Journal of Higher Education*, 64(2), 123–139.
- Cass, J. (2010). *Held captive: Child poverty in America. A children's defense fund report*. Children's Defense Fund.
- The Century Foundation. (2019, April). *How can federal policymakers provide community colleges the resources they need?* <https://tcf.org/content/facts/can-federal-policymakers-provide-community-colleges-resources-need/>
- Chen, G. (2020, June 15). Re: The catch-22 of community college graduation rates. *Community College Review*. <https://www.communitycollegereview.com/blog/the-catch-22-of-community-college-graduation-rates>
- Chen, R. (2008). Financial aid and student dropouts in higher education: A heterogeneous research approach. In J. C. Smart (Ed.), *Higher education: Handbook of theory and research* (Vol. 23, pp. 209–240). Springer.

- Chen, R., & DesJardins, S. (2008). Exploring the effects of financial aid on the gap in student dropout risks by income level. *Research in Higher Education, 49*(1), 1–18.
- Chen, R., & DesJardins, S. (2010). Investigating the impact of financial aid on student dropout risks: Racial and ethnic differences. *The Journal of Higher Education, 81*, 179–208.
- Chen, R., & St. John, E. P. (2011). State financial policies and college student persistence: A national study. *Journal of Higher Education, 82*(5), 629–660.
- City University of New York (CUNY). (2019). About.  
<http://www2.cuny.edu/about/administration/offices/oira/institutional/data/current-student-data-book-by-subject/#Enrollment>
- Cokluk, O. (2010). Logistic regression: Concept and application. *Educational Sciences: Theory and Practice, 10*(3), 1397–1407.
- Crissman Ishler, J., & Upcraft, L. (2005). *The keys to first-year student persistence*. In M. L. Upcraft, J. N. Gardner, & B. O. Barefoot (Eds.), *Challenging & supporting the first-year student: A handbook for improving the first year of college* (pp. 27–46). Jossey-Bass.
- Crook, C. (2014). Educating America's homeless youth through reinforcement of the McKinney Vento Homeless Assistance Act. *Faulkner Law Review, 6*, 395–408.
- Crosta, P. M. (2013). *Characteristics of early community college dropouts*. Community College Research Center: Columbia University.

- Cuseo, J. (2014). Student success: Definition, outcomes, principles and practices. *The Big Picture: Esource for College Transitions*.  
[www.indstate.edu/studentsuccess/pdf/Defining Student Success.pdf](http://www.indstate.edu/studentsuccess/pdf/Defining Student Success.pdf)
- Daft, R. (2009). *Organization theory and design* (10th ed). Cengage Learning.
- DeBerard, M. S., Spielmans, G. I., & Julka, D. L. (2004). Predictors of academic achievement and retention among college freshmen: A longitudinal study. *College Student Journal*, 38(1), 66.
- DesJardins, S., Ahlburg, D., & McCall, B. (2002). A temporal investigation of factors related to timely degree completion. *The Journal of Higher Education*, 73(5), 555–581.
- Dowd, A. C., & Coury, T. (2006). The effects of loans on the persistence and attainment of community college students. *Research in Higher Education*, 47(1), 33–62.
- Downing, R. C. (2008). *The relationship between financial aid and the retention of first-time community college students* (Publication No. 304813841) [Doctoral dissertation, Capella University]. ProQuest Dissertations & Theses Global.
- Dynarski, S. M., & Clayton, J. S. (2006). *The cost of complexity in federal student aid: Lessons from optimal tax theory and behavioral economics* (NBER Working Paper Series).
- Farrington, R. (2020, March 25). These states offer tuition-free community college. *Forbes*. <https://www.forbes.com/sites/robertfarrington/2020/03/25/these-states-offer-tuition-free-community-college/?sh=eaf56d014cfa>
- Fike, D. S., & Fike, R. (2008). Predictors of first-year student retention in the community college. *Community College Review*, 36(2), 68–88.

- Foster, L. K. (2010). *Estimating California's homeless youth population*. San Francisco, CA, California Homeless Youth Project.
- Fuller, M. B. (2014). A history of financial aid to students. *Journal of Student Financial Aid*, 44(1). <https://ir.library.louisville.edu/jsfa/vol44/iss1/4>
- Gansemer-Topf, A., & Schuh, J. (2005). Institutional grants: Investigating student retention and graduation. *Journal of Student Aid*, 35(3), 5–20.
- Goldrick-Rab, S., Broton, K., & Gates, C. (2013). *Clearing the path to a brighter future: Addressing barriers to community college access and success*. Association of Community College Trustees.
- Gross, J. P. K., Hossler, D., & Ziskin, M. (2007). Institutional aid and student persistence: An analysis of the effects of institutional financial aid at public four-year institutions. *NASFAA Journal of Student Financial Aid*, 37(1), 28–39.
- Gross, L., & Meriwether, J. L. (2016). Student engagement through digital data. *New Directions for Student Services*, 2016(155), 75–89.  
<https://doi.org/10.1002/ss.20184>
- Hagedorn, L. S. (2005). How to define retention: A new look at an old problem. In A. Seidman (Ed.), *College retention: Formula for student success* (pp. 89–106). ACE/Praeger.
- Heller, D. E. (1997). Student price response in higher education: An update to Leslie and Brinkman. *The Journal of Higher Education*, 68, 624–659.
- Hernandez, K. A. (2014). *Community college mission statements in an era of the new community college baccalaureate* [Doctoral dissertation, University of Miami]. University of Miami Libraries.

<https://scholarship.miami.edu/esploro/outputs/doctoral/Community-College-Mission-Statements-in-an/991031447709902976>

Higher Education Services Corporation (HESC). (n.d.). *News*.

<https://www.hesc.ny.gov/hesc-news.html>

Hiss, W. C., and Franks, V. W. (2014). *Defining promise: Optional standardized testing policies in American college and university admissions*. The National Association for College Admission Counseling.

Hoyt, J. E., & Sorensen, C. T. (2001). High school preparation, placement testing, and college remediation. *Journal of Developmental Education*, 25, 26–34.

Hu, S., & St. John, E. P. (2001). Student persistence in a public higher education system: Understanding racial and ethnic differences. *The Journal of Higher Education*, 72(3), 265–286.

Hussar, B., Zhang, J., Hein, S., Wang, K., Roberts, A., Cui, J., Smith, M., Bullock Mann, F., Barmer, A., & Dilig, R. (2020). *The condition of education 2020* (NCES 2020-144). U.S. Department of Education, National Center for Education Statistics.

Immerwahr, J. (2004). *Public attitudes toward higher education: A trend analysis, 1993–2003*. National Center for Public Policy and Higher Education.

Jacobs, J. (1996). Gender inequality and higher education. *Annual Review of Sociology*, 22, 153–185. <http://www.jstor.org/stable/2083428>

Jakobsen, J. C., Gluud, C., Wetterslev, J., & Winkel, P. (2017). When and how should multiple imputation be used for handling missing data in randomised clinical trials – a practical guide with flowcharts. *BMC Medical Research Methodology*, 17. <https://doi.org/10.1186/s12874-017-0442-1>

- Juszkiewicz, J. (2014). *Community college students and federal student financial aid: A primer*. American Association of Community Colleges.
- Kahlenberg, R. D., Shireman, R., Quick, K., & Habash, T. (2018). *Policy strategies for pursuing adequate funding of community colleges*. The Century Foundation.  
<https://tcf.org/content/report/policy-strategies-pursuing-adequate-funding-community-colleges/?agreed=1>
- Karp, M. M., Calcagno, J. C., Hughes, L. H., Jeong, D. W., & Bailey, T. R. (2007). *The postsecondary achievement of participants in dual enrollment: An analysis of student outcomes in two states*. National Research Center for Career and Technical Education, University of Minnesota.
- Kelchen, R. (2018). *Higher education accountability*. Johns Hopkins University Press.
- Kibuuka, H. E. (2001). Vision and mission statements in Christian higher educational management in Eastern Africa. *Journal of Research in Christina Education*, 10, 87–114.
- Kleiner, B., & Lewis, L. (2005). *Dual enrollment of high school students at postsecondary institutions: 2002–03*. National Center for Education Statistics, U.S. Department of Education.
- Kuh, G. D. (2005). Student engagement in the first year of college. In M. L. Upcraft, J. N. Gardner, & B. O. Barefoot (Eds.), *Challenging and supporting the first-year student: A handbook for improving the first year of college* (pp. 86–107). Jossey-Bass.
- Kuh, G. D. (2008). *High-impact educational practices: What they are, who has access to them, and why they matter*. Association and American Colleges and Universities.

- Ladson-Billings, G., & Tate, W. (1995). Toward a critical race theory of education. *Teachers College Record*, 97, 47–68.
- Leppel, K. (2002). Similarities and differences in the college persistence of men and women. *The Review of Higher Education*, 25, 433–450.
- Leslie, L. L., & Brinkman, P. T. (1987). Student price response in higher education: The student demand studies. *The Journal of Higher Education*, 58, 181–204.
- Levine, A., & Dean, D. R. (2012). *Generation on a tightrope: A portrait of today's college student*. Wiley.
- Manyanga, F., Sithole, A., & Hanson, S. M. (2017). Comparison of student retention models in undergraduate education from the past eight decades. *Journal of Applied Learning in Higher Education*, 7, 30–42.
- McNeish, D. (2017). Missing data methods for arbitrary missingness with small samples. *Journal of Applied Statistics*, 44(1), 24–39.
- Mendez, J. P., & Mendoza, P. (2008). The impact of financial aid formulas on African American student retention. *National Association of Student Affairs Professionals Journal*, 11(1).
- Mendoza, P., Mendez, J. P., & Malcolm, Z. (2009). Financial aid and persistence in community colleges: Assessing the effectiveness of federal and state financial aid programs in Oklahoma. *Community College Review*, 37(2), 112–135.
- Milner, H. R. (2013). Analyzing poverty, learning, and teaching through a critical race theory lens. *Review of Research in Education*, 37(1), 1–53.
- Mitchell, M., Palacios, V., & Leachman, M. (2014). *States are still funding higher education below pre-recession levels*. Center on Budget and Policy Priorities.

[http://www.marshall.edu/2020/files/05-01-14\\_CENTER-on-BUDGET-and-POLICYPRIORITIES-STATES-ARE-STILL-FUNDING-HE-BELOW-PRE-RECESSIONLEVELS.pdf](http://www.marshall.edu/2020/files/05-01-14_CENTER-on-BUDGET-and-POLICYPRIORITIES-STATES-ARE-STILL-FUNDING-HE-BELOW-PRE-RECESSIONLEVELS.pdf)

Murdock, T. A. (1989). Does financial aid really have an effect on student retention? *Journal of Student Financial Aid*, 19(1).

National Center for Education Statistics. (2015, May). *Postsecondary attainment: Differences by socioeconomic status*.

[https://nces.ed.gov/programs/coe/indicator\\_tva.asp](https://nces.ed.gov/programs/coe/indicator_tva.asp)

National Center for Education Statistics. (2021). *IPEDS data collection system (2017–2018)*.

National Center for Public Policy and Higher Education. (2002, May). *Losing ground: A national status report on the affordability of American higher education*. Author.

National Institutes of Health. (2008). Guidance on NIH office of extramural research (OER) on-line tutorial protecting human research participants (PHRP).

<http://grants.nih.gov/grants/guide/notice-files/NOT-OD-08-054.html>.

National Student Clearinghouse: Research Center. (2015). *Signature report: Completing college: A national view of student attainment rate: Fall 2009 cohort*.

<https://nscresearchcenter.org/>

New York State Office of the State Comptroller. (2018). *Oversight of the STEM incentive program* (Report 2017-S-75). <https://osc.state.ny.us/audits/allaudits/093019/sga-2019-17s75.pdf>

Newsom, W. A., & Hayes, C. R. (1991). Are mission statements worthwhile? *Planning for Higher Education*, 19, 28–31.

- O'Banion, T. (2010, August 16). To what end. *Inside Higher Ed*. <http://ht.ly/2qcu6>
- Olbrecht, A., Romano, C., & Teigen, J. (2016). How money helps keep students in college: The relationship between family finances, merit-based aid, and retention in higher education. *Journal of Student Financial Aid*, 46(1), 2–16.
- Pascarella, E. T. (1980). Student-Faculty informal contact and college outcomes. *Review of Educational Research*, 50(4), 545–595.
- Pascarella, E. T., & Terenzini, P. (1991). *How college affects students*. Jossey-Bass.
- Pascarella, E. T., & Terenzini, P. T. (1976). Informal interaction with faculty and freshman ratings of academic and non-academic experience of college. *Journal of Educational Research*, 70(1), 35–41.
- Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students: A third decade of research* (2nd ed.). Jossey-Bass.
- Pascarella, E. T., Terenzini, P. T., & Wolfle, L. M. (1986). Orientation to college and freshman year persistence/withdrawal decisions. *Journal of Higher Education*, 57(2), 155–175.
- Pearce, J. A., & David, F. (1987). Corporate mission statements: The bottom line. *Academy of Management Executive*, 1, 109–115.
- Peltier, G. L., Laden, R., & Matranga, M. (2000). Student persistence in college: A review of research. *Journal of College Student Retention: Research, Theory & Practice*, 1(4), 357–375.
- Penn, D., & Kyle, R. (2007). *The Tennessee education lottery scholarship: A reward for past achievement or motivator for future performance?* Mimeo: Middle Tennessee State University.

- Perna, L. W. (1998). Does financial aid help students to attend higher priced colleges? *Journal of Student Financial Aid*, 28(1), 19–38.  
[https://repository.upenn.edu/gse\\_pubs/288/](https://repository.upenn.edu/gse_pubs/288/)
- Rahman, M. A., Turner, J. F., & Elbedour, S. (2015). The US homeless student population: Homeless youth education, review of research classifications and typologies, and the US federal legislative response. *Child & Youth Care Forum*, 44(5), 687–709.
- Reason, R. D. (2009). An examination of persistence research through the lens of a comprehensive conceptual framework. *Journal of College Student Development*, 50(6), 659–682.
- Schneider, M., & Yin, L. (2011). *The hidden costs of community colleges*. American Institute for Research. [http://www.air.org/sites/default/files/downloads/report/AIR\\_Hidden\\_Costs\\_of\\_Community\\_Colleges\\_Oct2011\\_0.pdf](http://www.air.org/sites/default/files/downloads/report/AIR_Hidden_Costs_of_Community_Colleges_Oct2011_0.pdf)
- Schudde, L., & Scott-Clayton, J. (2014, December). *Pell Grants as performance-based aid? An examination of satisfactory academic requirements in the nation's largest need-based program* (A CAPSEE Working Paper). Community College Research Center. <http://capseecenter.org/wp-content/uploads/downloads/2014/12/pell-grants-asperformance-based-aid.pdf>
- Scurry, J. E. (2003). *Access and achievement building block: Making the case for all to achieve*. Brown University, A. Alfred Taubman Center for Public Policy and American Institutions.
- Seidman, A. (Ed.). (2005). *College student retention: Formula for student success*. ACE/Praeger.

- Singell, L. D. (2003). Come and stay awhile: Does financial aid effect enrollment and retention at a large public university? *Economics of Education Review*, 23, 459–472.
- Spady, W. G. (1970). Dropouts from higher education: An Interdisciplinary Review and Synthesis. *Interchange*, 1(1), 64–85.
- Spady, W. G. (1971). Dropouts from higher education: Toward an empirical model. *Interchange*, 2(3), 38–62.
- St. John, E. P. (2006). *Education and the public interest: Education reform, public finance, and access to higher education*. Springer.
- Stage, F. K. (1989). Motivation, academic and social integration, and the early dropout. *American Educational Research Journal*, 26(3), 385–402.  
<https://doi.org/10.3102/00028312026003385>
- State University of New York (SUNY). (2019). *About*. <https://www.suny.edu/about/>
- Stoltzfus, J. (2011). Logistic regression: a brief primer. *Academic Emergency Medicine: Official Journal of the Society for Academic Emergency Medicine*, 18(10), 1099–1104. <https://doi.org/10.1111/j.1553-2712.2011.01185.x>
- Swail, W. S. (1995). *The development of a conceptual framework to increase student retention in science, engineering, and mathematics programs at minority institutions of higher education* [Doctoral dissertation, George Washington University]. <https://files.eric.ed.gov/fulltext/ED396921.pdf>
- Swaner, L. E., & Brownell, J.E. (2008). *Outcomes of high impact practices for underserved students: A review of the literature*. Association of American Colleges and Universities.

- Tinto, V. (1975). Dropouts from higher education: A theoretical synthesis of recent research. *Review of Educational Research*, 45(1), 89–125.
- Tinto, V. (1982). Defining dropout: A matter of perspective. *New Directions for Institutional Research*, 36, 3–15. <https://doi.org/10.1002/ir.37019823603>
- Tinto, V. (1987). *Leaving college: Rethinking the causes and cures of student attrition* (1st ed.). University of Chicago Press.
- Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). Chicago University Press.
- Tinto, V. (1999). Taking retention seriously: Rethinking the first year of college. *NACADA Journal*, 19(2), 5–9.
- Tinto, V. (2004). *Student retention and graduation: Facing the truth, living with the consequences*. The Pell Institute.
- Tinto, V. (2012). *Completing college: Rethinking institutional action*. University of Chicago Press.
- U.S. Department of Education. (n.d.-a). *College affordability and completion: Ensuring a pathway to opportunity*. <https://www.ed.gov/college>
- U.S. Department of Education. (n.d.-b). *College scorecard*. <https://collegescorecard.ed.gov/>.
- Vaughan, G. B. (1985). *The community college in America: A short history* (Revised ed.). American Association of Community and Junior Colleges. <https://files.eric.ed.gov/fulltext/ED255267.pdf>

- Weidman, J. C. (1989). Undergraduate socialization: a conceptual approach. In J. C. Smart (Ed.), *Higher education: Handbook of theory and research*. (Vol. V, pp. 289–322). Agathon Press.
- Welch, J. (2014). HOPE for community college students: The impact of merit aid on persistence, graduation, and earnings. *Economics of Education Review*, 43(2014), 1–20.
- Wheelen, T. L., & Hunger, J. D. (2000). *Strategic management*. Prentice-Hall.

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