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**ATTENDING A SECOND- OR LATER-CHOICE COLLEGE:**

**CONNECTIONS WITH PERSISTENCE**

A Dissertation in

Higher Education

by

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## ABSTRACT

Enrollments in postsecondary education have climbed steadily for more than 20 years. However, during this same time period, students enrolled in their school of first-choice in decreasing numbers. In fact, slightly more than 55% indicated they enrolled at their first-choice college in 2013 (Eagan, Lozano, Hurtado, & Case, 2013). Thus, more students are attending institutions where they did not, at least originally, plan to attend. This raises numerous questions for students, researchers, and administrators, and served as the impetus for this study. This dissertation investigated five separate research questions regarding the connections of attending a second- or later-choice college with student persistence and grade point average (GPA). Two separate research methodologies were employed - a qualitative analysis using focus groups with students who re-enrolled at a second- or later-choice college and a quantitative analysis of CIRP – The Freshman Survey responses.

The study was conducted at a mid-size, open-admissions institution in the northeast portion of the United States. The institution offers more than 125 programs leading to certificate's, associate's, and bachelor's degrees in the technical fields. A qualitative analysis uncovered a fledging framework that contributes to our overall understandings of the re-enrollment decision process for students at a second- or later-choice college. Focus group responses also revealed two significant motivators of re-enrollment – barriers to leaving and expected outcomes – that were previously not discussed in mainstream research. Finally, findings raised numerous questions concerning the concept of “first choice”. A quantitative analysis, using a different

sample from the same institution, found no significant statistical differences between students at a first-choice college versus those at a second- or later-choice college in fall-to-fall retention, fall-to-spring retention, and grade point average. Implications for research, theory, public policy, and practice are discussed.

Keywords: persistence, retention, college choice, safety school, first-choice, later-choice, barriers, transfer

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## CHAPTER 1: INTRODUCTION

The decision to enroll in postsecondary education, and at which specific institution, can be perplexing. Students not only undertake a lengthy consideration of determining if college is beneficial for them, but also develop a set of features they desire in each potential institution. Costs, institutional reputation, location, the social environment, technology, and the student's own personal characteristics all intermingle to influence the way students perceive and select a college or university (Hossler, Braxton, & Coppersmith, 1989; St. John, Paulsen, & Starkey, 1996).

While postsecondary enrollments have increased significantly in recent decades, and the amount of applications skyrocketed, the number of students attending their first-choice college has declined dramatically. In 2000, 70.6% of students initially enrolled in their first-choice institution (Sax, Astin, Korn, & Mahoney, 2000). In 2013, only 56.9% of students enrolled at their first-choice college, marking the lowest proportion of students enrolled in their first-choice institution since the Cooperative Institutional Research Program began asking the question in 1974 (Eagan, Lozano, Hurtado, & Case, 2013). Thus, more students are attending institutions where they did not, at least originally, plan to attend. This raises numerous questions for students and administrators at institutions, including: *If a student already has settled for a second-choice college, would they be less motivated to remain enrolled at this institution? What factors influence positive retention of these students? Is there a difference in academic attainment between students who attend their first-choice college versus a second-choice? Is a student at a second-choice institution more likely to transfer?*

Although the number of students attending second- or later-choice institutions is rising, little research has focused on the impact of attending a less than first-choice college on such factors as student retention rates or the experiences of these students. Using data from a mid-size, open admissions institution in the northeast region, this dissertation drew from two separate studies to investigate the phenomenon of attending a later-choice college. A qualitative study used student focus groups to investigate why some students who enrolled at a second- or later-choice institution decided to re-enroll for a second year. In addition, an exploratory quantitative analysis was conducted to compare first- to second-year retention rates of students who attended a second- or later-choice institution to determine if they are likely to be retained. Levels of academic attainment were also examined to determine if there are differences in academic outcomes between students who attend their first-choice college and students at later-choice institutions. Finally, the educational pathways of students enrolled at second- or later-choice colleges were reviewed to determine if a student completed their first year at the later-choice institution, transferred, or dropped out completely.

### **Research Questions**

1. What influences students to re-enroll in an institution that was not their first-choice?
2. Within a technical college, do first-to-second year retention rates differ among students who attend their first-choice institution versus those attending a second- or later-choice institution?

3. Within a technical college, is there a difference in first year grade point average between students who attend their first-choice institution versus those attending a second- or later-choice?
4. Within a technical college, are students who enroll at a second- or later-choice institution more likely to stopout or transfer during their first year than students attending their first-choice institution?
5. Within a technical college, what factors predict first-to-second year persistence for students at their first-choice institution versus those at a later-choice institution?

The last twenty years have seen double-digit growth in student enrollments at degree-granting institutions of higher education (National Center for Education Statistics, 2012). While enrollments have grown, the number of colleges and universities has remained fairly stable (National Center for Education Statistics, 2012). Due to this increased demand for higher education, numerous organizations, businesses, and individuals have started offering services meant to increase a student's chance of being accepted to college. The College Board, publisher of the SAT College Admissions Test, for example, has a large website dedicated to helping students apply and get accepted to college. Peterson's, a company dedicated to guiding students into college or graduate school, offers both free and paid services aimed at helping students go to college.

No matter whether using a paid or free service, there are many similarities in the advice given to high school students concerning college. For example, the College Board (2015) recommends applying to between 5 and 8 colleges, in three distinct categories:

(1) safeties – affordable colleges where the student will mostly likely be accepted; (2) good matches – colleges where a student has an adequate chance of being accepted and is a good match overall; and (3) reaches – colleges that may be difficult, but possible, for the student to gain admission. Peterson's (2013) agrees, encouraging students to include reach and safety schools on their final list of colleges, as well as using campus visits to learn more about the college, faculty, and to interact with students. Advice is also available regarding how to pick a specific college. Both Peterson's and the College Board emphasize characteristics such as the campus setting, public vs. private, professional goals, and overall costs.

Students ultimately choose to enroll in a specific college or university for a number of reasons, including cost, financial aid, location, institution size, academic reputation, recommendations from family and friends, and the personalized attention received during the enrollment process (Noel-Levitz, 2012). In their comprehensive review of the literature regarding college-choice, Hossler, Braxton, and Coppersmith (1989) identified several common characteristics that were found to influence the choice of institution by students. Students with high socioeconomic statuses were more likely to apply to and attend selective institutions. However, SES did not seem to be a factor in the cost of institutions selected by students (Hossler, Braxton, & Coppersmith, 1989). In other words, the cost of attending an institution was not a major factor for high SES students at the time of the study, in 1989. However, this does not seem to be true for students of middle or low income in more recent years. In fact, numerous other studies showed costs and financial aid as a significant determinant for students when

selecting one institution over another (Eagan, Lozano, Hurtado, & Case, 2013; Hossler, Schmit, & Vesper, 1999; Hurtado, Kurotsuchi Inkelas, Briggs, & Rhee, 1997; Hurwitz, 2012; Kealy & Rockel, 1987; Kim, 2004; Noel-Levitz, 2012; Nurnberg, Schapiro, & Zimmerman, 2012; St. John, Paulsen, & Starkey, 1996; Tierney, 1983; & Weiler, 1996). Nonetheless, while important for the majority of students, costs were rarely cited as the most important choice factor.

Institutional quality, selectivity, and academic reputation seem to be other major factors considered by students when choosing a specific college or university. According to Tierney (1983), students tend to apply to colleges that are similar in selectivity. Thus, they are applying to institutions that are at the same general level (e.g. the student applies to all Tier 2 institutions). The students then rank their colleges of interest by their perceived prestige. Prestige is a relatively fluid concept, as each student will value certain campus factors in a different way. To further complicate the matter, different characteristics, such as the social atmosphere, athletic prowess, media rankings, housing accommodations, and average SAT scores will be considered by students to develop their personal prestige ranking (Kealy & Rockel, 1987; Long, 2004; Schoenherr, 2009; Tierney, 1983; Weiler, 1996). Thus, while many students cite academic reputation or school quality as a significant factor in their decision to attend, it is actually quite difficult to interpret this factor as it is a unique construct developed by each individual student.

Costs and school reputation seem to be the most salient factors students consider when making their final matriculation decision. However, many more factors

are considered by students in varying degrees, including location (Long, 2004; Nurnberg, Schapiro, & Zimmerman, 2012; St. John, Paulsen, & Starkey, 1996) and the social atmosphere (Kealy & Rockel, 1987; St. John, Paulsen, & Starkey, 1996). In addition, a student's personal characteristics, such as race, gender, high school achievement, parental encouragement, and parental education levels also impact the way students perceive and select a college or university (Hossler, Braxton, & Coppersmith, 1989; Hossler, Schmit, & Vesper, 1999; Kim, 2004).

As this brief review shows, the decision to attend a specific college is highly complex. Due to the numerous factors students must consider when choosing an institution, it is understandable that some students may choose an institution that is not their ideal fit. Logically, students would not enroll in a college or university knowing that it is not a good fit. However, the conceptual framework for this study postulates that some students may already suspect an institution is less-than ideal when they enroll. Specifically, the students who enrolled in a second- or later-choice institution have already admitted that they are enrolling in a college or university that was not their first-choice, and in turn, it may not be perceived as their ideal institution.

The effects of attending a second- or later-choice college are largely unknown; however, theories of student departure logically imply that students at later-choice institutions may be more likely to depart prematurely. Nonetheless, little data has been uncovered that affirms or disputes this assertion. As such, this study examined the effects of attending a second- or later-choice institution on student persistence, academic attainment, and educational pathways.



Findings from this dissertation may be beneficial to institutions of higher education in several ways. As the financial burden on students continues to grow, institutions of higher education face increasing calls to provide evidence that they provide a quality education. While not strong indicators of learning, retention and graduation rates are perceived by the public as strong gauges of educational quality (Shavelson, 2010). Thus, institutions strive to maintain high rates of retention and graduation. Identifying an additional predictor of student retention, as this study will investigate, would enable colleges and universities to identify and intervene with students at risk for early departure. In addition, if students at second- or later-choice colleges are predisposed for lower academic attainment or increased risk of drop out, institutions can use this information to better target academic and social support services.

## CHAPTER 2: LITERATURE REVIEW

There exists little in the way of supporting research regarding the retention rates of students at later-choice institutions or their educational pathways. Despite the paucity of research on this particular area, theories of student departure do provide additional information that could be logically applied to students at a later-choice institution.

### **Theories of Student Departure**

#### **Tinto's theory of student departure.**

Tinto's (1993) theory of student departure remains one of the most regularly cited models in regards to student persistence (Hagedorn, 2005). Tinto's model is a sociological model that, while inclusive of student entry characteristics, places primary emphasis on a student's lack of integration with the institutional environment as the catalyst for student departure decisions.

As previously discussed, the decision to enroll in a specific college or university is highly complex. Often, the choice of institution is influenced by a student's personal desires – a specific major, life, or career ambition. In a similar fashion, Tinto's model asserts that students enter colleges with different backgrounds, family structures, and educational experiences (Goenner, Harris, & Pauls, 2013). These diverse experiences lead students to develop individualized personal goals, as well as varying levels of commitment to the institution and their personal goals (Goenner, Harris, & Pauls, 2013; Riggert, Boyle, Petrosko, Ash, & Rude-Parkins, 2006). In the same way, institutions of higher education possess their own goals and characteristics for the students who

matriculate (Riggert, Boyle, Petrosko, Ash, & Rude-Parkins, 2006). Inevitably, the goals of the institution and the goals of a student will at some point clash, creating the possibility for students to not completely integrate with the institution.

Student integration with the institution fails to develop for two primary reasons – incongruence and isolation (Tinto, 1993). Incongruence occurs when the student perceives a lack of fit between the institution and themselves. Often, the student views their interests and preferences to be significantly at odds with the institution. Isolation, on the other hand, occurs when the student does not have sufficient contact with other members of the academic and social communities on campus. Without these regular interactions, the student fails to establish personal bonds with the institution and does not become a member of its communities (Tinto, 1993). Being unable to fully integrate with the campus, the student is more likely to prematurely depart the institution.

Incongruence with an institution may have many causes, including a mismatch between a student's academic skills and the institution's rigor or a disparity between one's personal values and those of their peers (Tinto, 1993). Students who have chosen to attend a second- or later-choice college may have done so for a number of reasons. Perhaps the later-choice college was more affordable, closer to home, or they were unable to gain admission to their first-choice institution. No matter the reason for attending the later-choice college, students enrolled at a later-choice institution already may believe they are at an institution that is not their best fit, and thus, may be more likely to identify mismatches in their environment. In other words, through the lens of Tinto, students at later-choice institutions may be more sensitive to the fact, or more

likely to perceive, that their personal attributes are at odds with their college. This could lead to increased feelings of incongruence, which may influence a student to prematurely leave the institution.

In addition to incongruence, Tinto (1993) claims isolation also impacts a student's overall integration with the campus community. Isolation occurs when the student does not have sufficient contact with other members of the academic and social communities on campus. Without this contact, students may not develop friendships with other students, engage in dialogues with faculty and staff, or create bonds to the institution. Isolation on campus could occur for a number of reasons. For example, a student who is not at his or her preferred institution might have less motivation to get involved on campus. Or, he or she may plan to enroll for one semester and then transfer to his or her preferred institution. If this is the case, the student at a later-choice institution may see no benefit to increased involvement with the campus community, and in turn develop feelings of isolation. Being unable to fully integrate with the campus, the student is therefore more likely to prematurely depart the institution.

**Bean and Metzner's model of nontraditional undergraduate student attrition.**

While Tinto's model (1993) looked primarily at traditional college students on a residential campus, Bean and Metzner examined nontraditional students, which they defined as being over age 24, attending college on a part-time basis, or not living on campus (or some combination thereof) (Bean & Metzner, 1985). The Bean and Metzner model assumes that a student's decision to leave higher education is based upon four sets of personal variables – academic performance, intent to leave, student background,

and environmental variables. In contrast to Tinto (1993), Bean and Metzner focus on a student's personal characteristics as opposed to the student's social integration with the campus when making departure decisions.

Academic variables, such as study habits, major certainty, academic advising, and absenteeism, represent the most significant interaction a nontraditional student has with an institution of higher education (Bean & Metzner, 1985). As such, these variables should directly impact academic performance (GPA), and in turn, negatively affect a student's intent to leave (Bean & Metzner, 1985). In other words, the more a student interacts with the academic environment, the more likely he or she is to receive higher grades. If a student receives good grades, he or she is likely to have fewer reasons to depart the institution prematurely. However, environmental variables can disrupt this process. Environmental variables include time spent working, finances, and family responsibilities. Bean and Metzner found that students who struggled with childcare arrangements or paying for college were still more likely to depart, despite performing well academically. Conversely, positive environmental attributes, such as familial encouragement, have the ability to overcome poor academic performance, encouraging a student to remain enrolled (Bean & Metzner, 1985). To summarize, environmental support can compensate for poor academic performance, but strong academic performance cannot overcome negative environmental factors when nontraditional students are making persistence decisions (Bean & Metzner, 1985).

Another compensatory effect identified by Bean and Metzner (1985) is between academic performance and psychological outcomes. Psychological outcomes are the

result of the interaction between a student's background experiences and environmental variables. They include the utility the student sees in earning a degree at the institution, their satisfaction with their college experience, levels of stress, and their commitment to their goal (most often earning a degree). Similar to the impact of the environment on academic performance, Bean and Metzner contend that strong psychological outcomes – goal commitment or high levels of utility and satisfaction – can compensate for poor academic performance. A strong GPA, on the other hand, cannot overcome high stress levels or dissatisfaction with the institution.

While the Bean and Metzner (1985) model focused on the characteristics of the student, as opposed to the fit between the institution and the student in the Tinto (1993) model, it still provides several implications for the departure decisions of students enrolled at a second- or later-choice institution. According to Bean and Metzner, students may not need to integrate with the institution in order to remain enrolled, as long as environmental variables and psychological outcomes remain largely positive. However, if a student experiences high levels of stress, incompatible family commitments, poor goal commitment, and views their potential degree with low utility, they are more likely to depart. Logically, it seems that students at a second- or later-choice institution are more likely to experience these negative environmental and psychological outcomes. Would a student who was forced to attend a non-first-choice college likely be committed to earning their degree? Would they believe a degree from the second-choice college had the same utility as if they earned it at their first-choice? If the student chose to attend a second-choice college because of family commitments

that kept them close to home, or due to cost, could those environmental variables worsen and lead to a premature departure? Little research has shown that these variables raise the likelihood of departure for students at non-first-choice colleges, but the potential certainly exists, raising additional need for a more thorough understanding of the impact of attending a second- or later-choice college.

**Milem and Berger's modified model of student persistence.**

Milem and Berger developed a modified model of student persistence that combined aspects of Tinto's Theory of Student Departure (1993) and Astin's Theory of Involvement (1984). In particular, Milem and Berger (1997) sought to determine if there was a link between a student's involvement at a college and how those interactions influenced the student's feelings of "fit" at the institution. They hypothesized that students' early involvement (or lack thereof) influenced their perceptions regarding how supportive the institution was to the students' academic and social pursuits. If the perceptions were positive, students were more likely to invest energy into getting involved in the social and academic aspects of the institution. This increased involvement would then lead to increased commitment to the institution and enhanced integration with the college or university, and therefore, increased persistence (Milem & Berger, 1997).

Milem and Berger (1997) found strong support for their hypothesis that early involvement on campus leads to enhanced perceptions of support, which increased levels of involvement into the following semester, and, ultimately, the likelihood of persistence. In other words, students who got involved in social and academic activities

early in their fall semester were more likely to increase their commitment to graduating from the institution and, therefore, to persist. Conversely, “nonengagement with the university during the Spring was a negative predictor of academic integration ( $\beta = -.17$ ), social integration ( $\beta = -.33$ ), institutional commitment ( $\beta = -.44$ ), and intent to reenroll ( $\beta = -.15$ )” (Milem & Berger, 1997, p. 397). Students who chose not to get involved were less likely to feel supported on campus, less committed to the institution, and more likely to depart prematurely. Often, these students reported feelings of homesickness, a lack of belonging, a desire to leave the institution, and that they had reconsidered their decision to attend this particular institution (Milem & Berger, 1997).

Of particular interest to this dissertation is Milem and Berger’s (1997) finding that institutional commitment was the strongest predictor of the intent to reenroll. In addition to expecting this result, Milem and Berger also predicted that initial levels of commitment to the institution would serve as a strong predictor of later commitment. However, contrary to the hypothesis, a student’s initial commitment to the institution served only as a weak predictor of later institutional commitment. Nonetheless, this finding could also be a limitation to the study, as it was conducted at a large, affluent university where much of the student body enters with a strong commitment to graduating from the university. The findings could be drastically different at a community college, or another institution with high numbers of transfer-outs.

Similarly, the highly-selective, affluent university used for the Milem and Berger (1997) study may have been the college of first-choice for the majority of students. Students entering a second- or later-choice college may have lower levels of initial



commitment to the institution, and in turn, are less likely to expend energy getting involved on campus during the first few weeks. According to Milem and Berger's (1997) findings, this could lead to a trickle-down effect of nonengagement and premature departure from the institution.

The models of student departure discussed thus far focused on the interaction between a student and their environment in driving the decision to persist. This is a sociological perspective, and one that has driven much of the research literature on student departure (Braxton, 2000). However, other researchers have examined economic, cultural, and psychological reasons for student departure. Psychological models focus on the internal processes and beliefs that motivate a student's behavior. Similar to the sociological perspective, these models offer several insights into the possible behavior of students at a second- or later-choice college.

#### **Bean and Eaton's psychological model of college student retention.**

Bean and Eaton's model begins with the assumption that the act of leaving college is a behavior. Behaviors, they contend, are psychologically motivated. As such, their psychological model starts with a student's entry characteristics, which have been shaped by past experiences, beliefs, and preferred coping strategies (Bean & Eaton, 2000). "Among the most important of these psychological factors are self-efficacy assessments ('Do I have confidence that I can perform well academically here?'); normative beliefs ('Do the important people in my life think attending this college is a good idea?'); and past behavior ('Do I have the academical and social experiences that have prepared me to succeed in college?')" (Bean & Eaton, 2001, p. 75).

After matriculating at the institution, students interact with the campus environment in several ways – bureaucratically, with the various campus offices; academically, with faculty inside and outside of classes; and socially, with fellow students, faculty, and staff (Bean & Eaton, 2001). At the same time, students continue to interact with individuals (family members, employers, etc.) outside of the institution. Each interaction results in a self-assessment, which is impacted not only by the interaction, but also by the pre-entry characteristics previously discussed. With each assessment, students identify and implement coping strategies for dealing with the situation at hand. Most often, students either adjust – a process where the student changes to fit the situation, or adapts – a process where the student learns to cope with the situation, no matter if they fit or not (Bean & Eaton, 2001). The adoption of these coping strategies, Bean and Eaton contend, leads students to develop a sense of academic and social integration with the institution (“I share the college’s values”). Increased integration then leads to greater feelings of institutional fit (“I fit in here”) and loyalty (“Being at this college is important to me”). Finally, these attitudes lead to intentions, which lead to behaviors. Feelings of institutional fit and loyalty lead to the desire to persist, which leads to actual persistence (Bean & Eaton, 2001).

This process is similar to, and shares several elements of, the sociological theories previously discussed. However, rather than suggesting that the student’s interactions with his/her environment directly lead to premature departure, this psychological model contends that the interactions influence a student’s self-efficacy. In other words, student interactions with the college environment lead to a re-assessment

of the student's ability to be successful. If the interaction leads a student to believe that they are capable of being successful, welcome on campus, and/or have similar values to the institution, they are more likely to positively move past the interaction. With each positive outcome, the student develops stronger feelings of competency, which leads to enhanced academic and social integration, resulting in greater persistence.

Similar to sociological theories, issues may be present when this model is applied to students at second- or later-choice colleges. Bean and Eaton (2000; 2001) contend that the psychological attributes most critical to a student are those that deal with self-efficacy. In particular, confidence in their ability to be academically successful in college, a belief that significant others believe this is the best choice of college, and an assurance that past social and academic experiences have prepared the student for success. A critical examination of these factors creates uncertainty when applied to students at later-choice colleges.

Does a student at a non-first-choice institution have a positive belief regarding their capacity to be academically successful? If the student was denied admission to their first-choice they may feel academically underprepared at the later institution. On the flipside, enrolling at the second, perhaps less rigorous, college may bolster a student's belief in their academic capacity. In addition, will parents and family members believe that a second-choice institution is best for the student? Perhaps, if it is more affordable or closer to home. However, if family members are aware it was not the preeminent choice for the student, they may subconsciously demean the student's second-choice college. Finally, if a student's academic and social experiences did not set

them up to have the ability to enroll in their first-choice college, what would make the student believe they would be successful at any college? Put simply, the fact that a student enrolled at a second-choice college may deal a significant psychological blow that makes it difficult or impossible to positively interact with the environment, to integrate, and therefore, to persist.

These theories of student departure have been developed over time to try and explain the complex process of leaving college. They provide a framework for understanding the process, but since it is such a complex process, it's impossible to account for all of the variance using a single model (Spady, 1970). Furthermore, the frameworks discussed thus far both contradict one another and provide additional support to each other. For example, Tinto (1993) asserts that students need to feel welcome on campus and to get involved in order to minimize feelings of incongruence and isolation. Milem and Berger (1997) agree, asserting that involvement early on in a student's collegiate career is critical to developing a sense of fit. Thus, both these frameworks stress involvement with the academic and social environments present on a college campus.

Bean and Metzner (1985), as well as Bean and Eaton (2000), instead concentrate on individual student attributes as the drivers of departure decisions. These frameworks contend that student characteristics, such as study habits, familial and environmental circumstances, and self-efficacy assessments, motivate a student to leave. In other words, if a student's self or familial assessments inform the student that they will be

unsuccessful, or it's undesirable to continue their education, the student is likely to depart, despite a strong fit with the institution.

These four frameworks, complementary and contradictory at the same time, provide guidance for this study. In particular, this study presumes that involvement with social and academic activities on campus leads to increased feelings of fit with the campus, lowering a desire to depart. This presumption is guided by the theories of Tinto (1993) and Milem and Berger (1997). However, students attending a less-than-first choice college may also have lower confidence in their ability, or increased environmental/family pressures that may encourage departure, as discussed by Bean and Metzner (1985), as well as Bean and Eaton (2000). In other words, students who attend a second- or later-choice college may enter with psychological baggage as a result of "settling" for a later-choice institution. This could diminish their desire to get involved on campus, and when combined with feelings of psychological inadequacy or environmental pressure, result in premature departure.

Nonetheless, these frameworks are guides for understanding the larger process of student departure. Other researchers have investigated individual factors that impact student persistence, which will be discussed in the next section.

### **Individual Factors that Predict Early Departure**

Many faculty and administrators in higher education wish they could uncover a single "magic bullet" that predicts a student's premature departure. If possible, intervention strategies could then be developed to quickly and efficiently remedy the problem of student persistence. Yet, despite the hefty amount of research on

persistence and its many factors, a single factor has not been found and attrition rates remain relatively stagnant (Reason, 2009). Furthermore, Pascarella and Terenzini (2005), in their review of more than thirty years of research on student outcomes, determined that multiple, interconnected factors influence student persistence. Nonetheless, an understanding of the major factors found to impact student persistence is beneficial.

Reason (2009), in a thorough review of the literature surrounding student persistence, identified four categories to describe the factors that impact persistence. These categories, which include precollege characteristics, organizational context, peer environment, and the individual student experience are discussed in greater detail below. Due to its completeness, the following section draws heavily from Reason's (2009) review.

#### **Student precollege characteristics.**

As one can imagine, students enter college with a wide variety of experiences and background characteristics. Specifically, sociodemographic traits, academic preparation and performance, and student disposition have been found to be significantly related to persistence decisions (Reason, 2009).

Sociodemographic traits that have been linked to student persistence primarily include gender, race, and socioeconomic status (SES) (Reason, 2009). The impact of gender and race, though often found to be related to persistence, has been murky. For example, Reason points out that several studies have found that gender differences lessen or disappear when interactions or controls are used. Specifically, when SES is controlled for, race differences can disappear. Additionally, gender effects can often be

accounted for by the type of institution attended or likelihood of residing on campus (Reason, 2009). Thus, it seems that SES may be a larger factor of student precollege characteristics in terms of their likelihood to persist.

A student's income background has been found to be significantly related to persistence in several studies (Reason, 2009). According to Lotkowski, Robbins, and Noeth (2004), students' SES is the second highest predictor of retention, even after controlling for other demographic variables. Reason asserts that this finding reinforces that of Walpole (2003, as cited in Reason, 2009) who found that students from lower SES backgrounds had lesser educational achievements than their high SES peers. Bowen and Bok (1998) also found that students from low SES backgrounds were more likely to depart due to family financial difficulties. Combined, these findings illustrate that family income is a significant impediment to successfully completing college.

Academic preparation and performance while in high school may be the strongest predictor of student persistence (ACT, 2007, as cited in Reason, 2009). Other studies have determined that a high quality high school curriculum, including high-level math, are more influential in predicting persistence than standardized test scores (Adelman, 1999; Adelman, 2006; Reason, 2009). Additionally, it seems that a rigorous course of study in high school can overcome the negative effects of coming from a low SES background that were previously discussed (Reason, 2009).

Finally, student disposition has been found to be a significant predictor of persistence (Reason, 2009). Specifically, academic goals, self-efficacy, conscientiousness, and social connections are all related to persistence (Reason). Students with high levels

of self-discipline, self-confidence, and motivation are also more likely to persist through their third year in college (ACT, 2004). In fact, Reason asserts “that perceptions about academic success might be more important than – or at least mediate the importance of – more direct indicators of academic success” (Reason, 2009, p. 665).

The relationship of these sociodemographic factors to student persistence is particularly interesting in regards to students at second- or later-choice colleges. What effect does attending a non-first-choice college have on a student’s disposition? Are they as likely to have a clearly articulated academic goal? If they were denied admission to their first-choice college, would their levels of academic self-efficacy be damaged? While it hasn’t been determined conclusively, it appears that students at second- or later-choice colleges may be more likely to have a negative academic disposition, and therefore, more likely to dropout. Furthermore, the impact on finances and family income were previously discussed as significant factors in a student’s college choice decision. It is plausible that a student chose to enroll in a second- or later-choice college due to financial difficulties, indicating they may come from low SES backgrounds. The research discussed in this section has found that students from low SES backgrounds are less likely to persist. Does this, therefore, mean that many students at second-or later-choice colleges have an even greater likelihood of not persisting?

#### **Organizational context.**

The college campus provides students with an environment that has the potential to impact behavior – positively and/or negatively (Reason, 2009). Other studies have examined the organizational factors of a college campus that have the



potential to influence student persistence. Generally, these factors are broken into two categories: structural-demographic and organizational behavior. Structural-demographic factors focus on institutional traits, such as admissions selectivity and size. Organizational behavior factors are focused around the internal policies and practices that influence the student experience (Reason, 2009).

Structural-demographic factors are listed as a contributing factor in the bulk of student persistence research. This occurs primarily due to the ease in which the factors can be defined and assessed. It's quite simple to ascertain an institution's size (e.g., 3,000 students), or source of support (e.g., public funded). However, findings in these categories are often contradictory or quite small, with two exceptions. Women who attend women's institutions and African-American students enrolled at historically black colleges or universities are more likely to persist (Reason, 2009). Thus, for these populations of students, where they begin college has an effect on educational attainment (Pascarella & Terenzini, 2005; Reason, 2009). Second, and of greater importance to this study, is that students at higher quality institutions are more likely to persist (Reason, 2009). The effects of this may be a bit exaggerated, as quality is often measured by average high school grades of the entering class, admissions selectivity, or average entrance exam scores (e.g., SAT or ACT) (Reason, 2009). These factors may serve as proxies of precollege academic attributes, which were previously discussed to be positively associated with persistence. Nonetheless, it's possible that students at second- or later-choice colleges did not gain admittance to the higher quality institution

they sought and “settled” for an institution of lower quality. Being at a lower quality institution, in turn, increases the student’s likelihood of not persisting.

Organizational behavior factors are more focused on how the institution operates and interacts with students. Colleges and universities seem to represent one of five basic organization types: bureaucratic, collegial, political, symbolic, and systemic. The types represent the manner in which institutions make decisions and interact with their constituents. Of these types, institutions that were perceived as collegial (focused on collaboration and consensus-building), symbolic (focused on history and myth to create campus culture), or systemic (operated as interconnected subsystems) increased students’ likelihood of persistence (Reason, 2009). Thus, students at a bureaucratic or political type institution may be more likely to leave. However, students have no control over how an institution operates. In addition, students rarely have the ability, or wherewithal, to examine organizational behavior when choosing a college. As such, there appears to be no logical difference in this persistence factor between students at a first-choice or later-choice institution.

#### **Student peer environment.**

Reason (2009) asserts that the effect of the peer environment on student persistence decisions are subtle, yet must be included in any thorough examination of persistence factors. The peer environment includes the perceptions, beliefs, attitudes, and expectations that characterize the student body. In other words, the peer environment represents the student climate – often viewed via the racial and academic climates. These climates provide students with a sense of the behaviors that are

expected and valued by the student body. Tinto, as previously discussed, referred to this as social integration. Put simply, when students feel like their values, beliefs, and attitudes are in sync with the rest of the student body, they are more likely to socially integrate and develop an increased commitment to the institution. Given the prevalence of this factor in theories of student departure, it should be no surprise that researchers consistently find linkages between social integration, institutional commitment, and student persistence (Reason, 2009; Tinto, 1993).

#### **Individual student experiences.**

The final category of factors that impact student persistence is the set of experiences the student has while enrolled. These influences come from both the academic and nonacademic life of the student, and can be classified into three subcategories: curricular, classroom, and co-curricular experiences (Reason, 2009).

Curricular experiences are those focused around the student's academic major and their course of study (Reason, 2009). For example, students in majors focused around the STEM fields have been found to persist at higher rates than social science or education students (Reason, 2009). Nonetheless, other curricular experiences have been found to be more powerful in their relationship to persistence. Specifically, participation in first-year seminars is a strong predictor of student persistence (Reason, 2009). In addition, acquiring enhanced academic skills (e.g., note-taking, studying, etc.) also influences persistence. These skills are often taught in first-year seminars, but may be offered as stand-alone courses or workshops. Reason (2009) does not provide an explanation for these findings, but one could speculate that the smaller nature of the

first-year seminar courses increases the likelihood of enhanced student-faculty interaction and support, which leads to better integration. Furthermore, learning additional academic skills would most likely result in greater academic performance, which may be a factor in student persistence decisions.

Students' experiences within the classroom have also been shown to influence persistence. Studies have found that good teacher behaviors and active teaching pedagogies positively influence persistence (Reason, 2009). Teachers who are well organized and encourage classroom discussions, rather than the regurgitation of facts, increase a student's likelihood of persistence. This may be a result of enhanced satisfaction with the educational experience (leading to enhanced institutional commitment) and greater social integration, both factors understood to increase persistence.

Co-curricular, or out-of-class, experiences have also been found to influence persistence. Generally speaking, the more engaged a student is in educationally purposeful activities, the more likely they are to persist (Reason, 2009). Specifically, being involved in student clubs and organizations influences persistence, though not always positively. Involvement that increases interactions in educationally purposeful activities, such as service organizations, athletics, or academic-focused student groups (e.g., Student Nurses Association), are much more likely to positively influence persistence (Reason, 2009).

There are a wide array of individual factors that influence student persistence. As this brief review has shown, some factors, such as increased involvement in clubs and

organizations, attending a high quality institution, and having a strong commitment to one's goals, are all positively associated with persistence. Students at second- or later-choice colleges may have none of these factors, increasing their risk of premature departure.

### **Summary of Factors Leading to Student Departure**

There is no one factor that guarantees a student will depart an institution prior to graduation. As this review has shown, there are numerous theories, as well as individual and institutional factors that influence a student's decision to persist. On the other hand, this examination of the literature surrounding student departure has identified traits of students who persist that may be missing in students at second- or later-choice colleges. Specifically, students who persist are more likely to enter college with confidence in their ability to be successful academically, and at that particular institution, a commitment to earning their degree at the institution, supportive precollege characteristics (e.g., strong academic preparation, accepting family, mid-to-high SES), and a willingness to invest in the academic and social life on campus. In addition, persisters tend to enroll in higher quality institutions.

Students at second- or later-choice institutions, on the other hand, may not possess the traits that lead to positive persistence. There may be many reasons why a student chose to attend a second-choice institution, but the fact that the institution was not the institution they desired to attend most indicates that their level of commitment to the institution, or earning a degree from the institution, may be lower. Given these possibilities, several hypotheses are conceivable. If a student enrolled at the second- or

later-choice college because they failed to gain admittance to their first-choice, then negative repercussions to one's confidence in their academic ability and other measures of self-efficacy may develop. If familial obligations or a lack of finances led a student to forego their first-choice college, their levels of stress may rise, or they may develop non-commitment to the institution. Finally, if a student is not at their most desirable institution, they may be unwilling to engage in the social and academic life of campus. Each of these hypotheses, if held true, indicates a greater likelihood of premature departure and/or poor academic attainment.

When applied to students at later-choice colleges, theories of student departure logically imply that these students may be more likely to depart prematurely. However, little data has been uncovered that affirms or disputes this assertion. As such, this dissertation will examine the effects of attending a second- or later-choice institution on student persistence.

### **Academic Attainment**

It is universally accepted that students enroll in college to learn. Learning may not be the primary motivation for all students, but it is at least one desired outcome of their enrollment. However, measuring learning is difficult. The most familiar method for expressing learning are grades; however, grades more often reflect a student's performance in relation to his/her fellow students as opposed to their level of learning (Pascarella & Terenzini, 2005). In addition, grades most likely represent an interrelated mix of previous academic achievement, academic skills, ability, and personal traits; creating further confusion regarding what the grade actually represents (e.g. learning in

a particular course) (Pascarella & Terenzini, 2005). Nonetheless, a student's performance, as measured by grades, drives much of their collegiate experience, including admission to majors, continued enrollment, and degree completion (Pascarella & Terenzini, 2005). Thus, while an imperfect measure, they represent a critical component of a student's collegiate experience.

In their review of over thirty years of research on the impact of college, Pascarella and Terenzini (2005) concluded that "undergraduate grades were perhaps the single best predictor of whether a student would earn a bachelor's degree, attend graduate school, or obtain an advanced degree" (Pascarella & Terenzini, 2005, p. 618). Additionally, academic success in the first year of college decreases the probability of a student stopping out and increases the likelihood of subsequent good grades and timely degree completion (Pascarella & Terenzini, 2005). Given these conclusions, strong academic performances should be desirable for students and colleges alike.

Numerous factors impact student academic achievement, as measured by the Grade Point Average (GPA), including several previously discussed. These elements often fall into three categories: demographic factors, personality characteristics, and pre-college characteristics. Demographic factors include gender, socioeconomic status, first-generation status, and ethnicity, among others. Personality characteristics usually include motivation, emotional impact, and self-confidence. Pre-college characteristics cited most often include high school GPA and aptitude (SAT) scores. Elements of each of these categories have been found to predict GPA, positively or negatively, though with low success rates (Krumrei-Mancuso, Newton, Kim, & Wilcox, 2013). Nonetheless, a

review of the literature regarding this topic uncovers several common factors found to relate to positive academic performance: self-efficacy, motivation, and involvement.

### **Self-efficacy.**

Academic self-efficacy generally refers to a student's confidence in their academic ability and/or their self-evaluation of their chances of succeeding in the academic environment (Krumrei-Mancuso, Newton, Kim, & Wilcox, 2013; Robbins, et al., 2004). In a meta-analysis of 109 studies, Robbins et al. (2004) concluded that academic self-efficacy was the best psychosocial predictor of cumulative GPA for students at 4-year institutions. Further elaborating in a 48 institution study, Robbins et al. (2006) found academic self-confidence (similarly defined to self-efficacy) as one of the top five predictors of first-year GPA for students at 4-year colleges. Zajacova, Lynch, and Espenshade (2005), in a population of mostly nontraditional, minority students at a commuter institution, found academic self-efficacy had the strongest positive effect on first-year GPA. Finally, Krumrei-Mancuso, Newton, Kim, and Wilcox (2013), found that academic self-efficacy was the greatest predictor of a student's GPA in their first-semester. In the first-semester, first-year, and throughout an overall collegiate career, a student's academic self-efficacy is a significant predictor of academic achievement (GPA).

Given these findings, it's important to consider factors that could lead to low academic self-efficacy, as a poor self-concept could result in poor academic achievement. There are many possibilities for a student's low self-efficacy – perhaps they have low academic skills and their self-assessment is correct (Krumrei-Mancuso,



Newton, Kim, & Wilcox, 2013). Or, the student may be stuck in a cycle of poor performance – their low expectations may make them less likely to expend the effort to attend class and do the work, leading to poor performance on tests, which then results in even lower academic self-efficacy (Krumrei-Mancuso, Newton, Kim, & Wilcox, 2013). Another possibility is that attending a second- or later-choice college has minimized the student's self-confidence. This may be easiest to recognize if the student was not admitted to their first-choice college. This denial of admission at a first-choice institution may cause significant damage to the student's feelings of self-efficacy.

### **Motivation.**

A second common factor found to positively influence GPA in college students is that of motivation. In the studies that were reviewed, motivation had a number of differing, yet similar definitions. For the purposes of this discussion, motivation will be defined as the drive to meet or exceed a goal. In their meta-analysis, Robbins et al. (2004) found motivation as the second highest predictor of cumulative GPA. Robbins et al. (2006) found similar results in a follow-up study. In the 2006 study, they found general determination, or the extent that a student attempts to complete commitments, as the second highest predictor of first-year GPA.

Two additional studies of note found factors relating to student GPA that may serve as proxies to student motivation. Krumrei-Mancuso, Newton, Kim, and Wilcox (2013), in a study of 579 first-year students, found Organization and Attention to Study as the second best predictor of first-semester GPA. They defined Organization and Attention to Study as the organization of tasks, goal setting, and completing necessary

academic activities. Motivation, it seems, involves the ability to set goals and follow-through with them, indicating this may be a concept similar to those described by Robbins et al. (2004) and Robbins et al. (2006). Strayhorn (2006) found similar results in a study involving first-generation college students. Strayhorn found that higher educational aspirations were positively associated with GPAs. In other words, students who had the desire to earn more advanced degrees were also more likely to have higher cumulative GPA's. Strayhorn contends degree plans may serve as a proxy for a student's commitment to higher education or their overall motivation. Higher degree aspirations may indicate a greater interest in the collegiate experience, enhanced goals, and a greater desire to achieve those goals.

These studies also provide academic achievement (GPA) implications for students at second- or later-choice colleges. As has been shown, the ability to set goals and follow through with them offers increased likelihood of a student performing well academically. While students at second- or later-choice colleges certainly have goals, would the fact that they enrolled at a non-first-choice college mean they reevaluated and reformed their goals? Because they were unable to meet their original goal of enrolling in a specific institution, are they as likely to set and meet academic goals at their current institution? Perhaps enrolling at the second- or later-choice college required the student to scrap their previous goals (which may have been developed over a long time period) in favor of new, different, or more achievable goals. Or, conceivably the student has set an unrealistic goal, and despite failing in one aspect, has yet to realize this fact. Clearly, the motivations of students who enroll at second- or

later-choice colleges may have shifted; yet, little is known about whether this is true or not, and if it is, what impact it could have on GPA.

### **Involvement.**

A final factor commonly associated with positive academic achievement (GPA) is involvement. In their review, Pascarella and Terenzini (2005) determined that the greater a student's engagement in academic work, the greater their level of knowledge acquisition and cognitive growth while in college. Strayhorn (2006) confirmed these findings in a study on first-generation students. Specifically, he found that students with positive academic integration, defined as satisfaction with the intellectual life on campus, were more likely to achieve higher grades.

Studies on social involvement's impact on GPA have been more mixed. In their meta-analysis, Robbins et al. (2004) found social involvement to have a minor impact on GPA. In a 2006 follow up study, Robbins et al. determined that social activity, or a student's comfort level in meeting others, was predictive of GPA. It can be assumed, then, that students with higher levels of social comfort are more socially involved on campus. Conversely, Strayhorn (2006) found social integration to be negatively related to college grades, although with no statistical significance. Krumrei-Mancuso, Newton, Kim, and Wilcox (2013) also found that involvement with college social activities did not significantly account for GPA.

Despite these mixed results, it appears decades of research continue to confirm Astin's (1984) finding that student learning is directly proportional to student involvement. In other words, the more a student is involved in the academic and social

life of campus, the more likely they are to learn. Greater learning, in turn, should be reflected in higher GPA's. However, students at second- or later-choice colleges may not be inclined to effectively integrate into the social or academic environments. They may be viewing their current institution as a stepping stone to something greater and see no utility in their involvement. Or, perhaps they feel unwelcome on campus and default to not being involved.

This section has identified three major factors that positively impact a student's GPA: self-efficacy, motivation, and involvement. Each of these factors may be negatively impacted by the circumstances which led a student to enroll in a second- or later-choice college. However, no research has been uncovered that can conclusively prove this, lending greater support to the need for this study.

### **Educational Pathways**

After enrolling in higher education, students have several choices with regards to the educational pathway they will use to meet their goal. Typically, the goal of enrolling in higher education is to earn a degree, though some students may see it as an opportunity to develop job skills that lead to employment (prior to earning a degree), or as an avenue for socializing with like-minded individuals. For the purposes of this study, students will be assumed to have the goal of earning a degree. No matter the goal, students undergo an assortment of experiences that may raise questions about the utility of this goal and how to achieve it. In particular, students are faced with a plethora of choices on how and where they will earn their degree. Chiefly, will they complete the degree at the current institution (stay), complete it another college or university

(transfer), leave higher education completely (drop-out), or complete the degree after a break in enrollment (stopout). These options are often described as educational pathways in the research literature (Li, 2008).

Thus, students can, generally, embark on four different pathways. Research into each of the pathways has been varied, and none has focused on the educational pathways of students who enroll at second- or later-choice institutions. Nonetheless, the research that is available provides insights into the experiences of this population of students.

The dominant view of college attendance is one where a student enrolls in an institution and completes their degree at that institution (Li, 2008). However, this is not the case for many students. In fact, 47 percent of bachelor's degree recipients who began at four-year institutions attended more than one institution during their collegiate career (Peter & Cataldi, 2005). Little research has been conducted to ascertain the impact of attending multiple institutions (transferring) on a student's likelihood of degree completion. In the studies that have been published, the results have been varied, or focused on students who transfer from 2-year institutions to 4-year colleges. Using data from the National Center for Education Statistics (NCES), Adelman (1999) found that the number of institutions attended had no effect on degree completion, though the more institutions attended, the longer it took for a student to complete their degree. Conversely, using institution specific data, Mullen and Eimers (2001) found students who started and finished at one institution were more likely to graduate than students who transferred. Recognizing these discrepancies, Li (2008) also used NCES

data in a study exploring the college choice and transfer process of college students. Li found that stopout students were 71.1% less likely, and continuous transfers, students who transferred to a different institution but did not have a lapse in enrollment, 33.4% less likely than their staying peers to complete their degree (Li, 2008).

As highlighted above, stopout is another educational pathway used by students and analyzed by researchers. A student is considered a stopout when they stop their enrollment at a college or university with a break of more than 4 months before re-enrolling (Horn & Carroll, 1998). The critical element here is that a stopout resumes their higher education, either at their original institution, or by transferring to a different college or university. According to Horn and Carroll, approximate 16% of first-year students at 4-year colleges stopout in their first-year. However, 64% of these students ended up returning to a postsecondary institution within five years. When stopouts return to higher education, the majority transfer (Horn & Carroll, 1998). That is, stopouts generally interrupt their college enrollment during their first-year and when they re-enroll, they are more likely to transfer to a new institution than to return to their original college. Additionally, when compared to persisters, first-year stopouts were significantly less likely to earn any postsecondary credential within 5 years (DesJardins, Ahlburg, & McCall, 2006; Horn & Carroll, 1998; Li, 2008). Moreover, 70% of stopouts who reenrolled had a subsequent stopout spell during their collegiate career (DesJardins, Ahlburg, & McCall, 2006). These results should be examined with caution, however, as the DesJardins et al. study was conducted at a single institution. Nonetheless, the findings are congruent with those of Horn and Carroll (1998) and Li

(2008), indicating that students who stopout are less likely to complete a degree and more likely to transfer.

The final educational pathway students may utilize is that of dropping out. A student is considered a drop-out when they leave higher education and do not reenroll. Clearly, these students are unable to complete a college degree. If the goal of enrollment is graduation, then students who drop-out fail to reach their goal. This is unfavorable for both the student and the institution.

From this review of educational pathways, it appears to be in the best interest for a student to remain at their initial institution – if we view the goal of their enrollment as earning a degree. Students who persist at their initial college are much more likely to graduate with a postsecondary credential (Adelman, 1999; DesJardins, Ahlburg, & McCall, 2006; Horn & Carroll, 1998; Li, 2008; Mullen & Eimers, 2001). This offers several implications for students at a second- or later-choice college. First, no matter the reason for departure, students who transfer, stopout, or dropout are at a significant disadvantage for earning a degree. If students at second- or later-choice colleges more likely to prematurely depart, this research will have uncovered an additional factor related to transfer, stopout, or dropout behavior. Second, it will provide additional insight into how and why students choose to shift their educational pathway.

### **Impact of Attending a Later-Choice College**

Little research has been uncovered that focuses on the impact of attending a later-choice college. Kim (as cited in Kim, 2004) contends students at first-choice

institutions were more likely to be satisfied with their college experiences, more likely to graduate, and had higher grades than students at a later-choice institution.

Unfortunately, neither a copy of these remarks has been found, nor direct communication with the author achieved. However, there are a handful of studies that substantiate Kim's claims. In a study using the National Educational Longitudinal Survey in Pennsylvania, Yan (2002) discovered that students who dropped out or were late to enroll were more likely to attend later-choice institutions. A handful of other studies have found a link between college choice and persistence.

In a study of nontraditional freshman, Villella and Hu (1990) found that college choice rank was linked with the intent to re-enroll. More specifically, the lower a student ranked the institution, the less likely they were to re-enroll. An indirect effect of college choice on intent to re-enroll was also found. The better an institution met a student's expectations, the more likely they were to express an intent to re-enroll. Finally, students who ranked the institution as their fourth- or later-choice were much more likely to express the opinion that their expectations of the institution were substantially worse. This study was conducted at one institution and focused on nontraditional students, providing limited generalizability. Even so, it does provide insights into the possible behaviors of students attending second- or later-choice colleges. Based upon Villella and Hu's findings, it appears that students at second- or later-choice colleges are less likely to persist and that low-ranked institutions are more likely to be perceived in a negative fashion by the student.



Helland, Stallings, and Braxton (2002) also sought to examine the linkage between college choice and persistence. They hypothesized that students enter college having developed a set of expectations from the institution. This image, if met by the institution, leads to greater likelihood of social integration. Finally, the more a student is integrated with the institution, the greater chances of persistence (Helland, Stallings, & Braxton, 2002). Helland, Stallings, and Braxton used three surveys to test their conceptual framework at a highly-selective, private Research I institution. In their sample of 718 first-time, full-time freshmen, they determined that the fulfillment of social expectations positively influenced social integration and institutional commitment. Thus, when a student's social expectations of a college are met, they are more likely to expend the necessary energy to become socially integrated and to persist. This finding supports a link between the process of college choice and the student departure decision (Helland, Stallings, & Braxton, 2002).

Vianden and Barlow (2014) found similar results in their study of the predictors of student loyalty. Their sample consisted of 1,207 traditionally-aged college students enrolled at three different master's-level public universities. They found that college choice rank impacted institutional loyalty. Specifically, students who ranked the institution higher in the choice process had statistically higher loyalty scores. Of greater importance to this study are their additional findings that students who were at their first-choice college had significantly lower intentions to leave than students at their second- or later-choice college (Vianden & Barlow, 2014). This study provides further evidence of the link between college choice and the intent to leave.

While the research on the link between college choice and persistence is sparse, these three studies do provide evidence of linkages between choice rank and the desire to leave an institution. Only one study, that of Yan (2002), found evidence of an actual connection between student departure and college choice ranking. The others provide confirmation that the college choice rank is at least connected to the intent to leave the institution, a factor previously found to be one of the strongest predictors of actual persistence (Bean, 2005; Tinto, 1993).

### **Conceptual Framework**

The preceding discussion led to the development of a conceptual framework that was used to guide this dissertation. In particular, this study presumes that involvement with social and academic activities on campus leads to increased feelings of fit with the campus, lowering a desire to depart. This presumption is guided by the theories of Tinto (1993) and Milem and Berger (1997). However, students attending a less-than-first choice college may also have lower confidence in their ability, or increased environmental/family pressures that may encourage departure, as discussed by Bean and Metzner (1985), as well as Bean and Eaton (2000). In other words, students who attend a second- or later-choice college may enter with psychological baggage as a result of “settling” for a later-choice institution. This could diminish their desire to get involved on campus, and when combined with feelings of psychological inadequacy or environmental pressure, result in premature departure. Figure 1 depicts this framework visually.

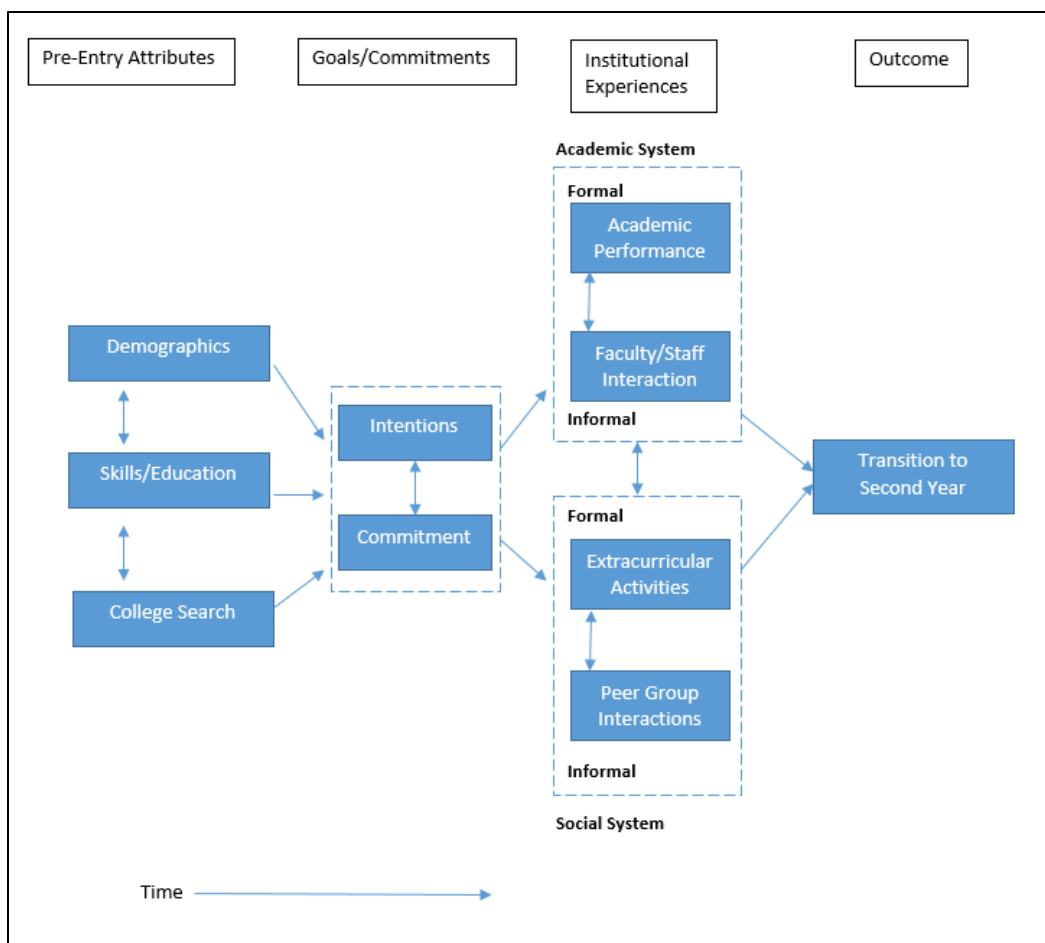


Figure 1. Conceptual Framework of Second-Choice College Persistence

### Community/Technical Colleges

Having identified the broad theoretical considerations reviewed in developing this study, attention will now be drawn towards a subpopulation of the higher education market which may have more second- or later-choice students enrolling. According to the American Association of Community Colleges, almost half of all undergraduates in the United States currently attend a community/technical college (2016a).

The predecessors to today's community colleges, junior colleges and free municipal universities, arose in the early twentieth century to help provide job skills and

college preparatory education to individuals living in rural areas and cities alike (Geiger, 2005). Enrollments in these new types of institutions grew dramatically, beginning a period of mass, as opposed to elite, higher education. With the conclusion of World War II, millions of returning servicemen took advantage of the Servicemen's Readjustment Act of 1944 (GI Bill) to enroll in higher education (Geiger, 2005). This growth in the number of students also helped give rise to the community college, which by the 1960s generally denoted a comprehensive, publicly supported institution of higher education (Cohen & Brawer, 2003). Throughout this time, the community college carried many other names – county college, city college, technical institute, junior college, technical college, and vocational institute to name a few (Cohen & Brawer, 2003). Due to this complexity, Cohen and Brawer define the community college as a regionally accredited institution that confers the associate degree as its highest degree (2003).

Despite Cohen and Brawer's (2003) definition, and an advocacy umbrella group named the American Association of Community Colleges (AACC), the definition of a community/technical college remains elusive. For instance, 22 states now permit community colleges to award the bachelor's degree (Smith, 2015). Since this degree is higher than the associate's degree, it precludes these institutions from fitting Cohen and Brawer's definition. A review of the AACC membership list finds a wide range of names – Northcentral Technical College (WI), Coastal Bend College (TX), and Vincennes University (IN) – indicating that many community/technical colleges don't even use the phrase "community college" in their name.

In moving towards a common definition of the community/technical college for this study, a review of AACC membership criteria is helpful. According to the AACC, membership is “open to 2-year, associate degree-granting colleges accredited (or in the process of accreditation) by one of the six regional accrediting agencies” (American Association of Community Colleges, 2016b). This specifies that the requirement is to award an associate’s degree, indicating baccalaureate degree granting institutions are permitted to join the organization.

This is especially important as many community/technical colleges strengthened workforce preparation programs in order to attract traditional-aged students interested in bachelor’s degrees but also having taken part in technical preparation programs in high school (Bragg, 2002). The bulk of students enrolled in these vocational programs today are in programs such as health care, engineering, information technologies, and other technology-related programs (Bragg, 2002). Given this increased focus on technical education, combining technical colleges and community colleges into the same category is reasonable for the purpose of this study. Moving forward, this study will define a community/technical college as a regionally-accredited institution that awards associate’s or bachelor’s degrees in, primarily, technical areas of study. Furthermore, the term “technical college” will be used in place of community/technical college.

As mentioned previously, enrollments in this market of higher education are robust; yet, there has been a nationwide decline in technical college enrollment since 2011 (Juszkiewicz, 2016). A growing economy and politically-charged environment have also impacted enrollments at traditional four-year colleges, and most severely, at for-

profit institutions. In general, declines at four-year colleges have stabilized, slowed at community colleges, and remain high at for-profit institutions (Juszkiewicz, 2016). Public spending on higher education has risen slowly, yet remains short of 2008 (pre-recession) levels. Funding that is returning to higher education tends to be flowing towards community/technical colleges, as evidenced by the Tennessee Promise program (two years of tuition free technical college), efforts by President Barack Obama to make community college free throughout the nation, and the implementation or consideration of similar programs in several cities and states throughout the nation (Executive Office of the President, 2015; Hultin & Weeden, 2016; Juszkiewicz, 2016).

There are a few general reasons for this increased interest in the technical college – changing technology, globalization, and a competitive world economy. The rise of the computer in American industries over the last 40 years as lowered the need for manual labor and routine tasks, but increased the need for individuals capable of dealing with non-routine, highly cognitive duties (Romano & Dellow, 2009). In addition, the reliance on technology in almost every facet of American life requires specialized trainings that did not exist previously. For example, auto mechanics must learn about complex fuel-injection systems, or tire-pressure monitors, which are regulated by an embedded computer system in the car. This adds an additional level of complexity to the traditional carburetor, and therefore, requires more education.

Technology has also enabled globalization. Information and goods can now be transported around the world in record time. This enables companies to move resources to areas that have lower costs, more productive workers, or greater tax benefits

(Romano & Dellow, 2009). This has made the world economy more competitive. In order to succeed in such an environment, American workers will need to be technologically savvy (Romano & Dellow, 2009). According to President Barack Obama, “jobs requiring at least an associate degree are projected to grow twice as fast as jobs requiring no college experience. We will not fill those jobs – or keep those jobs on our shores – without the training offered by community colleges” (The White House, n.d., para. 1).

Given the open admissions policies, lower tuition rates, convenient locations, and more flexible schedules of technical colleges, they open doors to students without immediate access to traditional universities (Executive Office of the President, 2015). This, along with efforts across the nation to funnel additional funding into these types of institutions, suggests that technical colleges will continue to enroll the bulk of American students for many years to come.

Some of these same factors – lower tuition, open access, and convenient locations – may also make these institutions a strong second-choice college for students searching for postsecondary education. If a student was unable to afford their first-choice, they likely can afford a technical college. If a student did not meet the academic requirements for their first-choice college, an open-admissions institution would give them an opportunity to start a degree program. Finally, with more than 1,000 technical colleges throughout the nation, one is likely “close to home”, and a good alternative for someone unable to travel for family or financial reasons. These factors provide rationale

for conducting a study that examines second- or later-choice enrollments at a technical college.

### **Summary**

The links between college choice and student persistence, academic achievement, and educational pathways remain unclear. However, the research literature has provided a picture of the possible impacts of attending a second- or later-choice college. In particular, the logical connections provided by the literature reviewed show that students at second- or later-choice colleges may be more susceptible to premature departure. Specifically, they most likely lack the desire to integrate with the academic and social environments on campus, have lower confidence in their academic ability, and may be less likely to connect with the values and beliefs of an institution and their fellow students – all predictors of departure and poor academic achievement. Additionally, students who persist at their initial institution are much more likely to complete their degree. If students at second- or later-choice colleges are more likely to depart, as shown in one study (Yan, 2002) and alluded to in a handful of others (Helland, Stallings, & Braxton, 2002; Vianden & Barlow, 2014; Villeda & Hu, 1990), they may be less likely to graduate. These findings provide additional support for the importance of this study in examining a possible additional predictor of student departure and academic achievement. Finally, a discussion on the types of institutions that may attract students who were unable to attend their first-choice college indicates that technical colleges are a good setting for this study.



## CHAPTER 3: QUALITATIVE METHODS

The first phase of this dissertation (Study A) used qualitative data to investigate research question one: *What influences students to re-enroll in an institution that was not their first-choice?* A qualitative analysis was chosen to investigate the phenomenon of re-enrolling in a second- or later-choice college for several reasons. First, there was no quantitative data available that could accurately indicate why students re-enrolled. While the Higher Education Research Institute at UCLA offers a follow-up to the CIRP Freshman Survey, entitled Your First College Year, it lacks questions regarding students decision to re-enroll (Higher Education Research Institute, 2016b). In addition, it is administered between March and June, before students make the final decision to enroll for a second year of study. Second, a qualitative approach to this question allows for greater depth and nuances to student responses. In other words, students would have the opportunity to share detailed reasons for their re-enrollment decision, providing for a richer understanding of the second- or later-choice concept.

### **Qualitative Approach**

Most are familiar with two different research methodologies – quantitative and qualitative. Put simply, quantitative analyses use statistical tests on data in the form of numbers, while qualitative research uses words, collected and analyzed in many different ways (Merriam & Tisdell, 2016). Both techniques offer benefits and drawbacks, and their use should depend on the type of questions asked and goals of the research study (Maxwell, 2005). However, certain questions and goals lend themselves better to qualitative methods. Specifically, qualitative research is best at answering the following

intellectual goals: 1) understanding the meaning of events participants are involved with; 2) understanding the context within which participants take action; 3) identifying unanticipated phenomena; 4) understanding the process by which events take place; and 5) developing explanations (Maxwell, 2005).

As I wrestled with the topic of this study, additional questions came to the forefront that appeared best suited for a qualitative design. For example, determining why someone re-enrolled at a second- or later-choice college cannot be answered without an understanding of what led them to enroll at the later-choice institution in the first place. As such, data regarding the meaning a student placed, and the context in which the decision was made, became critical to a deeper understanding of the phenomenon. Additionally, while I could speculate regarding the reasons to re-enroll, there were likely a large variety of unanticipated factors, by me and the students, which influenced their decision to return. Finally, in order to develop an explanation for why a student made the decision to re-enroll, an analysis of how they made their decision was necessary. Thus, an investigation into the phenomenon of re-enrolling at a second- or later-choice college involved a complex analysis of interrelated data that were not captured in numbers, requiring a qualitative approach.

Having determined the qualitative approach was appropriate, I next turned to identifying which, of many, research paradigms were appropriate to address the goals of the research. Given my interest in understanding more about a shared meaning behind re-enrolling in a second- or later-choice institution, as well as understanding how students made the decision to return, I turned to several qualitative research traditions.

More specifically, the qualitative methods for this study were influenced by both the phenomenological approach, which attempts to determine the meaning behind a phenomenon, and the grounded theory approach, which attempts to develop a theory that explains an action or event. In short, this study sought to determine “(1) how people interpret their experiences, (2) how they construct their worlds, and (3) what meaning they attribute to their experiences. The overall purpose is to *understand* how people make sense of their lives and their experiences” (Merriam & Tisdell, 2016, p. 24).

### **Phenomenology.**

Phenomenology is a research method developed by Edmund Husserl in the early twentieth century “as a philosophical method for investigating consciousness” (Wertz, et al., 2011, p. 52). Husserl recognized that an individual’s consciousness made them fundamentally different than nature. A person’s lived experiences, and how they impacted their thinking and actions, could not be objectively studied using the same scientific methods used in the natural sciences. As such, he embarked on a path to develop a set of strategies that could appropriately investigate conscious experience (Wertz, et al., 2011). Due to its ability to access the phenomenon of the human experience, phenomenology has become a widely used research method across disciplines, including psychology, sociology, health sciences, and education (Creswell, 2013; Giorgi, 1997).

While there are different philosophical arguments across disciplines for the use of phenomenology, there exists some common ground. Put simply, phenomenological studies attempt to describe the common meaning, or essence, identified by separate

individuals experiencing the same event (Creswell, 2013). The essence is a mutually understood meaning behind an experience (Moustakas, 1994). It makes a phenomenon transparent and allows others to better understand what a person who experienced the phenomenon saw, felt, and even thought in the moment (Creswell, 2013; Merriam & Tisdell, 2016; Moustakas, 1994; van Manen, Higgins, & van der Riet, 2016; Wertz, 2011). Creswell (2013) asserts that documenting the essence of the experience for individuals should be the culminating goal of a phenomenological study.

In order to discover the essence of a phenomenon, Husserl argued one must adopt the phenomenological epoch (Husserl, 1931/2012). Epoch is still widely used in phenomenological research today, and it implies bracketing away past knowledge about a phenomenon (Giorgi, 1997). Moustakas described the process as “setting aside predilections, prejudices, predispositions, and allowing things, events, and people to enter anew into consciousness, and to look and see them again, as if for the first time” (Moustakas, 1994, p. 85). Before beginning the study, the researcher identifies their knowledge of the phenomenon, be it personal experience or theoretical knowledge, in an attempt to identify any personal viewpoints or assumptions that may lead to an inaccurate conclusion (Merriam & Tisdell, 2016). In doing so, the researcher opens him or herself up to receive, reflect, and interpret the phenomena under investigation (Wertz, 2011).

This study was interested in the experiences of students who enrolled, and subsequently re-enrolled, in a college they originally indicated was not their first choice. While the quantitative data, discussed in a later section, provided a glimpse into the

outcomes of students who experienced this phenomenon, it didn't provide an understanding of the nature of what it was to be a student who enrolled at a non-first choice institution. To learn more about what it means to be a student at a second- or later-choice college, first-hand data was necessary. Therefore, this study employed aspects of phenomenology to ascertain the meaning, or essence, of enrolling or re-enrolling at a second- or later-choice college.

### **Grounded theory.**

The grounded theory research methodology emerged from studies on death and dying by the sociologists Barney G. Glaser and Anselm L. Strauss in the late 1960s (Charmaz, 2006). At that time, the field of sociology and many other social science disciplines had shifted towards viewing qualitative research with distrust. "Quantitative researchers had become skeptical about the value of qualitative research, which they saw as subjective, impressionistic, and anecdotal, rather than objective, systematic, and generalizable" (Wertz, et al., 2011, p. 56). Glaser and Strauss argued against this trend, and presented the grounded theory method as a way to systematize qualitative research to generate projects that would be viewed with the same rigor as quantitative inquiry (Bryant & Charmaz, 2007). Through grounded theory, Glaser and Strauss argued, a qualitative analysis could move beyond rich description and actually generate a theory that explains a process, yet remains grounded in the data (Charmaz, 2006; Creswell, 2013; Merriam & Tisdell, 2016).

Grounded theory emerged as a method used, or at least aspects of it, by large numbers of qualitative researchers over the past 50 years (Tracy, 2012; Wertz, et al.,

2011). As a method meant to hold up to the rigorous review of quantitative researchers, it possesses a systematic approach to sampling, data gathering, data analysis, and theory development. While each is critical to a complete grounded theory design, this study used portions which best fit the research aims. As such, only two elements of the grounded theory will be elaborated upon – coding and memo-writing.

Coding in quantitative research generally involves creating predefined codes “to qualify certain bits of data” (Kelle, 2007, p. 193). This enables researchers to test hypotheses. The grounded theory method, on the other hand, was developed to generate theory. As such, it is necessary for coding in grounded theory to emerge from the data (Charmaz, 2006; Kelle, 2007; Merriam & Tisdell, 2016). In practice, coding in grounded theory begins with no predefined codes and starts with the first piece of data collected. The researcher creates codes by naming and defining a meaning for each word, line, or segment of data (Charmaz, 2006). As new data is added, for example an additional interview or focus group, it too is scoured for new meanings, while also compared with the original data to find similarities and differences. This is known as the constant comparative method and is considered a hallmark of grounded theory (Creswell, 2013; Merriam & Tisdell, 2016). Following the initial coding, axial coding occurs, which is where the codes are re-examined to find the most significant or frequent codes. The focused codes, which resulted from axial coding, enable the researcher to sort and synthesize the data into a coherent, emerging analysis. Finally, theoretical codes are developed which help conceptualize how the focused codes developed during axial coding are related to one another in an integrated theory

(Charmaz, 2006; Kelle, 2007). Thus, coding in grounded theory begins with a very open process and involves a cycle of reflecting and revising into more meaningful, and universal, codes that capture the major concepts of the phenomenon.

Memo writing is another fundamental element of grounded theory research. Memos are research tools which enable a researcher to methodologically link, distill, and interpret the data into a coherent theory (Lempert, 2007). Memos are extended notes to oneself where a researcher discusses and analyzes the data, codes, and other elements of the study (Charmaz, 2011; Creswell, 2013). Memoing in grounded theory begins in the early parts of a research study and continue throughout, growing more precise and analytical as the research topic emerges. In early memos, the researcher is generally speculative – asking questions of the data, posing meanings, and analytically struggling with the data and their interpretation (Lempert, 2007). As the process moves forward, the researcher is able to use the memos to identify patterns that are emerging, to reframe and develop more focused codes, and to ultimately uncover a theory (Charmaz, 2006; Lempert, 2007). Memos are where the researcher tests their initial theories, identifies anomalies in the data worthy of additional consideration, seeks linkages, and generally wrestles with the wealth of information at their fingertips. The benefit of this being in a written form, over a thought exercise, is that the narrative can be easily referenced and used to guide the initial draft of a resulting paper.

This study was interested in the experiences of students who enrolled, and subsequently re-enrolled, in a college they originally indicated was not their first choice. In particular, the reasoning behind why a student enrolled and subsequently re-enrolled

in a second- or later-choice college. Phenomenology, which was previously discussed, seeks to create a detailed account behind the meaning of an event. It does not attempt to develop theory (van Manen, Higgins, & van der Riet, 2016). Grounded theory studies do attempt to develop a theory, or explanation, for a process (Creswell, 2013).

Therefore, this study employed aspects of grounded theory to attempt to develop a theoretical explanation for enrolling or re-enrolling at a second- or later-choice college.

### **Epoch.**

Creswell (2013) explains the researcher is a critical part of the qualitative study. The researcher conducts interviews, creates survey questions, and observes behavior. Additionally, these factors, and the researcher's motives while conducting the research can impact what one considers to be valid results (Maxwell, 2005). Therefore, it's important to recognize what biases you bring to the data and your interpretation; not so that you can "control" for them as in quantitative research, but so you are cognizant of factors you may overlook or see as not valid. This is also known as the phenomenological epoch (Giorgi, 1997; Husserl, 1931/2012; Merriam & Tisdell, 2016; Moustakas, 1994; Wertz, 2011).

As such, the researcher acknowledges a belief system grounded in postpositivism. This approach tends to be logical and cause-and-effect oriented, while guided by a priori theory (Creswell, 2013). I do believe that reality is observable, objective, and can be examined using well-planned, rigorous investigative methods. However, the social constructivism framework also influenced my decisions in this study. Social constructivism, also called interpretive research, is the belief that there is



no single, observable reality, but that reality is socially constructed (Merriam & Tisdell, 2016). In practice, this involves allowing for broad and general questions, which prompts interaction between the study participants. By listening to these interactions and gaining an appreciation for the context in which participants live and work, the researcher is able to make an interpretation of what they find, albeit in the context of their own background and experiences (Creswell, 2013). In other words, the frameworks from which I conducted this study relied on a logical, organized, and structured interview and data analysis method that supported participants to construct the meaning and processes that drove their decisions.

In addition to my theoretical leanings, it is also important for me to discuss my personal experiences regarding the second- or later-choice college phenomenon. By acknowledging these experiences and initial beliefs, I hopefully lessened the possibility of past experiences unduly influencing the findings of this study. Personally, I have no experience with attending a second- or later-choice college. I attended the college I identified as my first choice. However, I have worked with several students who acknowledged the institution they were attending was not their first choice. These conversations actually spurred the idea of this dissertation study. I was fascinated by these students' discussions of enrolling at the institution, their initial plans, and reasons for remaining at the college. Based on these conversations, I expected the qualitative data in this study to focus on peer-to-peer activities influencing re-enrolling. In other words, I anticipated the types of activities coming out of the Division of Student Affairs to be the main drivers of re-enrollment. This was especially true after conducting the

literature review for this study and learning more about the theoretical and individual factors that impact student persistence. Thus, I entered the qualitative study with the knowledge that I would naturally lean towards involvement as a solution and needed to be aware of this this assumption in undertaking the study.

### **Study site.**

This study was conducted at a single location – a public, regional, open-admissions technical college in the northeast of the United States. Furthermore, the institution has a specialized focus on applied technology across its more than 125 baccalaureate and associate degree majors. Fall enrollments at the institution averaged 6,492 students, or 5,848 full-time equivalents, over the 10-year period spanning fall 2005 to fall 2014. This included an average new first-year class of 2,775 students (headcount). Fall-to-fall retention rates for first-time students during this same 10-year period averaged 62.8% (internal report, 2016). Due to the institution's history of securing jobs for graduates, a desirable reputation among employers, and the focus on enrolling students directly in career-focused classes in the first semester, greater than 75% of students selected the institution as their first-choice college (internal report, 2012).

Conducting the study at this one institution provides both benefits and drawbacks. For some, single-institution studies may lack external generalizability. In addition, the technical nature of the academic programs at the study site further narrow the focus of this research. Nonetheless, the subject of study, increased enrollments at second- or later-choice colleges, is a growing trend found in national datasets (Eagan,

Lozano, Hurtado, & Case, 2013). Furthermore, the fact that the majority of students at the study site (greater than 75%) chose it as a first-choice institution, as indicated on their response on the CIRP – The Freshman Survey, may enhance the impact of attending a second- or later-choice institution (internal report, 2012). In other words, when surrounded by students who are at their first-choice institution, second-choice students may feel a heightened sense of isolation, incongruence, or ill-fit, exacerbating the desire to prematurely depart. Finally, little research of any sort has been conducted on this phenomenon. This study, while admittedly limited, will add to that research base generating greater impetus for future research.

### **Sample.**

A database of information provided on the admissions application and enrollment data was used to gather the sample for the qualitative study. The Institutional Research Office at the study site developed a database which contained the fall 2014 admissions application, as well as the enrollment status of students for the fall 2014, spring 2015, and fall 2015 semesters. This initial dataset included 5,812 applications. The researcher then queried the list to find students who 1) ranked the institution as a second- or later-choice on their fall 2014 admissions application, 2) enrolled in fall 2014 and completed the fall 2014 and spring 2015 semesters at the study site, and 3) re-enrolled for the fall 2015 semester. This query resulted in a list of 48 students. The list, which contained personally identifiable information on the students (e.g. name, e-mail address, etc.), was further analyzed to determine which students were enrolled for the current, spring 2016, semester. Students who met these four

criteria were considered accessible, and therefore, eligible for inclusion in the study. The final sample population, which would be considered a purposeful, convenience sample, included 39 students. Demographically, the total population was 97% white, which is higher than that institutional average of 89% white. In addition, the total sample population was 64% male, which matches the institutional average exactly (internal report, 2015).

This sample population is not the same that was used for the quantitative analyses, which are discussed in forthcoming chapters. There are several reasons for the differing sample populations, chief among them is the availability of study participants. Data from the 2006 iteration of the HERI – The Freshman Survey were used in the quantitative portion of this dissertation. That dataset was used because it was the most comprehensive set available within the least 10 years at the study institution. While talking with these subjects about their experiences and reasons for returning to the institution would be ideal, it was not possible. First, it is highly probable the students would have graduated from the institution and moved into alumni status. Therefore, information to contact these students would only be available if they had self-reported it to the Alumni Affairs Office. Second, given that 10 years had passed since the student made the decision to re-enroll, it is unlikely they would remember the nuanced factors which would have pushed them towards their re-enrollment decision.

In order to answer research question one in the most comprehensive and data-rich way, I sought subjects who had more recently made the decision to re-enroll (i.e., current students). Not only would the reasons for and experiences with re-enrolling be

based on recent experiences, these students were also more readily accessible for participation in the study.

### **Data collection.**

Focus groups provided the data collection method used for the qualitative portion of the study. Focus groups, as opposed to individual interviews, generate data through the interaction of group participants (Finch & Lewis, 2003). As participants answer questions initially posed by the moderator, it may cause another participant to reflect upon his or her own experiences and add to the conversation. "As the discussion progresses (backwards and forwards, round and round the group), individual response becomes sharpened and refined, and moves to a deeper and more considered level" (Finch & Lewis, 2003, p. 171). Ideally, this process continues to the point where the group is working together, asking questions to each other, clarifying responses, and generating additional data and insights, leaving the researcher as a listener rather than a participant (Finch & Lewis, 2003). Since the topic of study, re-enrolling at an institution that was not a first-choice, potentially involved a complex and nuanced decision-making process, it was determined that the focus group would offer the greatest ability to generate rich data.

Given the researcher's knowledge that many college students have busy class, personal, and work schedules, two focus group sessions were originally scheduled on different days of the week. The sessions were conducted at times known to be infrequent for academic classes in the early evening, specifically a Tuesday and Wednesday evening beginning at 6:30pm. The purpose of two session dates and times

was to enable a greater number of students to participate in a focus groups. Sessions were planned to last approximately one hour; however, room reservations were made for more than two hours to enable the groups ample time to share and discuss. The recruitment goal for each focus group was between six and eight participants. This is a typical size for focus groups, though optimum size is often dependent on the complexity of the issue, the likelihood of individual participation, the population of study, and the extent of information required by the researcher (Finch & Lewis, 2003).

#### **Sample recruitment.**

Following approval from the Penn State Institutional Review Board, recruitment for the focus groups began with an e-mail sent via the researcher's Penn State e-mail address to all 39 members of the sample population. All members of the population were included in the initial recruitment because of the small number of subjects in the population and the need to populate at least two focus groups. The initial e-mail was sent approximately two weeks prior to the scheduled focus group dates. The e-mail included a brief overview of the study and what the focus group would entail. It also notified students that they would receive a \$10 gift card from a gas station/convenience store near campus that is frequented by students. No responses were received from this e-mail within three days. A follow-up e-mail was then sent to the entire sample population from the researcher's study site e-mail address in the hopes of spurring participant interest. This e-mail also resulted in not a single response.

The failure to receive even an "unsubscribe" e-mail from the initial recruitment e-mail barrage indicated this recruitment technique was not effective for the sample

population. After further consideration, it was determined that a personal appeal to eligible students from an acquaintance might be more successful. In addition, the compensation for participation was increased from a \$10 to a \$20 gift card, and refreshments were made available during the focus group sessions. Professional contacts, individuals who have a preexisting relationship with the student (e.g., instructor, adviser, coach, etc.) were identified and provided a letter of invitation to hand-deliver to the possible subject. These contacts were identified by reviewing student academic schedules for the current semester. The researcher then supplied a letter to each professional contact, asking for them to deliver it to the student. Each professional contact was instructed that no undue pressure should be placed on the student to participate in the study. In addition, any questions regarding the study were to be directed to the researcher and not answered by the professional contact.

A copy of the letter given to the student is included in Appendix A. The letter explained the study to the possible participant and allowed them to select a focus group date/time and communicate that preference back to the researcher via e-mail or by placing the card in campus mail. When a student responded that they would participate, a confirmation e-mail was sent to the student. Additional reminder e-mails were sent to all possible participants approximately two weeks before, and one week before, the focus group dates. These e-mails included information about the study and that they should have received an additional letter from the professional contact in the preceding week or two. Finally, reminder e-mails were sent to students the day before their

scheduled focus group. A total of 15 students, 7 for focus group A and 8 for focus group B, originally agreed to participate in the focus groups.

**Focus group procedures.**

As participants arrived to the focus group, the researcher discussed the informed consent document with each participant individually. The participant then had an opportunity to ask any questions about the study and to complete the consent form. A copy of the informed consent is located in Appendix B.

The focus group began with a brief explanation of the study, its purpose, the role of the moderator (the researcher) and note taker, the use of audio recorders, and how participant responses would be kept confidential through the use of pseudonyms in the final document. With more than one participant, it was believed that some participant comments might get lost or misattributed to the wrong individual. Therefore, a note taker was used to help the researcher keep track of the information shared during the focus group. The note taker possessed all required Penn State research protection trainings and did not speak during the focus group sessions.

Each focus group was guided by a script that is available in Appendix C. The focus groups focused on the reasons students initially chose to attend an institution that was not their first choice, their original plans for degree completion upon matriculation, their level of involvement in academic and social activities during their first year of study, and what influenced them to return to the institution for a second year. The session concluded with a final question that enabled participants to share anything else about their experience that was not brought forward by the questions. The recording



was then stopped, participants thanked for their time, and each was provided with the \$20 gift card. Finally, participants were informed that they would receive an electronic copy of their informed consent form via e-mail and that they could request a copy of the results of the study, in the form of the final dissertation, by replying to the e-mail.

Following each focus group, the researcher and note taker discussed the session, including first impressions of the participant answers, clarification on responses by students, and to help organize the researcher's thoughts. Following this brief discussion, the note taker left. The researcher then spent approximately one hour in the focus group room to document initial field notes and impressions from the session. The note taker typed up their notes and e-mailed them to the researcher approximately one week after the focus group session.

#### **Focus group A.**

Focus Group A occurred on a Tuesday evening in a private room within the campus library. This location was selected because it was likely familiar to all participants and offered a comfortable and quiet environment that may put the participants at ease (Finch & Lewis, 2003). Seven students were originally scheduled to attend Focus Group A. However, on the evening of the focus group, two scheduled students failed to attend and one student who had registered for Focus Group B showed up. This left six students who participated in Focus Group A. The group included two males and four females. All participants were also White, though that was not unexpected as the campus is 89% white. Student majors included the health professions (3), transportation (2), and construction (1). Four of the students participating in the

focus group enrolled in the institution directly following high school graduation. One participant transferred to the study site after spending a year at another institution, which was generally viewed as a competitor institution. The final participant took a year off between high school and college. Focus Group A lasted approximately one hour and five minutes.

### **Focus group B.**

Focus Group B occurred on a Wednesday evening in the same location as Focus Group A. Eight students were originally scheduled to attend Focus Group B. However, on the evening of the focus group, four registered students failed to attend. This left four students who participated in Focus Group B. The group included two males and two females. Once again, all participants were White. Student majors included the health professions (2) and construction (2). Three of the participants enrolled in the institution directly after high school, with the final participant spending four years in the workforce before enrolling. Focus Group B lasted approximately thirty-four minutes. Please see table 1 for additional focus group participant demographic attributes.

Table 1  
*Focus Group Demographics*

<i>Pseudonym</i>	<i>Gender</i>	<i>Race</i>	<i>Major</i>	<i>Original Degree Plan</i>
Bill	Male	White	Construction	B.S.
Debbie	Female	White	Health	A.A.S.
Anna	Female	White	Health	B.S.
Jane	Female	White	Transportation	A.A.S.
Ted	Male	White	Transportation	A.A.S.
Beth	Female	White	Health	A.A.S.
Charlie	Male	White	Health	B.S.
Melissa	Female	White	Health	A.A.S.
Susan	Female	White	Construction	A.A.S.
Jeff	Male	White	Construction	A.A.S.

### **Data analysis.**

Data analysis began with the transcription and coding of the focus group recordings. Each focus group was transcribed “clean verbatim” by a third-party transcription service that is partnered with the analysis software used for coding. A “clean verbatim” transcription removes unnecessary filler words, such as “like” and “umm”, while maintaining grammatically incorrect language (TranscribeMe, Inc., 2016). Use of a third-party transcription service was authorized via the Penn State Institutional Review Board. After receiving the transcriptions back from the transcription service, the researcher read them to gather a general sense of the sessions and to clarify any errors with the transcription.

After reviewing the transcriptions and deeming them accurate, coding began using the NVivo® software package. NVivo® is a commonly used data analysis package that allows qualitative data to be analyzed, organized, and managed (QSR International Pty Ltd., n.d.). The coding method employed was based upon the grounded theory methodology, which began with open-coding, moved to larger categorical codes, and finally used axial coding to synthesize the entirety of the data. A complete description of the coding process will occur in Chapter 4.

### **Trustworthiness of the Data**

A critical consideration in qualitative research is determining if sufficient data is available to answer the research question. There is no concrete definition that allows a researcher to know how much qualitative data is enough to analyze (Fusch & Ness, 2015). Instead, the researcher should attempt to find saturation, the point at which no

new information is being obtained, no additional coding is feasible, and there is enough information to replicate the study (Fusch & Ness, 2015).

The researcher determined that saturation occurred in this study using several means. First, a data collection method known to generate rich and thick data that leads to saturation was used – the focus group (Fusch & Ness, 2015). The openness of the focus group supports the gathering of multiple perspectives on a topic. This method allows for a large amount of data to be gathered in an efficient manner and uses a group process to make participants feel more at ease and willing to share (Finch & Lewis, 2003; Fusch & Ness, 2015). Both focus groups started with students sharing their individual experiences, but later moved towards interacting with one another through asking questions of each other or adding additional details to the answer of a fellow participant. This was evident in the transcripts as students shared additional details, or as they focused on topics not mentioned in the focus group protocol. Through that process, additional details regarding the re-enrollment process revealed themselves, lending credibility to the notion that both focus groups provided thick and rich data.

A second indicator for achieving data saturation is through the development of no new codes or details. This indicator was also present in the data as the initial open codes for both focus groups were remarkably similar. While there were a few “new” codes identified in focus group B, it was later determined through analysis that the majority of these codes were slightly different variations from those used with focus group A. In other words, the coding differences were largely a result of the initial interpretation by the researcher.

Another method employed in this study to assess the acceptability of the data is that of member checking. Member checking is a strategy used to assess the accuracy of qualitative findings by asking participants to review parts of, or the essence of, the findings developed by the researcher (Creswell, 2013). In this case, the description of a framework for re-enrollment was shared with each of the focus group participants. Participants were asked to provide feedback on the framework, including if it captured their individual reasons for re-enrolling, if there were any aspects of their experience missing from the framework, and if they felt any areas needed further expansion. Eight out of ten participants confirmed that the framework captured their thought process and reasons for re-enrolling at the study institution, with several adding additional clarifications to their remarks and the model. Confirmations came from both focus group populations, indicating a common understanding across both groups was achieved.

A final consideration for stopping data collection was a practical one – it seemed improbable that participants would be available for another focus group. Combined, focus groups A and B comprised 26% of the available sample population. An additional four individuals registered to participate, but failed to attend, nor follow up with any communication regarding why they were unable to take part, or to confirm a continued desire to participate. These four individuals would have increased the response rate to 36%. In addition, requests for member checks from the students who did participate were also met with difficulty. Numerous e-mails and personal outreaches by the researcher and the previously used professional contacts were conducted over a four-

week period in an attempt to garner a response from the students who already participated. In the end, only eight of the ten students responded, despite all being aware follow up questions may be directed towards them. The struggle with gathering participants willing to participate in this study has previously been discussed. However, it is mentioned again because it too may indicate data saturation. In other words, every eligible participant who desired to take part in the research study was likely already included. Appeals for participating in the study, be it through altruism (help out a fellow student) or material gain (gift card and snacks), in person or electronically, were ignored by the majority of the sample population.

Based on the belief that the dataset was rich and thick enough for analysis, that saturation likely occurred, that focus group participants confirmed the developed framework, and that there appeared to be no other eligible participants willing to take part in the study, the researcher believed enough data was collected to effectively answer research question one.

## **Conclusion**

Research question one used qualitative research methods, which were influenced by phenomenology and grounded theory, to identify why students initially enrolled and re-enrolled in a second- or later-choice college. Focus groups were conducted on a sample of current college students who indicated on their admissions application that the study institution was not their college of first choice. Analysis of the data led to the development of several themes which help us better understand and

explain students' decisions to enroll and re-enroll at a non-first-choice institution. These results will be discussed in greater detail in Chapter 4.

## CHAPTER 4: QUALITATIVE RESULTS

This research study included separate qualitative (Study A) and quantitative (Study B) analyses of factors that impact persistence for students at second- or later-choice colleges. This chapter will discuss the results of the qualitative analysis done to inform research question one. Research question one is as follows: *What influences students to re-enroll in an institution that was not their first-choice?*

### **Coding**

This study employed elements of the grounded theory methodology to sort, organize, and analyze the data collected during the focus group sessions. Following an overall review of the focus group transcripts, NVivo® was used to code the data. This process began with open coding. Open coding is when the researcher reviews the data, comparing statements to one another, searching for patterns, and developing any code that fits the emerging data (Charmaz, 2006; Holton, 2007). In addition to coding, memos were written by the researcher that documented initial impressions of the data, including questions to ponder, possible explanations for student responses, and elements that may be part of a theory explaining second-choice college re-enrollment. This too is a major feature of grounded theory research. A sample memo is included in Appendix D. Open-coding was performed on each focus group transcript and the field note summaries. This initial coding process resulted in 30 codes, which are listed in Table 2. A sample of the coding used for this study is available in Appendix E.



Table 2  
*Initial Codes*

Code	Description
Activities	Activities that may influence re-enrollment
Benefits of Attendance	Benefits student see to a study institution education
Positives	Positive experiences at study institution
Cause	Motivator/reason student indicated they returned for a 2nd year.
Choice	Things that impact/could have impacted student choice of college
Accident	Discovered study institution by accident
Better Ranked	Colleges ranked higher in student's initial choice set
Drawbacks of high choices	Reasons students ruled out the colleges that were higher on their list
Finances	Thoughts regarding finances
Found study institution	How student discovered study institution
Not 1 <sup>st</sup>	Information pertaining to study institution's rank
Not considered	Reasons students didn't first consider study institution
Reasons to enroll	Reasons to enroll at study institution
Search	Comments on the college search process
Transfer to study institution	Comments on transferring into study institution
Considering transfer	Student thoughts regarding transferring away from study institution
Current	Students current feelings regarding their enrollment
Disengaged	Things that may motivate students to disengage with the campus
Lack of connection	Statements that reveal a lack of connection to the institution
First impression	Initial thoughts about study institution
Housing status	Student's housing status
Major	Student's major
Motivation	Why students try/do well
Grit	Student comments regarding the reality of why they are enrolled and that things won't stop them from finishing.
Negatives	Things students don't like at study institution
New Ranking	Current ranking of study institution
Original plans	Plans upon first enrollment at study institution
Plans during enrollment	Student plans regarding their enrollment
Re-enroll	Reasons students re-enrolled for a second year of study
Reasons to Return	Reasons students returned for a second year

Following the open coding process, the codes were then re-evaluated in an attempt to identify larger conceptual indicators that represented the data in a more meaningful way. For example, it was found that 11 codes spoke about the larger concept of college choice (Choice, Accident, Better Ranked, Drawbacks of High Choices, Finances, Found Study Institution, Not 1<sup>st</sup>, Not Considered, Reasons to Enroll, Search, and Transfer to Study Institution). These separate codes were aggregated together to create a conceptual code on college choice. Similar aggregation occurred for lack of connection to the institution, motivation, plans upon initial enrollment, and reasons to re-enroll. This process provided a list of broad codes that give some explanation regarding being a student at a second-choice college. Specifically, themes around college choice, re-enrollment decisions, plans upon initial enrollment, current feelings about the institution, benefits and weaknesses of the institution, and out-of-class activities were discovered.

While the coding that occurred before this step was intended to elicit large, conceptual categories that help explain the phenomenon of re-enrolling at a second-choice college, axial coding was used to make connections between the conceptual categories in an attempt to explain the action of re-enrolling at a second- or later-choice college. Axial coding generally focuses on the conditions that lead to a phenomenon, the context where the decision is made, the actions carried out by the participant, and the consequences of those actions (Kendall, 1999). For the purpose of this study, the data represented by the conceptual codes identified previously were re-examined, this time with a focus on identifying causes of initial enrollment and re-enrollment, intervening

conditions, or experiences, events, and circumstances that made students either question or confirm their decision to re-enroll, and strategies, the actions students used to counteract or embrace an intervening condition that challenged their ability to re-enroll. This analysis resulted in the identification of three major themes, which will guide the rest of the qualitative discussion. These themes are: 1) Why students initially enrolled in a second- or later-choice institution; 2) What kept students enrolled; and 3) How does this analysis inform our understanding of less than first-choice enrollment?

### **Initial Enrollment**

The literature review identified numerous reasons why a student may enroll in a second- or later-choice college. Perhaps they were not accepted to their first-choice college, or maybe they couldn't afford their first-choice college. Other reasons may have included a familial obligation or proximity to campus. No matter the reason, the researcher hypothesized that enrolling in a second- or later-choice college was not the student's ideal decision. As such, it was likely that students had more grandiose plans and were planning to use the second- or later-choice college as a stepping stone to achieve those plans. These hypotheses guided the research questions in this study.

However, the conversations that unfolded within the qualitative inquiry revealed multiple interpretations from participants, but each were primarily the opposite of these initial assumptions. First, reasons for enrolling at a second- or later-choice college were widespread, yet, some commonalities existed. Finances were a contributing factor in four students' decisions to enroll at a second- or later-choice college, but not the final one. Susan remarked, "I had three other schools to choose from, and I chose this one

because of the smaller class sizes. And it was cheaper for me to live at home than drive back and forth every day.” Bill shared this sentiment, explaining, “Yeah, I probably wouldn't be here if I didn't live at home, if I had to pay for housing. It's already expensive to come here and with housing, I probably wouldn't be able to afford it.”

However, many more students commented that they did not consider the costs of the institution when they were making their enrollment decisions. “It didn't really effect my decision,” remarked Charlie. Jeff agreed, “Yeah, I made sure it wasn't too far out there, but it was pretty reasonable I thought.” While cost was a contributing factor in the initial decision to enroll for a handful of students, it does not appear to be the largest factor influencing the participants' initial enrollment at this institution.

Another choice factor discussed previously is admissions selectivity, or lack of gaining admission to a student's first-choice institution. This also was not a factor for this group of students, as the students indicated they gained admission to institutions with greater selectivity than the open-admissions study site. Beth, Anna, and Bill were all accepted to a large, public flagship university. Charlie was accepted to a regional campus of the University of Pittsburgh. Ted almost attended Drexel University. Similarly, Debbie mentioned, “I applied to a bunch of good schools like you did, and I got in to the school that I really wanted to go to.” In fact, no student indicated they were denied admission to a first-choice institution.

At this point, several factors that were not major contributors to enrollment at a second- or later-choice college have been discussed. What, then, motivated these students to enroll at this institution? Overwhelmingly, students indicated the class sizes,

hands-on instruction, and job placement rates were instrumental in their decision to enroll at the study institution. While discussing a tour of her first-choice institution, Anna shared,

And then she took me over to one of the buildings where the gen eds [*sic*] are, and it was this huge auditorium, like 300, 400 students. And I thought to myself, "Oh, my goodness. How am I ever going to be able to learn anything in there?" And then when I came here and saw like the smaller class sizes, I was like, "Okay. Maybe this is more something for me." (Anna)

Ted, Jane, Jeff, and Susan also mentioned class sizes as a contributing factor in their initial decision to enroll. Upon further reflection, Ted shared more about his decision to initially enroll at the study site. "I think it was more of the hands-on side, because I was going to go to Drexel for engineering, but I don't think it was really for me, so hands-on was what got me." This sentiment was echoed by Beth, Jane, Jeff, Debbie, Charlie, Susan, and Melissa. When asked for additional details, Jane explained,

I've talked to my one friend who just graduated from another [transportation] school and he said - when I talked to him about what we have and the hands-on experiences that we get - he had one engine, we have like 30. (Jane)

Beth shared additional stories about the hands-on nature of the academic programs of study at the study institution:

Yeah, we start right off the bat. Mondays and Fridays, first semester-- I think the first week, they let us come to the hospital, we meet people, but the next second week, you're right in. So you get to just learn the equipment, the monitors, the area, I guess. You don't really know a lot so you're like a fish out of water the first semester, but by your second semester, you're doing things on your own, so it's really nice. (Beth)

Based upon these responses, students were highly motivated to attend this institution due to their ability to learn the technical programs right away, and in a tactile manner. As Beth shared, during her first semester at college she was working alongside

practicing medical professionals in a hospital setting. The group also shared that they learned about these hands on experiences in numerous ways, many through attendance at an open house, interacting with practicing professionals, or by reading information on the institution's website or in college guidebooks.

Hands on instruction, while an effective learning tool, also helps produce a desired outcome for students - a job. The reasons for attending college have been debated in the literature for quite some time. Nonetheless, many would agree a career is certainly a desirable outcome of college, if not a primary motivator for attendance. In this population of students, second- or later-choice technical college attendees, the prospect of a job upon graduating seems to be the largest motivator. Jeff worked for four years immediately following high school. In describing his reasons for selecting this institution, he stated:

I came because it was a trade school. Class sizes were small. It had a good placement rate. And going to the previous job fairs, a lot of places said they would only hire people out of here if they're going to hire people right out of school. One company I interviewed with is actually setting up a program from their company to have kids trained here, so they must like what they see. (Jeff)

Jeff witnessed, first hand, a desire from employers for the type of education provided at the study institution. Ted agreed, commenting

That's another nice [thing] about [study institution], they teach towards a job. You can go to another college and get a bachelor's degree, and then you come out like, "I don't know what I want to do." You're just stuck. At [study institution], you're going for what you want to do, and when you get out, you have an idea of a job, and you can find one. (Ted)

Several other students mentioned the solid reputation for graduates of the institution getting job offers and being valued in their respective technical fields. Additional weight was given to the institution's ability to prepare students for licensure exams.

The information uncovered in the focus groups indicated that participants made a voluntary decision to enroll in an institution that was not their-first choice. They were not motivated by cost savings to attend, nor were they denied admission to an institution they ranked better. They used criteria such as academic reputation, class sizes, instructional methods, and the ability to get a job following graduation to re-evaluate their college ranking system. These are the same types of ranking criteria the literature shows as influencing higher overall ranks for institutions. In the end, participants enrolled in an institution which, in their eyes, ranked highly based upon factors they deemed critical, yet they indicated the institution was not their first choice. This raises questions about how students view second- or later-choice colleges when making enrollment decisions. However, before examining this phenomenon, it is important to also discuss the factors that influenced students to remain enrolled at a second- or later-choice institution.

### **Experiences at a Second- or Later-Choice College**

After enrolling at a second- or later-choice college, students embarked on a path towards a college education. During this first year, students went to class, joined organizations, and participated in many new experiences – both positive and negative. As the year progressed, students were faced with making a decision – should I return or leave? The focus groups uncovered several reasons these participants re-enrolled at a

second- or later-choice college. However, before examining them, it's wise to first examine the participants' initial expectations for college and the aspects of these students first year that made them consider departing before completing their degree.

### **Initial expectations.**

The literature review revealed commitment to the institution or a personal goal (e.g. graduation) as a significant factor in student persistence decisions (Bean & Metzner, 1985; Milem & Berger, 1997; Reason, 2009; Tinto, 1993). This study affirms this assertion for students at a second- or later-choice college. More specifically, students overwhelmingly enrolled with the initial expectation to complete a degree at the study site. Anna succinctly stated,

As soon as I stepped on campus here, I was like, "Okay. I'm going to be here for my four and a half years. I'm going to work for a little, and then I'm going to go somewhere else to get my master's degree." (Anna)

Debbie echoed this sentiment, sharing, "my goal once I got here . . . was . . . 'It's fine, go for the two years, and then I could just go home.' That was really my plan, to just take the two years and leave."

When students were asked specifically if transferring away from the institution after the first semester or year was in their original plan upon enrollment, all remarked no. Rather than using their enrollment at a second- or later-choice college as a stepping stone to a more prestigious, or otherwise desirable, institution, students accepted their enrollment as a two or four-year endeavor. "Well, at first I was thinking I was going to get two years done and get my associates..." remarked Ted. Susan and Jeff agreed, both indicating their initial plans upon enrollment were to learn as much about their fields of



study as they could. Melissa added “I wanted to enjoy my time while I was here. But definitely, education comes first before everything. That's why you're here.”

In other words, upon enrolling, these students made a commitment to achieving their goal of getting an education/earning a degree. Hence, the findings so far show a group of students very similar to those one would expect enrolling at a first-choice institution. They enrolled due to academic reputation, class sizes, and a desired type of education. They also enrolled with an initial commitment to complete a degree at the study site. Yet, these students indicated in the focus groups, or on their admissions applications, that this institution was not their first choice. There will be more on these findings and the definition of first-choice colleges later in this chapter. However, attention will next be turned to events that pushed students away from their initial commitment to complete the degree and into a state of questioning their enrollment at the study institution.

#### **Reasons to depart.**

Despite entering with an expectation and commitment to completing a degree, participants experienced several events that raised doubts about continuing their education at this institution. Students viewed these events as a primarily negative experience, and one that was difficult to rectify while remaining enrolled. This doesn't mean there weren't options to remedy the situation; however, that option was less ideal to the students than leaving the institution.

A small subset of participants had issue with the physical location of the campus, as well as negative peer interactions on campus. These experiences generally focused

on the factors Tinto (1993) described as influencing institutional fit and incongruence. The physical location was actually only explicitly detrimental to one student. Ted explained "I don't really like the area here too much. It's always dark and-- I don't know. The surroundings aren't very happy or uplifting." This statement grew out of Ted's comments regarding reasons he considered transferring away from the study institution during his first year of study. Clearly, the physical location is not something that can be remedied easily by a college or university. However, Ted's additional comments reveal more location based concerns:

I personally didn't like living on campus, because I felt like I was in a prison. Because at 10:00 o'clock, the gates close, and you always had to walk all the way around to a gate when you could just walk right there, walk right into the building. I thought it was a nuisance. (Ted)

Many students begin their college careers by living on a university campus.

Within those residence hall environments are certain rules and regulations, intended to keep students safe while also building an internal community. Based on Ted's comment, it appears the study institution has a rather restrictive set of regulations for entering or leaving the residence hall. These types of restrictions can be affronting to a new college student, as many of them see college as the beginning of a new adventure. For most individuals, it is the first time they are away from home, responsible for themselves, and able to make decisions about their behaviors with little fear of consequences – from mom and dad at least. Being forced to follow strict regulations regarding how and when to come or go embodies the opposite of this new found freedom students are expecting.

Another factor students faced in regards to a negative environment was that of their fellow students. Charlie explained, “my first year really wasn't that great. ... Because my roommates were very horrendous my first semester. ... And that kind of pushed me away from wanting to stay here.” Charlie did not get along with his roommates – another common issue faced by new college students. In a review of research regarding the impact of college roommates, Erb, Renshaw, Short, and Pollard (2014) found that positive roommate relationships aided with communication skill development, protected students from stress, and served as a protective factor against other forms of psychological distress. However, it was also found that negative roommate experiences increased stress, suggested poor adjustment to college, and can be a factor in individual departure decisions (Erb, Renshaw, Short, & Pollard, 2014). Based on these data, one could surmise that negative relationships with roommate(s) would likely result in increased stress for the student, making it difficult to learn, make friends, or perhaps even be present in their own residence hall room. As such, students would begin to look for solutions to remedy the problem. While Residence Life departments likely have a set of procedures to help alleviate the problem, students are aware that exiting the situation is the quickest way to change the status quo.

Similar to location, rules and regulations are difficult to change for students, as is the behavior of others. As such, the simplest option to relieve these conditions – poor location, horrendous roommates, and overbearing rules – is to remove oneself from the environment. Participants in this study recognized this and seriously considered these negative environmental factors when making their decision to re-enroll.

However, a second, and likely more impactful negative experience for participants focused on unmet expectations. As previously discussed, students entered the institution with an expectation to complete a degree. In addition, participants were able to cite specific reasons for enrolling – small class sizes and hands on instruction to name two. During their first year, students found several areas in which these, and other, expectations were not met. These unmet expectations were so important to the participants they considered leaving the institution. This factor can be broken down into more meaningful categories, primarily issues with faculty and instruction and concerns with the academic program.

Faculty interactions have been cited in the literature as positively impacting persistence. A later section in this chapter will discuss the positive interactions participants had with faculty; however, not all interactions were positive. In several situations, students found the faculty, and their teaching methods, to be contrary to their initial expectations.

I think if I knew now what I knew before - like when you're looking for colleges - that I might have chosen another school. Because I think, along with-- this isn't [just] my program, I think. I've talked to a couple of people in our program. I think they think the same thing. As with the hands-on, they have really good professors that know the ins and outs of the programs and stuff. But when it comes to the text book material, you [the instructor] don't quite know how to maybe get the point across sometimes. So, there's a struggle in maybe learning the actual textbook material. But whenever it comes to using a hands-on, they're really good at showing you how to do that. (Charlie)

While Charlie enrolled for a hands on education, he also was expecting to learn the theory behind the actions he was performing in lab. It appears he believes the faculty are unable to provide this level of detail to him in an acceptable format, which

has made him rethink his decision to attend this institution. Susan agreed, explaining a serious concern she has about her education as she approaches graduation.

My instructor, he is very good with textbook stuff. But when it comes to the lab portion, he actually has to bring in a co-worker that's a [technician] to teach us the stuff. I feel like if I knew that from the start, I probably would have went somewhere different. Because, it feels like he's *controversé* [sic] on what he's trying to teach us. He says one thing and then the other person says another thing, so it's like, what do we listen to? What do we have to remember to take our certification exam? Because we have to pass one of those before we graduate. We're all kind of worried about that right now.

Susan's concerns are the opposite of those shared by Charlie. She believes she is learning solid theoretical information, but is lacking strong instruction in the hands on skills she will need to not only be successful in her career, but even to get her license so she can enter the field.

Bill, on the other hand, found his professors lacking in all regards to his instruction. He commented, "I wasn't familiar with most things in the field and my instructors were not much help to begin with. I had to rely on fellow classmates and my own research to get through." Ted also felt on his own for his education, stating "You ask, and they're like, 'Go look in the manual,' and you're like, 'I just did. Just tell me to do stuff. I don't know what I'm doing.' ... You got to learn a lot of stuff yourself." Other students, however, shared positive stories about their faculty's instruction methods. Jeff was a strong advocate for his program faculty, sharing

I was happy with how my professors are. It's also kind of hard to find somebody who's really good at hands-on and theory. Usually, you can find somebody that's really good with the hands-on aspect and really good with the theory part. But those, you need to take into account trying to grasp what somebody else is trying to explain to you. Maybe they don't explain it the way that you understand it. But like I said, I'm happy with the professors and the ones I have got in here. (Jeff)

From this collection of student comments, at least two different conclusions can be drawn in regards to interactions with faculty. Some students, namely Jeff, but also Anna and Beth, were happy with the level and type of instruction they received during their first year of enrollment. Charlie, Bill, Ted, and Susan, on the other hand, voiced displeasure about the type of education they received. While each student had a different concern, all were centered on an initial expectation created upon their enrollment. As mentioned previously, students cited a hands on education as a critical factor in their enrollment decision. Bill, Ted, and Susan clearly believed this to be lacking. With an aspect of a student's college experience that so meaningfully motivates them to enroll, the ramifications of a college failing in meeting the expectation can be extreme. These students came to the institution with an expectation of a hands-on education that would prepare them for a career. They stated in the focus groups that this did not occur, and that they were concerned about their prospects of being successful in their career field because of it. This would certainly motivate many individuals to consider leaving an institution. Their future career could rest on an education they feel they did not receive.

Another unmet expectation for several participants dealt with their academic programs. Briefly, students expected to be embedded within the major immediately. For many, this did not hold true, raising levels of dissatisfaction and prompting thoughts of leaving the institution.

Most of the health related majors at the study institution operate a preparatory program. These programs are meant to prepare students for the rigor of the academic

major (internal report, 2016). In addition, they serve an important purpose in keeping program numbers manageable. Nursing, for example, is an in-demand job across the United States. However, a student nurse requires hundreds of hours of clinical training. While classrooms and laboratories on campus can provide some of this training, there is a real demand for time in an actual hospital setting. Hospitals have limited numbers of spots available for student nurses to be observed and evaluated. As such, access to clinical spots in a hospital is limited. This, in turn, lowers the number of student nurses a college can educate in a given semester, creating stiff competition for students to acquire these spots.

While the existence of these preparatory, or “pre,” programs is justifiable, participants expressed a perceived lack of information and structure surrounding these programs, which raised serious concerns. This is not a trivial matter, as students within the healthcare fields make up the largest subset of students at the study institution (internal report, 2016). An initial concern shared by students was the lack of transparent information about gaining entry to the major.

I do feel like the college doesn't do as good of a job as explaining these things to people. Because if I didn't have somebody that was in dental telling me, "No, it's okay. I didn't have this done by this." Because it's really really competitive to get into these programs. (Beth)

These concerns were reiterated by Debbie, who explained she attended several trainings on the points system (procedures to gain admission to the major) but still left confused.

And it's hard, too, because they have classes on the point system. I have been to three of them my freshman year because I was confused, but even after the

couple I've been to, I was still kind of confused because sometimes it just doesn't add up. (Debbie)

The students entered the institution with an awareness of the points system for entering a health related field, however, many students lacked a complete understanding of the requirements for entering their major. In fact, students believed the preparatory program would be a rather quick and painless endeavor. While this was true for Beth and Melissa, who gained entry into their programs promptly, it wasn't for all students.

I think, initially, too, I thought-- I mean, with the points program, I wasn't sure that I wouldn't be in the first year. So I think that was a thing. If I knew it was going to take me long, I probably wouldn't have come [*sic*] here. But off of that, I didn't really understand the pre-program. They were just saying like, "Yeah, you'll be a semester or two and then you'll be in." That's kind of all they told me. So I was like, "Oh, it will only be a year, a couple classes paid I don't really need and then the program." Unfortunately, that didn't work out. (Debbie)

While Debbie made the decision to remain enrolled, the fact that they were unable to gain entry to the major led many students to depart. Debbie explained

I think that's a reason a lot of people leave, too. A lot of my friends did leave when they didn't get in. There's not that many of my friends that stayed. A lot of my friends, too, won't stay if they won't get in this semester. (Debbie)

Or, other students decided to change majors, such as Jane.

When I first got here, I was actually going for nursing, and I learned about this point system that you guys speak of, and I was like, "There's no way I'm staying here for a bajillion [*sic*] years to [laughter] maybe to get into my program. No way." So I did it half a semester for nursing. I took a bunch of stuff. And then over the summer, I found out that they had an [transportation] program, which I didn't even hear about, and I was on campus for half a semester. I switched and I went and got an interview with Gary. He showed me around, told me that they'd love to have me, and the next day, I was in [transportation]. (Jane)



Whether the student departs, remains enrolled, or switches majors, the fact they were unable to meet their initial expectations creates additional stressors on students.

I'm kind of the same thing as her, being in a pre-program. It is super stressful, which means you get really good grades. And if you don't-- like I've already retaken a class because for me, there really isn't another option. (Anna)

Students entered the institution with some knowledge that the health related programs operated on a competitive admissions basis. However, it's clear that students either felt that they received less than full information about the likelihood of gaining admission, or they misinterpreted the information they did receive. Either way, students believed that in a short time, they would be taking classes within their major. As time moved forward, and students were faced with the reality that they were not entering the program, they were faced with several choices. First, they could stick it out, earn better grades, and hope to beat out their competition in the next round of selection. This was the choice of Debbie and Anna. Another choice was that of Jane's – switch majors into one that was not competitive. This allowed Jane to still work towards a degree, and likely lowered her stress levels. In addition, it probably lessened her financial burdens as she wasn't paying to retake classes or filling schedules with “filler” classes until she gained entry to the major. The final option was that chosen by the majority of Debbie's friends – transfer or withdraw.

With each of these options, a student was forced to reexamine their original goal. In other words, student's initial expectations were not met. In order to now achieve the goal, some sort of accommodation must be made. Anna and Debbie remained resolute in their adherence to entering the medical profession. Jane

developed new goals. Debbie's friends left the institution – either to pursue their same goals elsewhere or to develop new ones. No matter the final choice, it is likely that all students who were faced with a discrepancy in their initial expectations considered various options before making a final choice.

While the preparatory programs provided good evidence of unmet expectations and their influence on second- or later-choice college students' re-enrollment decisions, it is important to point out that other academic programs also exposed students to false assumptions. A hands on education, and its importance to students, has been discussed previously on several occasions. Small class sizes were also mentioned by several students as an enrollment factor. This makes sense, as hands on applications are labor intensive, requiring smaller class sizes to be manageable. However, for reasons unknown, Jane found her classes combined.

Our classes got squished together. We did have small classes and then they put our two sections together. Now, there's 19 of us. And it's really hard with our program to have 19 at a time because we have to work on different stuff, we have different job sheets to complete, and our instructor can only be in so many places at one time. It's very frustrating, very aggravating especially when six people are trying to talk to him, and he's trying to answer your question. It's not a lot of fun at the moment. That just happened this year, but before that, it was pretty cool [laughter]. (Jane)

Due to these larger classes, Jane is no longer receiving the type of attention she desires and expected. It is leading to frustration, and likely issues learning the material. Bill also shared initial difficulties with learning within his academic program.

You see, my first day for my first semester, they just kind of threw me into my program. I knew I wanted to do it, but I didn't know anything about it. My first week, they put you in lab, they're like, "All right, go to work." I'm like, "I don't know how [laughter]. I don't know what I'm doing." The first few weeks were rough. But after the first semester, I had to stay after lab and work with the

instructors and everything, but after that-- I mean, now I'm fine. I can do everything that everyone else can, but that first semester was rough. (Bill)

Ted agreed, mentioning that little support was available to aid in his learning.

It's pretty much just all on me to get there. You got to learn a lot of stuff yourself. I don't know what you guys are talking about with getting in your majors and whatnot [laughter], but I have huge tests I have to take to get my certificate. They're expensive and you have to know everything. I have to take an OP for my power plant soon. I have to schedule-- but it's \$600 and it's a large final, from all the classes I've taken from the first year and the first semester of this year. Every single class I get tested on questions and the practical. It's really stressful to learn all that and know it all and study..... It kind of sucks that no one else can really help you other than just studying. (Ted)

Jane, Ted, and Bill all expected a different learning environment. They planned for small class sizes and supportive learning environments. These assumptions were not completely met, again adding stress to students and making it more difficult for them to be successful. Solutions for solving academic issues are generally not that simple, forcing these students to question what is necessary for them to do well at the institution and to achieve their goal. This is evident in Ted's comments, where he shows concern about being knowledgeable about the required material, but also about the costs associated with each test to prove this knowledge.

Throughout the focus groups, students provided little information regarding the strategies they contemplated to remedy considerations of leaving the institution. Instead, they were more apt to discuss the negative aspects of their experiences. Perhaps this was a result of the types of questions asked and the discussion prompted by the group, or their perceived understanding of the goal for this research. Nonetheless, students appeared focused on labeling elements of their student

experience as inherently negative, which may have acted as a force pushing against a re-enrollment decision.

The preceding conversation discussed several reasons students cited in the focus groups for considering leaving the study institution. While the reasons are compelling and fit the questions asked, it is also important to point out that at times, student responses blurred the lines between reasons to depart and positive or negative student experiences. In other words, focus groups grew beyond the questions focused on persistence and institutional choice, and uncovered aspects of the entire student experience – some of which may, or may not, influence persistence. These are two separate, but likely related concepts, and this dissertation attempts to focus primarily on those experiences directly impacting choice and persistence.

### **Re-Enrollment at a Second- or Later-Choice College**

Despite the factors previously mentioned pushing students towards a departure decision, the focus group consisted of students who re-enrolled at a second- or later-choice college. As such, there were factors that persuaded students to remain enrolled. The focus groups revealed two major ones: Institutional Experiences and Barriers to Leaving.

#### **Institutional experiences.**

Institutional experiences comprise activities and events that occurred during the student's enrollment that influenced their re-enrollment decision. The two primary motivators uncovered in the focus groups were Peer Interactions and Faculty/Staff

Interactions. In addition, an underlying theme of an expected outcome was also identified. Each of these factors will be discussed in this section.

***Peer interactions.***

Positive peer interactions were concentrated in two areas – within the academic major and outside the major. Amongst both focus groups, the former revealed itself as the avenue in which most peer-to-peer interaction occurred.

I'm sure pretty much every college has them, the major specific clubs. ... There's a club for almost every major, and they might have those at other schools, I don't know. ... But whenever I go to [major] club meetings, the kids who are here doing the cadaver lab, sitting in that [major] building for how many hours a week they're in there, I think it's a really good experience to go to [major] club meetings, and meet the students that could be me next year. They're getting me heads up like, "Hey, just so you know, do this, this and this." They kind of tell you the ins and outs of the program. Like, "Make sure you do this and you're going to probably going to need to spend the most time on this," or "You don't really need this textbook." Things like that. (Anna)

Participants shared that their involvement within major specific clubs brought several benefits. First, as Anna mentioned, it allowed new students to interact with continuing students who are within the same major. As discussed at the start of this chapter, students chose to enroll in this institution because of the hands-on education that would prepare them for jobs. As such, students tend to have a clear idea regarding the job they want to have after graduation. The education is the obvious stepping stone to achieve that plan, but also the largest risk for reaching the end goal. In other words, not succeeding with the education would eliminate the student from competing for their ultimate job. In order to counteract this risk, students seek out ways to be more successful in the classroom, and since the major is so critical to the end goal, it makes sense to congregate within academic program areas. Within these areas, students can

seek out answers to questions that directly affect their future progress. Anna eludes to this when she seeks advice on where to study and what books to purchase.

In addition to these clubs providing advice on how to be successful in the major, they also served an aspirational purpose. Most of the health related majors at the study institution operate a preparatory program, as was previously discussed. As such, there is a strong element of competition amongst the students for the limited number of program openings. Anna's comment, "I think it's a really good experience to go to [major] club meetings, and meet the students that could be me next year", now carries additional meaning. In one regard, Anna may be using the meetings to see the types of students who eventually gained entry to the major. In this way, she compared herself with these individuals to determine what her odds were for getting accepted into the major. Another use of these major club meetings was as a positive reinforcement.

Debbie shared,

I'm a pre-student, so when I see some of [my] friends get into the program, I'm like, "There is hope. I'll get in the program." That kind of lets me have hope, because I know a lot of people are like, "I have good grades and stuff, but I still didn't get in my program." So I was like, "Does anyone get in the program? How does it work? Should I even stay?" And then when I found out some of my friends started getting into the program and I got closer with my adviser, I started to realize how it works, and that I need to take a couple more steps. Once you really understand it and then you meet people in the program, like, "Yeah, I was there, and I was in pre for a couple years, but you'll get in and then you'll be able to get your bachelor's with all your classes that you took." That kind of made me think I'm not wasting my time so I'll just keep coming here.  
(Debbie)

Debbie was able to use her interactions at the major club meetings as hope. She was able to see her friends gain admittance to the major, which gave her an indication

that it was possible for her to achieve her goal. It also helped her refine the actions she needed to take to achieve her goal of getting admitted to the major.

Throughout their first year, these students attended major club meetings to learn tips for being academically successful, to compare oneself with the competition for entry to the major, and as a source of hope for continued progress. As the year moved forward, the meetings and in-class interactions began to change for these students. In regards to this, Beth mentioned,

You're with those people for however long you get your degree. If it's going for two years, it's going for four years, you're stuck with those people. So if you're in those clubs, you're with them, I think you get really attached to them and you learn things. I think that is kind of impactful. You get really close to these people, so that helps me, I guess. (Beth)

She later commented, "Yeah, they're kind of your competition, but we're here to help each other, so I like the aspect of it." Beth began to see these major-related clubs as sources of genuine friendship, camaraderie, and support. Beth no longer saw other students as just her competition, but began leaning on them for support. Jane and Anna shared similar sentiments. Ted, a student not in a competitive major, agreed:

You see everybody Monday through Friday, 8:00 to 3:00. We also, most of the time, have to teach ourselves a lot of things. So it helps to have other people there in the same situation you're in to help you through stuff, like you work it out together. (Ted)

In addition to major specific clubs, other students talked about more positive peer activities. Charlie explained that the most impactful experience for him was

...the opportunity to get out and meet new people. Because honestly, I've never really been this far east in the state for an extended period of time, and baseball has definitely helped me to be able to meet people. My degree's-- I don't want to say large, but there's quite a few people in it, so I've met a lot of people. (Charlie)

Once again, a within major peer interaction was instrumental for a student in this study. However, Charlie led with the benefits he saw by playing intercollegiate athletics – a much more social interaction than one would suspect to occur within an academic setting. When asked how important baseball was to his decision to re-enroll, Charlie stated “I don't think baseball would really hold me here. Because a lot of schools have it, so it's not like I would not be able to do it anywhere else.” This was a seemingly contradictory response. Charlie first mentions that meeting new people was the most memorable thing about his college experience, and states baseball is one way he did this. He then contends baseball is not a strong enough activity to push him to re-enroll. Melissa shared similar sentiments, claiming “I enjoyed it [Cancer Fighting Club]. I love the mission and everything behind it and the people that run it are great. But if I was torn between colleges, fun wouldn't hold me here.”

Other students mentioned non-major clubs as well, all with similar responses. For students at this institution, the drive towards the major, and ultimately a job, served as the primary motivator for almost all activities. It was already identified as a major source for initial enrollment. It appears that student peer interactions which are outwardly impactful to re-enrollment at a second- or later-choice college are those that were related to academic classes or major-specific clubs. These interactions with peers created hope, academic support, and friendships. These were all factors identified by students as positively impacting their decision to re-enroll for a second year of study.



***Faculty/staff interactions.***

Faculty/staff interactions are the second major re-enrollment motivator within the Institutional Experiences theme that came out of the focus groups. Interactions with faculty members have been previously identified as a contributing factor to student persistence (Reason, 2009). Findings from this study confirmed that faculty and staff have a meaningful impact on student persistence decisions. Data from the focus groups revealed that faculty/staff interactions were meaningful to students in several ways – as support for continued enrollment, enhanced learning opportunities, and through the acquisition of jobs and internships.

Faculty/staff offered support to remain enrolled to students who were struggling. Anna explained the bond she formed with her program staff when she was attempting to find places to acquire the requisite hours of observation for admission to her desired academic program.

I was having some trouble getting mine, and I went to my adviser, and the first thing that she did was send me to the clinical director so the clinical director could set me up with places that they knew took students. And just right from the bat, I had like a great relationship with both my adviser and the clinical director. And now, the clinical director is my adviser because I was in there all the time. We have this great relationship. I don't know, I feel like that's another motivator. ... But I just feel that having those other students there in the same situation and then having that strong bond with my adviser, it really helps me. (Anna)

Anna later commented that her adviser tries to keep her informed regarding the chances of her gaining admission to the program, offers “pep talks”, and motivates her to continue moving forward in her degree. In this way, the adviser became a proponent for the student’s continued enrollment. Anna’s adviser kept her abreast of the types of

students who were gaining admission to the major, provided a real-time assessment of her chances, and offered support when Anna experienced difficulties. This created a support system that allowed Anna to feel valued and that she had a chance to achieve her goal. This, in turn, likely served as a positive motivator to return. Put differently, a supportive relationship with an adviser enables students to feel that they are on track to meeting their goals, and that there are individuals on campus who genuinely want them to succeed. This support positively reinforces the decision to re-enroll.

Some staff members also served as effective sounding boards, influencing students to re-enroll. Jane considered transfer to another institution during her first year, but was convinced to stay by a faculty member.

I wanted to go to Indiana because my friend went there and he said that his instructors were amazing, and also Embry-Riddle has a very good program as far as I've heard. But then again, I talked to our instructors here and they convinced me to stay. They said, "Our program's better [laughter]." They were convincing. (Jane)

She later commented, "Our instructors kind of help us out. You just have to talk to them." It is likely the conversations with the faculty members were more in-depth and showed genuine support. This allowed Jane to determine that the institution was a supportive place with a strong academic reputation, hence her interactions with the faculty were a meaningful part of Jane's decision to re-enroll. Charlie shared similar experiences, mentioning,

I've run into a couple of professors who've actually taken me into the labs in the different buildings, and things, and shown me around. That's been a great experience for me, because I might run into that down the road somewhere and go, "Oh, yeah. I recognize that," or something. (Charlie)

Charlie was able to receive one-on-one instruction with technologies and labs he otherwise would not have had the opportunity to visit. Given that the hands on nature of the institution was a prime motivator for his enrollment, this extra hands on approach undoubtedly helped him feel comfortable and happy with his decision to enroll. Gaining additional perspective regarding fit with the institution through interactions with faculty or staff members served as a positive motivator for these students, influencing their re-enrollment decisions.

Other staff members took a more confrontational approach that motivated students to re-enroll. While Anna's adviser gave her up-to-date information on her chances of admission into the program, Debbie's adviser pushed her to learn this information on her own.

My adviser, it wasn't that she wasn't giving me my points [chances of admission to the major]. She just said that we should know how to do it because it's online. Well, I do have a pretty close-- now, I'm really close with my adviser, too. I think she just wanted to put more responsibility on me to get it... (Debbie)

In this way, Debbie's adviser was forcing her to make decisions, develop her own solutions, and to critically examine a situation. These are all fundamental skills required of a college educated individual. Nonetheless, Debbie viewed this initial confrontational approach with her adviser as negative. However, as time moved forward, Debbie remarked "... I got closer with my adviser, I started to realize how it works, and that I need to take a couple more steps." Debbie's adviser's approach of pushing her to find the solutions on her own, and then offering support in the background, allowed her to identify where her deficiencies resided and how to correct them. This could be viewed as a motivator to succeed.

Conversely, Beth's relationship with her adviser was so confrontational it created the potential to drive her away from the major. She mentioned, "I remember going to my adviser and her looking at me and saying, 'That's not my job to do that. That's your job.'" Rather than pushing Beth to acquire the information on her own, as in Debbie's case, it actually pushed Beth away from her adviser and perhaps the program. Luckily, Beth had positive interactions with one of her professors, which allowed her to acquire the information she needed. "I really like her because my adviser did not help me with anything. Dr. Smith [pseudonym], I feel like was my adviser last year. She was very helpful, very encouraging, too." By getting closer to this professor, Beth acquired the information she needed to remain competitive in her program. She was eventually able to gain entry to her major. Without this interaction, it is likely she would have not learned about the prerequisites to her major, and therefore, been more likely to prematurely depart from the institution.

Another way in which faculty/staff interactions positively influenced students' decision to re-enroll was through job preparation and prospects. Admittedly, this was a common theme across the entire study. Having heard other students mention a strong relationship with an adviser as a motivator for their re-enrollment, several added to the conversation. Jeff commented, "Our program's pretty tight-knit, where all the teachers do help you get jobs, or write you letters of recommendation, point out what jobs an applicant is skilled for. So, it is a pretty close and tight-knit group, I guess." This comment was a direct result of a question pertaining to the impact of the student/adviser relationship. Melissa agreed, mentioning "There's not too many of us in

our program. And by the end of it, all the staff knows you, you know them. Like, I'm on a personal level. They help you write reference letters, get jobs, find jobs, do what you need to do to get your name out there.”

Jeff and Melissa, as well as the other students, viewed the relationship with the institution in a contractual manner. The students were here for an education, which would lead to a job. Faculty assistance with reference letters, discussing the industry, and assessments of job aptitude, were a critical part of this process. By being willing to guide the students towards acceptable jobs, the faculty offered positive support for the student’s journey. The students, in turn, interpreted this as a way to increase their chances to achieve their goal. In other words, students saw the faculty’s willingness to write letters of recommendation, knowledge of the industry, and assessments of skills as attributes that would enhance their ability to get a job. Leaving the institution would take away that expert knowledge, making it more difficult for the student to achieve their goal. As such, these interactions with faculty members added value, in the student’s mind, to the institution and positively motivated them to re-enroll.

***Expected outcomes.***

Throughout the students’ first year of study, the belief that a degree from this institution was seen as highly reputable in the job market and that employers sought students from this specific institution created incentives to re-enroll. In the end, the prospect of receiving a degree from a reputable institution, and the possibility of a receiving a good job due to that, acted as a buffer against decisions to leave. This next section will explore this concept in greater detail, through the examination of three

subcategories: job placement, development of foundational skills, and institutional reputation.

The importance of getting a job following graduation has been mentioned on several occasions throughout this dissertation. This was due to the regularity in which it was mentioned by the students – as an initial reason to enroll and as a re-enrollment factor. Bill mentioned it on two separate occasions during the focus group – “I came mainly because of the high job placement after graduation.” It’s clear from the data collected that job placement was a significant mediator to continued enrollment. In other words, it was not the sole reason for re-enrolling, but it influenced other factors students considered. For example, Debbie previously shared about her unmet expectations of not being admitted to her major in a timely manner. She also explained that it was pushing her away from the institution, as it had the majority of her friends. Nevertheless, she shared

I think you do benefit from the smaller classes and stuff, too. And if you know anything about how easy it is for us to get jobs after because our school helps us out so much, it's definitely reassuring that, okay, I might be spending more time here because I'm in a pre-program, but once I get in, there's going to be jobs for me. (Debbie)

Briefly, the concern that Debbie was spending more time and money to complete her degree than she originally anticipated was being mediated by her belief that this sacrifice would, in the end, result in a good job.

That's another nice thing about [study institution], they teach towards a job. You can go to another college and get a bachelor's degree, and then you come out like, "I don't know what I want to do." You're just stuck. At [study institution], you're going for what you want to do, and when you get out, you have an idea of a job, and you can find one. (Ted)

Ted vehemently disliked living on campus and felt his instructors failed to offer him support in learning the material, yet he cited the prospect of a rewarding career as a factor in his re-enrollment. In other words, a positive job outlook by the students enabled them to overlook issues that were explicitly negative, or helped them accept and use negative experiences in a more positive manner. In turn, they viewed their time at the study institution more positively and decided to re-enroll.

Employers don't hire individuals based on the name of their college alone. In order to create opportunities for students, an institution needs to ensure its graduates have the foundational skills necessary to be successful. The belief that this too would be an outcome of completing a degree at the study institution served as a motivator for participants attending their second- or later-choice college. Jeff used this as justification for the cost of his education.

Judging by the interviews and the test that I'm taking at the facilities that I've interviewed with, I've learned enough to at least get in, and I have a good foundation to start with. I think it was worth the money and time to come here. (Jeff)

Charlie believed the type of education he received at the study site would enable him to get to work right away, or perhaps lead to quicker career advancement.

I think that the hands-on is a big portion that pushes you ahead over other people when you might be applying somewhere. A big employer of [construction] engineers is [the] DOT. I've talked to a few people that work in [the] DOT, and they say that the hands-on portion of being able to get in with the technologies and stuff-- because there's a lot of programs on the computer with AutoCAD and things like that. But if you know how to use the basic things, ins and outs of it, that pushes you ahead because they don't have to put you through the basics of all that. It just puts you right into the real thing. (Charlie)

Debbie believed that the education she received would better prepare her for the licensure exam required for her chosen career.

Like the percentage of people that fail their boards is so little up here because they're like-- I mean, we're doing hands-on things, the instructors are walking through it, they're small classes. And especially for [health care], once you're in the clinic and stuff in your second-- once you get into your second semester, you can actually work on people. And you're doing that for the whole time, so it's kind of-- they're really confident because they're like, "Well, there's no reason you should fail the boards because we're teaching you everything." And they make you get-- I know an A is like a 93. They up the grading scale. If you're getting 93 to like and 83, you know you're doing well in the class. I think they said out of like the 36, maybe 1 might fail the semester, or the boards. That means we feel good, too, because I'm not always the best test taker, but they say like, "No one fails when you're sure that you're doing what you want to do. We're making sure that you're going to be ready for them." So that's good to know. (Debbie)

All told, these examples illustrate the importance students placed on developing technical knowledge. They believed that this institution would prepare them in the best way possible for licensure, entry-level work requirements, and career advancement. In short, the education students envisioned they would receive at the study site would enable them to reach their goals. This strong content knowledge helped lessen the effects of the other persistence risks discussed.

The final arena in which an expected outcome influenced persistence of students at a second- or later-choice college was based on reputation. Essentially, participants believed that their industry peers and employers viewed the reputation of the institution as exceedingly positive, implying a degree from the institution was highly desirable. This sentiment was shared by individual practitioners:

I talked to my [medical technician] back home, and she was like, "Oh, yeah, I really wish I went to that school, but when I was younger, it wasn't finished," like



the program yet, so she couldn't go. This school looks really good for [health care]. (Debbie)

Yeah, I'm pretty confident in this being the right decision. Last summer, I walked into a company. I didn't even call them or anything, didn't email, walked in and said, "You guys hiring for the summer?" I told them I went to [study institution] and they were like, "Oh, all right. Well, you want an interview?" I was like, "Yeah." I walked in on a Friday, I started working that Monday just from saying that I went to [study institution], and I was in this program, so it carries a lot of weight. (Bill)

By employers:

All the techs there, 95% of them are graduates from [study site]. And if somebody comes in that didn't graduate from here, you can tell right away. So I think seeing techs have graduated from here and they're-- I know which ones really know the stuff. I should be learning with these people. I know that I'm going to be fine once I get my degree. (Beth)

It had a good placement rate. And going to the previous job fairs, a lot of places said, they would only hire people out of here if they're going to hire people right out of school. One company I interviewed with is actually setting up a program from their company to have kids trained here, so they must like what they see. (Jeff)

And by the general public

I've always heard good things about it and-- I don't know. I've just never heard anything bad come from [study site]. (Melissa)

Wherever students looked, they saw positive outcomes based on the reputation of the institution. Whether it was from individual practitioners, major employers, or friends and neighbors, students perceived the reputation of the study institution as a major advantage. In other words, many outside the institution would perceive the student's degree positively, which would likely open doors to future career opportunities and prosperity.

Students viewed the study institution as one with a positive reputation, imparting strong technical expertise, and facilitating a plentiful job outlook. This, in turn, made them believe that completing a degree at the study institution would be advantageous to their future plans. As such, this belief mediated concerns that were pushing students away from the institution, or strengthened factors that were pulling them back. However, an expected outcome is also a delayed gratification event. As many students today are much more interested in instant gratification (Alsop, 2014), this factor is not likely solely responsible for the persistence decisions of students at a second- or later-choice college. However, it is strong enough to weave itself throughout all the factors discussed in this section, making both major and minor adjustments to a student's decision to re-enroll.

#### **Barriers to leaving.**

In addition to institutional experiences and expected outcomes that motivated students towards re-enrollment, the qualitative results also uncovered barriers to leaving which motivated students to re-enroll. As opposed to positive experiences that encourage students to remain enrolled, such as the creation of a strong friendship or good grades, barriers to leaving are experiences that are not necessarily advantageous, but are better than their alternative. In other words, barriers represent experiences that resulted in negative outcomes, or at least have the potential to be costly to the student. In order to avoid these negative outcomes, students viewed re-enrollment as their best option, or more colloquially, as "the lesser of two evils". Barriers to leaving fall into two

broad categories: Prospect of Starting Over and Breaking Norms. Each will be discussed in greater detail.

Prospect of Starting Over barriers included concerns that leaving the institution would create additional transaction costs – either through additional time spent to earn a degree, financial costs, or loss of college credit. Financial cost has been discussed previously, as it is often cited as a reason for initial enrollment as well as a factor in student departure decisions. In regards to initial enrollment, financial costs were not a major concern for students in the qualitative sample, as discussed previously. This trend continued with the reasons for re-enrollment. Specifically, the cost of the study institution only impacted Debbie’s re-enrollment decision, “I’m being helped financially from the school so that’s going to make me come back.” The other students shared Beth’s sentiment regarding cost: “it’s a motivator for me to pass everything [laughter]. I don’t want to have to redo a whole another [sic] year or something.” This comment embodies the cost perspective as discussed by the students. While students were not initially motivated by the financial cost of the institution, they did believe that leaving the institution, through transfer or stopout, would result in added financial costs. These added costs were viewed more negatively.

For example, going to a competitor institution out-of-state would have resulted in higher tuition costs. This was one reason Jane decided to stay at the study site, “I was going to transfer also to Embry-Riddle or to a couple [transportation] schools in Ohio, or Indiana, but I didn’t do that because of out-of-state tuition. Don’t want to do that.” Jane did not want to have to pay more money for a similar education to what she was

receiving now. Ted agreed, commenting that leaving after the first year would have meant he "...wasted lots of time and money for nothing." Debbie shared a similar sentiment, implying she stayed "...because it would be a waste to throw away all my credits I've earned from my bachelors." While the cost of education wasn't a major factor for either enrollment or re-enrollment for students at a second- or later-choice college, the concept of "wasting" money by not completing the program was a major factor driving re-enrollment decisions. Students had already spent a great deal of money on their education, and they wanted to get something for that investment. Leaving raised the potential for increased spending, while also providing them with little to no return on their initial investment. It was therefore financially smarter to re-enroll and complete the original degree program.

Leaving the institution also increased the possibility of adding time to completing the degree. Bill succinctly stated, "I figured once I got a year done, I might as well finish it because it's going to take too long to do anything else." Debbie concurred, sharing "If I leave here, it's like starting over, so why quit now just because it's getting hard?" Starting over, be it in the job market or at another college, would have resulted in additional time to achieve their goal. As discussed previously, these students possessed a goal of getting a good job within a technical field. They saw the education at the study site as the best way to achieve the goal. There are other ways to achieve the desired job, but it would require additional time and effort. However, millennial students, those born in the 1980s and 1990s, are known for a need for instant gratification. They desire raises and promotions on a regular basis, and with the ubiquitous nature of Facebook,

cell phones, and other social media platforms, no longer have patience when awaiting an answer or trying to achieve a desired goal (Alsop, 2014). As such, it's likely they also desire the quickest path to achieving their goal – which is probably education. Thus, in weighing the decision to re-enroll, students looked at it as “more time vs. less time” and decided on the least timely option – re-enrolling at the study site.

The final factor that is included in the prospects of starting over concept is that of re-taking courses. This includes elements of the two previous factors, as taking courses inherently involves time and money to pay for them. However, those factors aren't as strong for all students. In other words, some students are willing to re-take classes (and the added costs and time), if the outcome is truly desirable. For this subset of students, the concern was the number of classes they would have to re-take. It appears there is a definitive number where the benefits of going elsewhere no longer outweigh the newly added financial and time costs. While that number is likely different for every student, and it wasn't uncovered in this study, what was found was a serious concern regarding the amount of courses that would need retaken.

Charlie stated his “...credits wouldn't have transferred. .... I would have had to re-start from scratch, so that was more of a driving factor not to transfer.” Susan agreed, explaining “I was looking into a different school, and my credits here wouldn't transfer, so I'd have to retake the classes over again. I didn't want to waste the money on classes I already took.” It appears “starting over” was the driving force when it comes to transferring away from the initial institution. Had their credits been transferable, it is possible that Susan and Charlie would have transferred. Debbie also made an allusion to

this when she mentioned “I think I would still continue here, because it would be a waste to throw away all my credits I've earned from my bachelors. .... They don't transfer well.”

These are particularly interesting statements, as there has been a drive for classes to be easily transferable nationwide. Several states have created specialized offices and websites to promote transfer between public and private institutions of higher education. A quick internet search revealed programs in New Jersey ([www.njtransfer.com](http://www.njtransfer.com)), Ohio, ([www.ohiohighered.org/transfer](http://www.ohiohighered.org/transfer)), Pennsylvania ([www.patrac.org](http://www.patrac.org)), and South Carolina ([www.sctrac.org](http://www.sctrac.org)). The reasons for students experiencing difficulty transferring their coursework may be varied, but could derive from one of two reasons. First, the highly technical courses at the study site may be irrelevant to a different type of educational institution. For example, a pipe welding course likely offers little benefit for a student transferring to a liberal arts college, albeit outside of an open elective. Second, there are often grade restrictions attached to transfer arrangements. For example, the study institution will only accept transfer grades earned with a ‘C’ or higher (internal report, 2016). It is possible the students who investigated transfer were also struggling academically, making them ineligible for transfer to most other institutions.

Perhaps there were other reasons for a lack of transfer credit being awarded to these students. However, most seem to indicate a need to start over – by changing majors or re-taking unsatisfactory classes – was an experience these students wanted to avoid. For some, the inability to transfer served as a call to action. Susan mentioned that

her inability to transfer actually gave her “the drive to stick it out. Because instead of transferring to a different school and starting from day one all over again, just finish out.”

Findings from these focus groups indicate that concerns regarding starting over served as a strong barrier to leaving for students at their second- or later-choice college. Whether students foresaw an increased time to complete a degree, increased costs at another institution, or additional coursework due to lack of credit transfer, students were uninterested in the prospect of restarting their college career. Thus, the negative outcome of leaving the institution was a greater motivator than the positive aspects the students envisioned through leaving. They then chose the best – cheapest, quickest, easiest – option to achieve their goal: re-enrolling.

The second barrier that influenced persistence for second- or later-choice college students was named Breaking Norms. This barrier included student concerns that leaving the institution was the opposite of what was expected. Briefly, students believed society, family, and friends expected them to be in college. Leaving would break those social norms, as well as create angst amongst the students. For instance, Ted mentioned “I don't know what I'm going to do-- what I would've done with myself if I didn't come back.” With the rise in the number of students attending college each year, it appears that many children are raised with the expectation that they will go to college, and implicit with this assumption is the belief that they will finish. As such, students from an early age have a plan to go to college. With such an embedded belief, it is likely students failed to develop a backup plan. In other words, there was an

expectation to enroll and finish college. Leaving prematurely would upset that original plan for the student and leave them floundering without direction, perhaps for the first time in their life. This is eluded to in Jane's comment, "I'd probably stay here because I'm not really sure where else I'd go..." A directionless life is a scary proposition for most, especially young adults who have been raised with a set of clear expectations and goals, as well as solid plans to achieve them. Students therefore had the option of choosing the known, completing a degree, versus the unknown, what they would do with their life without a college education, leading them to choose the safer option, re-enrollment.

In addition to an expectation to be enrolled in college, students also possessed an expectation to complete a degree. Bluntly, degree completion is generally a goal of college enrollment. In addition, it has already been discussed that these students are motivated by the opportunity to acquire a good job in a technical field. Leaving the institution violates these two beliefs – they did not complete the degree as expected and they lost out on the opportunity for the job they desire. Here again is a barrier to leaving, as this outcome is not as ideal as its alternative. When asked why she returned to the institution, Susan matter-of-factly stated, "I wanted to graduate with a degree in [healthcare field]." In other words, leaving the institution would result in not achieving the goal of a job in a technical field.

Finally, there was a common expectation from parents, friends, and family members to succeed. Anna mentioned "I feel like the fact that my mom is pretty much paying for my tuition by working at [affiliated institution], that's what motivates me to



do well, because I don't want her 75% discount to go to nothing because I'm not doing well. Debbie also agreed with this, mentioning "I'm [from] a very low-class family. I share a room with my two brothers. We're all in the same room because my mom wanted to turn the heat off in my room. I struggle financially with everything," while describing the struggles she and her family have undertaken for her to remain at the study institution. The families of both these students made conscious choices to support their education. Leaving college without the degree would have been a devastating blow to familial expectations. This concern of letting down friends and family also served as a barrier to leaving. In other words, the prospect of disappointing family who worked hard to enable the student to attend was considered dreadful. The best solution to avoid letting down loved ones, therefore, was to remain enrolled at the second- or later-choice college.

This section outlined barriers to leaving a second- or later-choice college. These factors included concerns regarding additional time and money due to departing, as well as breaking the commonly held expectations of family, friends, and society to complete college. While a qualitative inquiry provides no way to quantify the differing reasons for re-enrollment, the researcher believes that barriers to leaving seemed to have a greater influence than institutional experiences in the persistence decisions of students at a second- or later-choice college. This is because students were more open to explaining why they didn't leave, as opposed to why they decided to stay. This is a subtle difference, but one that is evidenced well in the following quote by Jeff, "I figured I already took one year, why not just finish up?" Rather than talking about his reasons to

return, Jeff essentially stated he had nothing better to do. The lack of a greater substitute in itself is a barrier to leaving. Put differently, because students couldn't find a better alternative, the logical choice was to re-enroll.

### **Towards an understanding of less than first-choice.**

The conversation so far has examined the reasons students chose to enroll in an institution that was not their first choice, as well as why they re-enrolled for a second year of study. In addition to learning more about the enrollment decisions of students who attend a second- or later-choice college, the focus groups also helped aid in the understanding of a later-choice institution in the minds of these participants.

While the term second- or later-choice college seems self-explanatory, the study revealed that students interpreted it in differing ways and it may be dependent on when the question is asked. The qualitative study (Study A) used data from the admissions application regarding the student's choice. The application could have been completed at various points in time, before and after visiting campus or learning more information. As such, three students indicated that the study site was not their first-choice on the application (Charlie, Jeff, and Melissa), but said it was during the focus group. These students' responses were kept in the dataset, as they met the requirements for inclusion in the study. The quantitative data (Study B), which is elaborated upon in a forthcoming chapter, used the CIRP – The Freshman Survey which asked if the study institution was a student's first, second, etc. choice. This assessment was given in first-year courses during the first three weeks of the fall 2006 semester (internal report, 2007). Hence, students were already enrolled at the institution when they indicated

their choice rank. Thus, students were asked about their choice set at differing times, and in different contexts, allowing for a wide range of interpretations. In other words, this study found that the definition of a first-choice institution was fluid for students.

The students who did admit that the institution was not a first choice in the focus group also shared that their impression of the institution changed after interacting with the college. This occurred most often as students learned more about an institution by reading the website or attending an open house. Beth explained,

I don't think this was my last choice, I just didn't know what I wanted to do. And then my boyfriend came up here for HVAC, and he was like, "You should probably check some things out," and I went to an open house. Then that was like, "Okay, go do something." So it wasn't a last choice, it was just kind of opening the doors, I guess. (Beth)

Beth later shared that she attended the open house with little direction. She was unsure of a major and talked with a health science faculty member because her mother had recently been treated by someone in the field. She left the open house thinking, "Yeah, this is pretty cool. But before that, I would never even thought about it." Beth still wouldn't acknowledge that the institution was her first choice, but the open house swayed her not only into attending the institution, but also into a choice of major.

The choice set changed for students as they learned more about the college experience as well. Anna, for example, commented that her first-choice institution was a large, public flagship university; but, when she toured she learned that she would likely take classes in 300-seat auditoriums. This was one factor that convinced her to enroll in a later-choice college. However, how can an institution that was the antithesis of what

the student deemed necessary for their success (small class sizes) be their true first-choice?

Finally, when asked where the study institution ranked in her choice set, Jane remarked “Probably like six-ish [*sic*].” However, Jane later stated she only applied to one institution – the study institution. Jane admitted “I came because there was a bunch of different majors that I was fumbling between. It gave me a couple of different options.” Jane also discussed the fact that the college “fell in my lap, and then it just happened.” This indicates it was unlikely she researched several colleges, participated in many college visits, and submitted numerous applications. If the institution fell in her lap, and she didn’t research or apply to any other institutions, how can the institution be considered less than first-choice?

These three vignettes illustrate the complex and fluid nature of the college choice set for these students. As discussed in the initial enrollment section above, and through these vignettes, the reasons students chose to attend a second- or later-choice college are quite similar to the reasons one would list for choosing a first-choice institution. In addition, no student indicated they were denied admission to a first-choice institution. In fact, Beth, Anna, Debbie, and Bill all explained that they were admitted to their first-choice college. This indicates that the decision to enroll in a second- or later-choice college for these participants was a voluntary one.

It appears that the choice set for these participants is really an idolized list, rather than a practical list for choosing a college. The students cited logical reasons for enrolling in a later-choice college – small class sizes, good reputation, job prospects, etc.

– yet they continue to hold on to the belief that their current institution is not a first choice. It is interesting to note that the majority of identified first-choice colleges were larger, research intensive institutions – Penn State, the University of Pittsburgh, Drexel University, and Indiana University of Pennsylvania. Each of these institutions, due to their size and alumni-base, are more likely to have strong brands, recognizable to most living in the mid-Atlantic region.

Perhaps after growing up watching NCAA division I football, these students developed a dream of attending such a well-known university. However, after learning more about the institution, and comparing that to what the student knew they needed to be successful (e.g., small classes), they realized they would not be able to be successful at this idolized university. Instead, they chose an institution that better fit them – but the study institution didn't match as the institution they were expected to attend, and maybe even mentioned on occasion while growing up to family and friends. As such, a large, public flagship university remained the first-choice, but not the best choice for the student.

In other words, researchers and students have likely considered the terms first-choice and best-choice to be synonymous. Through an investigation of the reasons why students enroll and re-enroll in second- or later-choice institutions, this assumption has been called into question. It appears that the participants in this study chose the best institution for them. It fit the size, educational methods, and outcomes they desired. However, it did not meet the idolized depictions of the first-choice institution the student, and their families, had laid out in their minds. Rather than believing students

“settle” when they attend a less than first-choice college, the reality may be that they have selected the best college for them. However, because the student still views their “dream college” as their first-choice, despite it not possessing the qualities the student recognizes as necessary for their own success, their best-choice remains a later-choice college. As such, the majority of students who participated in the focus groups may actually be attending a first-choice institution, but are unable to admit it.

### **Framework of re-enrolling at a second- or later-choice college**

Ultimately, the decision to re-enroll at a second- or later-choice college is extremely complex. Nevertheless, data uncovered in this study has identified several reasons students mentioned as contributing to their decision. Their responses led to the development of an initial framework that attempts to identify and explain several of the major components considered by students when making the decision to persist. Additional testing and investigation into this framework is necessary; however, it will be briefly discussed as a starting point for understanding the phenomenon of re-enrolling a second- or later-choice college.

As shown in Figure 2, the decision process for re-enrolling in a second- or later-choice college involves several concepts, which interact with one another in various ways. Students enter with an expectation to complete the degree, are faced with positive and negative experiences that influence their desire to re-enroll, or create barriers to leaving. In the end, motivators and expected outcomes overshadowed the detractors and influenced the student to re-enroll at a second- or later-choice college. Each section of this framework will now be examined in greater detail.

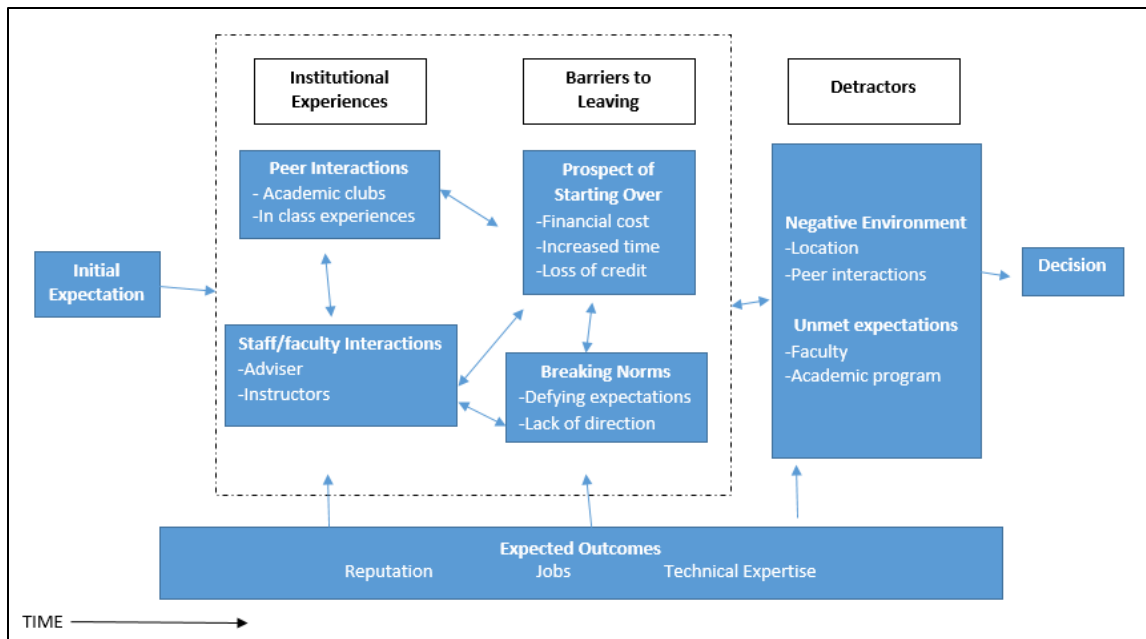


Figure 2. Framework for Re-Enrollment at a Second- or Later-Choice College

Of initial concern to the framework is a student's entering disposition. In other words, what was the student's goal upon enrollment? The focus group findings provide a picture of a subpopulation of students that defies the initial assumptions of this study. Students who enrolled at a second- or later-choice college did so with the desire to complete a degree. They did not anticipate using the institution as a stepping stone to a more desirable location. They entered with a commitment to finish their program. This increased commitment initially positions these students on a path for re-enrollment.

During their first year of study, students at a second- or later-choice college take part in numerous in-class and out-of-class activities. These activities uncovered institutional experiences – experiences the student enjoys, finds valuable, and which create a stronger affinity to the institution. These experiences are generally housed within two areas – interactions with peers and interactions with faculty. No matter the interaction, the ones which were more focused towards the academic majors were

viewed in a more positive manner. In other words, students at a second- or later-choice technical college possess a strong drive to be successful within their chosen field of study. Opportunities to benefit their learning – be it peer-based or with the faculty – within the major are highly desired and impactful to the students' decision to persist. This focus on activities that surround the major may be due to their original expectation to complete a degree, or by the underlying outcomes expected by attending the institution. In other words, pressure from an expected positive outcome, along with an initial desire to achieve the degree, may multiply the effects of positive academic interactions.

Not all experiences can be positive. Students do begin to question their decision to remain a student at a second- or later-choice college. These negative interactions, identified as detractors, primarily were a result of a negative environment or unmet experiences. Negative environmental factors include a poor geographic location, perceived overbearing rules, and negative interactions with peers. Unmet expectations seemed to be a larger factor in making students question their decision to re-enroll at a second- or later-choice college. This included unrealized academic goals, such as not gaining entry to the major, or a discrepancy in the promised type of education. The latter referred to student concerns that faculty were unable to meet students' educational expectations. Students viewed few remedies to the detractor problem, finding an easier solution in departing the institution. Nonetheless, students did re-enroll, despite these detractors. Again, pressure from an expected positive outcome,



along with an initial desire to achieve the degree, may mediate these detractors, allowing students to convert them into negative motivators.

Barriers to leaving are experiences that, should they occur, result in negative outcomes. In order to avoid these negative outcomes, students saw re-enrollment as their best option. Barriers to leaving fall into two broad categories: prospect of starting over and breaking norms. Within the prospect of starting over category, students were faced with the ramifications on their time, money, and previously completed coursework should they depart. Leaving, according to the students, meant the funds expended at the study institution would have been in waste, as they would either not have a degree, or would likely have to repeat courses for additional costs at a competitor institution. This was amplified by the fact that students who investigated transfer found the majority of their credits irrelevant at other institutions. In addition to financial costs, repeating courses or enrolling in another institution also extended the time to degree. Many students saw this as 'starting over'. Each of these costs – be it time or money – were viewed as substantially high enough to warrant remaining enrolled.

Additional barriers to leaving were those that surrounded normative expectations. In short, students perceived expectations for them to complete their degree from society, friends, and family. Departing the institution may jeopardize that ability, thereby defying those closely held expectations. Departing may also generate a lack of direction. It represents a failure in the long-term plan that was likely in place since childhood, setting students off on an aimless path. These outcomes were also

sufficiently severe enough to warrant student's remaining enrolled, rather than suffer the consequences. As with the other categories, pressure from an expected positive outcome, along with an initial desire to achieve the degree, may have influenced the barriers to leaving. Increased time, cost, and a lack of direction all jeopardize an ultimate goal of acquiring a job in a chosen career field.

Within this proposed framework, each of these concepts push and pull, interacting with each other in various ways. As the academic year progresses, some concepts grow stronger and begin to outweigh others. Eventually, all of these experiences enable a student to make an informed decision about their future enrollment.

### **Conclusion**

The data in qualitative study A has added to our understanding of attending a second- or later-choice college. Through the use of focus groups, reasons for enrolling and re-enrolling in a second- or later-choice college were identified. These data revealed that the reasons these students cited were very similar to ones that other students cite as leading to their enrollment in a first-choice institution. This, coupled with the fact that the majority of the participants had the ability to attend their first-choice college, provided additional insights into the concept of less than first-choice. It appears that for these participants, the essence of attending a second- or later-choice institution is really about attending a best-choice institution. The first-choice institution identified by the participant likely represented an idolized university which contained elements that the student recognized would make it difficult for them to be successful. The second- or

later-choice institution actually contained the elements that the student recognized would lead to their success – both in the classroom and later in the job market.

Therefore, it may be better to consider the voluntary choice to attend a second- or later-choice not as a detrimental act, but as a decision to enroll in a best-choice institution.

## CHAPTER 5: QUANTITATIVE METHODS

The quantitative portion of the dissertation (Study B) was conducted to explore student characteristics and behaviors of first-choice and later-choice college enrollees. The study site had several years of institutional data available to the researcher; however, all were gathered prior to the year 2011. Thus, while it was not possible to link the qualitative (i.e., Study A) and quantitative portions (i.e., Study B) of this study, the availability of the quantitative data and dearth of research on students attending a second- or later-choice institution warranted an exploratory analysis of these available data. This chapter outlines the quantitative methodologies used and begins with an overview of the study institution. A description of the methods and datasets utilized and a descriptive analysis of the sample follows. Finally, the procedures used to collect and analyze all quantitative data conclude the chapter.

### **Study Site**

The quantitative portion of this dissertation was conducted at the same study site as the previously mentioned qualitative analysis. Briefly, Study B was conducted at a single location – a public, regional, open-admissions technical college in the northeast of the United States. Furthermore, the institution has a specialized focus on applied technology across its more than 125 baccalaureate and associate degree majors. Fall enrollments at the institution averaged 6,492 students, or 5,848 full-time equivalents, over the 10-year period spanning fall 2005 to fall 2014. For a more detailed description of the study site, please see page 56.

## **Quantitative Methods**

Study B, designed to investigate research questions two through five, consisted of analyzing survey and academic record information collected by the institution.

Specifically, the research questions were:

2. Within a technical college, do first-to-second year retention rates differ among students who attend their first-choice institution versus those attending a second- or later-choice institution?
3. Within a technical college, is there a difference in first year grade point average between students who attend their first-choice institution versus those attending a second- or later-choice?
4. Within a technical college, are students who enroll at a second- or later-choice institution more likely to stopout or transfer during their first year than students attending their first choice institution?
5. Within a technical college, what factors predict first-to-second year retention for students at their first-choice institution versus those at a later-choice institution?

### **Definitions.**

The literature review introduced and defined several terms used throughout this dissertation. However, it is important to again draw attention to these terms and the definitions used throughout this document to aid in understanding the methodology and results of the study. The terms persistence and retention are common throughout higher education literature and are often used interchangeably (Reason, 2009). This,

however, is incorrect as the terms specify two different concepts. Retention refers to “an organizational phenomenon—colleges and universities *retain* [emphasis in the original] students” (Reason, 2009, p. 660). In other words, retention refers to a cohort of students at an institution returning for a subsequent semester or year. “Persistence, on the other hand, is an individual phenomenon—students *persist* [emphasis in the original] to a goal” (Reason, 2009, p. 660). Put differently, students remain at an institution until they achieve their individual goal, which may or may not involve graduation. Thus, a student can persist, but not be retained by an institution. Both terms, retention and persistence, are used throughout this document. Similar to Reason (2009), persistence is used most often in an attempt to focus attention on the student, rather than an institutional goal of retaining students.

Stopout and transfer are two other terms used in this study. Stopout indicates the student took a break from higher education and later returned to complete a degree. The student may return to the initial institution or another (Li, 2008). This study amends this definition slightly and considers a student who left higher education during the academic year as a stopout. This is primarily because data was not available that indicated if the student eventually returned to higher education. Since this was unknown, the student was considered a stopout rather than a dropout (a student who leaves higher education completely). Transfer indicates a student left one institution and enrolled in another college or university to complete their studies. There is no break in enrollment (Li, 2008). With a clearer understanding of several key terms, a discussion of the research methodologies is next.

**Survey instrument.**

After receiving Penn State Institutional Review Board approval, the study institution's Institutional Research Office compiled a dataset that contained all student responses to the 2006 Cooperative Institutional Research Program (CIRP) Freshman Survey. The Freshman Survey asks students to indicate if the institution is their first- or later-choice of college; reasons for applying; high school activities; as well as demographic information and questions concerning parental income and educational attainment. In addition, the Institutional Research Office added the following institutional data: fall 2006 GPA, spring 2007 GPA, 2006/2007 academic year GPA, housing status for fall 2006 and spring 2007, enrollment location for fall 2006, spring 2007, and fall 2007, and full or part-time student status. This dataset did not contain any identifiable information.

Data from the 2006 Cooperative Institutional Research Program (CIRP) Freshman Survey were selected for several reasons. First, the CIRP Freshman Survey recently celebrated its 50<sup>th</sup> administration to college students throughout the United States. With this most recent iteration, the survey has been administered at more than 1,900 colleges and to more than 15 million students since 1966 (Higher Education Research Institute, 2016a). Due to its widespread use at colleges throughout the nation, the CIRP Freshman Survey has become a definitive source for information concerning the incoming college student. In 2015 alone, data from the survey were used to inform Supreme Court cases concerning the benefits of diverse student bodies, to examine the

long-term effects of undergraduate experiences on civic engagement, and continue to be featured prominently in research regarding STEM education (Eagan K. , et al., 2015).

Second, the CIRP Freshman Survey's large normative sample and longitudinal nature indicate a stable survey design. While questions have changed over the 50 years of the CIRP Freshman Survey's administration, attention has been paid to the design to ensure data can be compared across institutions and over time. While this study did not use comparison data across institutions, the ability to do so lends additional weight to the reliability and validity of the instrument itself. Finally, the survey asks the questions that are at the center of this study and includes information regarding student experiences before enrollment, demographics, commitment to the institution, planned interactions with the campus, and reasons for enrolling, all of which have been found to impact student persistence. In fact, the framework that guides this study consists of more than 50 variables drawn from the CIRP Freshman Survey. Finally, results from the 2006 survey were selected because it was the most comprehensive dataset available from the study institution within the last ten years.

### **Sample.**

The initial dataset provided by the Institutional Research Office contained 1,256 records, representing a total response rate of 49% of the incoming freshman class ( $n = 2,565$ ). A review of the dataset indicated missing values in several variables. Of greatest concern were a large number of values (774) missing within the fall 2007 variable among the initial 2,565 freshmen with CIRP records. This variable indicated whether a student enrolled in the fall semester following their initial enrollment. Therefore, a



missing value indicated no information on whether the student was retained from year one into year two. The Institutional Research Office was consulted regarding these missing values and it was learned that students either gave an incorrect student identification number or failed to provide their student identification number. As such, enrollment data could not be linked with the student's responses. These missing values limited the sample size to 482 useable records, or 18.79% of the total first-year population.

A review of the useable dataset and the entire incoming freshman class was conducted. There were limited data available on the entire population, but a demographic analysis was possible. The 2006 total freshman population and useable dataset ( $n = 482$ ) were similar, but a few differences were present. The entire population was 66.5% male, while the useable dataset was 73.4% male (internal report, 2009). Both populations were traditionally aged (total = 87% under 25 vs. useable = 93.5% under 25). There were also similarities in college of first choice. 89.8% of the total population selected the study institution as first choice, while 83.6% of the useable dataset did so. Fall-to-fall retention for the total population was slightly below that of the useable dataset (63.9% vs. 70.5%). Race was also similar, with 92% of the total population and 89.2% of the useable population reporting White/Caucasian. The largest difference between the two populations was in full-time status, where the useable dataset had 98.5% full-time students, compared to 88.6% of the total freshman population.

In order to ensure the lowered sample size was adequate for this research, a comparison of records with missing fall 2007 data and complete fall 2007 data was also conducted. The comparative analysis involved a review of the factors that made up the theoretical framework of the study (see Figure 1). Overall, it was determined that the students with missing records and those with complete were remarkably similar across the majority of the framework factors. Nonetheless, there are several factors worthy of noting. Since this study focuses on college choice, this variable was examined closely to ensure the missing and complete records were similar. It was determined that there was less than 2% variation in these two populations. Eighty-three point six percent of students with complete records indicated the study site was their first-choice college, while 81.9% of students with missing records indicated the study site was their first-choice institution.

Gender for both populations was also similar, with 73.4% of complete records students being male, compared with 77.4% of missing record students. There was a bit wider spread in terms of race, as students with complete records were more likely to report being white (89.2%) compared to 81.9% of missing record students. However, students who reported being non-white, which includes American Indian/Alaska Native, African American/Black, Asian American/Asian, Native Hawaiian/Pacific Islander, Mexican American/Chicano, Puerto Rican, Other Latino, and Other, were within two percentage points of one another (missing = 7.2% vs. complete = 9.6%). Given the similarity in non-white responses between the two sub-populations, it appears the larger variance in white student responses is likely a result of missing record white

students not completing the demographic question. Race was not reported by 85 students with missing data, and only 5 students with complete data failed to indicate their race. As such, the two populations seem similar in regards to race. Finally, self-reported high school Grade Point Averages (GPA) were compared to determine if the two groups had similar academic abilities. Students with complete records were slightly more likely to have an overall “A” GPA in high school (complete = 18.3% vs. missing = 15.9%). However, the variation was so slight that it can be assumed the two populations are similar in terms of academic ability. These results are available in Table 3.

Table 3  
*Comparison of Variables with Missing Fall 2007 Enrollment Data*

Variable	Missing	Complete
First Choice	634 (81.9%)	403 (83.6%)
Second or Later Choice	140 (18.1%)	79 (16.4%)
Male	599 (77.4%)	354 (73.4%)
Female	174 (22.5%)	128 (26.6%)
Race: White	634 (81.9%)	430 (89.2%)
Race: Non-White	55 (7.2%)	47 (9.6%)
High School GPA		
A	123 (15.9%)	88 (18.30%)
B	486 (62.8%)	299 (62.0%)
C	152 (19.7%)	89 (18.4%)
D	7 (.9%)	1 (.2%)

Overall, students with complete 2007 fall enrollment records and those with missing 2007 fall enrollment records were similar. Students with missing records for this particular variable also had higher numbers of variables with missing data, on average. This may indicate a lack of care in completing the survey questionnaire from this subset of students. Due to the relative similarities in the subsets of students, the decision was made to split the dataset and use only the records with complete values in the fall 2007

enrollment variable. This left 482 records. In this sample, 354 students were male, while 128 were female. Approximately 89% identified as white ( $n = 430$ ). A similar analysis to the one described above was conducted to compare students who indicated the institution was their second-choice, third-choice, or less than third-choice. No significant differences were observed between these categories of later-choice colleges. Therefore, the categories were collapsed to indicate a first-choice college or second or greater-choice college. Almost 84% indicated the study institution was their first-choice college ( $n = 403$ ). This left 79 students, or approximately 16%, who indicated the study site was a second or greater-choice college.

#### **Statistical methods.**

All quantitative analyses conducted during this study used the SPSS statistical package, which was found to be used most often in the fields of higher education and public administration. Research questions two through four focused on determining if there are differences in first-to-second year retention, grade point average (GPA), and transfer or stopout during the first year of study between students at a first-choice institution and those at a second- or later-choice college. Questions two and four focused on a response that was recorded as either a nominal or ordinal variable. Due to this level of measurement, parametric tests, such as the t-test or ANOVA are unavailable. Since the dependent variables (retention or transfer/stopout) are measured at the nominal level, and the independent variable (college choice) is measured at the nominal levels, a non-parametric statistical test, and specifically the Chi-square test, is required (O'Sullivan, Rassel, & Berner, 2008). Question three's dependent variable,

grade point average, was measured at the scale level, which enabled the use of a parametric statistical test, the *t*-test (O'Sullivan, Rassel, & Berner, 2008).

### **Question 2.**

To test research question two, a new variable, retained after year 1, was computed using SPSS. Specifically, if the variable 'fall 2006 enrollment' matched 'fall 2007 enrollment', a value of 'yes' was indicated in the retained after year 1 variable (n = 340). All other values were coded as 'no' (n = 142). As mentioned earlier, any missing values in the fall 2007 variable were previously removed from the dataset. A Chi-square test was then conducted between the 'retained after year 1' variable and this choice variable. The outcome of this Chi-square test is discussed in the forthcoming results section.

### **Question 3.**

To test research question three, a *t*-test for independent samples was conducted. The dataset provided by the Institutional Research Office for this study included each participant's spring 2007 cumulative GPA, measured at the scale level. This variable was used as the dependent variable. College choice, first or second- or later-choice, was selected as the independent variable. As seen in Table 4, a review for a normal distribution showed that the independent variable was not normally distributed. Generally, this violates an assumption of the independent samples *t*-test; however, for samples larger than 40, many consider the *t*-test to be valid regardless of distribution (R. Heckard, personal communication, June 27, 2011; Kent State University, 2016). As such, the *t*-test for independent samples was conducted using a dataset of 413 records. This is

69 records lower than available for research question two. It is likely that GPA was not recorded for these 69 individuals because they stopped-out or transferred during the semester. However, they were present during the third-week of the semester when the official enrollment statistics were tabulated. The outcome of this  $t$ -test is discussed in the forthcoming results section.

Table 4  
*Spring 2007 GPA Normality Tests*

Grouping	Shapiro-Wilk		
	Statistic	Df	Sig.
First Choice	.946	343	.000
Second or Later	.959	70	.023

While the use of a  $t$ -test to examine these data has previously been discussed and justified, due to the fact that the data were found to not be normally distributed, a Mann-Whitney  $U$  test was conducted to verify the findings from the  $t$ -test. The Mann-Whitney  $U$  test is a nonparametric alternative to the  $t$ -test for independent samples. It was not initially preferred because nonparametric tests are less likely to detect significant relationships between variables (O'Sullivan, Rassel, & Berner, 2008). However, nonparametric tests are quite versatile as they do not require the population to be normally distributed. In addition, the Mann-Whitney  $U$  test is resistant to outliers, a benefit in this analysis as nine outliers were discovered in the distribution (R. Heckard, personal communication, July 6, 2011). The outcome of the Mann-Whitney  $U$  test is discussed in the forthcoming results section.

**Question 4.**

Research question four did not require the computation of an additional variable. The Institutional Research Office provided a variable that indicated a student's spring 2007 enrollment as either at the study institution (retained,  $n = 424$ ), at another institution (transfer,  $n = 14$ ), or not enrolled (stopout,  $n = 44$ ). This variable was measured at the conclusion of the spring 2007 semester. These retention figures are 11 students higher than those used in research question three. As described above, enrollment locations were determined at the end of the semester. Therefore, these 11 students were present during the semester but for some reason did not earn grades. Typically, not having a GPA indicates a student withdrew or was given incomplete grades during the semester. A review of the dataset indicates the study institution classified these 11 students as retained. Since the study institution considered these 11 students retained in spring 2007 semester, it is possible the students were issued incomplete grades or departed very late in the semester. As such, they were considered retained for this analysis as well. A Chi-square test was conducted between the 'college choice' variable discussed previously and this spring 2007 enrollment variable. The outcome of this Chi-square test is discussed in the forthcoming results section.

**Question 5.**

Research question five is the final question analyzed using a quantitative methodology. Question five sought to ascertain the factors that predict first-to-second year transition for students at their first-choice institution and for those at a second- or later-choice college. Specifically, the research question was: *Within a technical college,*

*what factors predict first-to-second year retention for students at their first-choice institution versus those at a later-choice institution?* However, after reviewing the available data, it was determined that these data could not support answering the question as it was written. In other words, the sample population of second- or later-choice students who were retained was too small ( $n = 79$ ) to run separate models to determine differences in predictors between first-choice and second- or later-choice students. Due to the small sample, research question five was amended to: *Within a technical college, is the college choice rank (first-choice or second- or later-choice) a predictor of retention?* While this revised question does not generate a list of predictors that impact persistence for students at a second- or later-choice college, it does investigate whether the college choice rank is a predictor of persistence. In addition, the qualitative portion of this study did offer some insight into the re-enrollment behaviors of second- or later-choice students at this institution. Finally, given the limited population of second- or later-choice students, question five results were heavily influenced by students at their first-choice college.

The dependent variable for this amended question is whether a student was retained after their first year or not. Since this is a binary response dependent variable (yes or no), binary logistic regression is the appropriate method of statistical analysis. Binary logistic regression is most often used because binary data does not fit the assumptions of a linear regression model. For example, binary data are limited to two responses, while linear regression values have no limits and can be below zero or above one. This is impossible for binary data (Wilson & Lorenz, 2015).



The logistic regression process began with the identification of variables in the dataset that may influence concepts on the theoretical framework for this study. This framework was discussed in Chapter 2, and visually depicted in Figure 1 (see page 41). The researcher reviewed the variables in the CIRP – The Freshman Survey, and add-on data supplied by the Institutional Research Office, to identify possible predictors of persistence. These variables were selected due to their perceived congruence with known predictors identified in the literature review. Each predictor was then categorized into the theoretical constructs. For example, the CIRP – The Freshman Survey asked a question regarding the institution’s academic reputation. Academic reputation is likely a strong proxy for academic quality, which the literature review identified as a predictor of persistence (Reason, 2009). REPUTATION was classified under the college search process because it was also found to be related to a student’s initial enrollment decision (Kealy & Rockel, 1987; Long, 2004; Schoenherr, 2009; Tierney, 1983; Weiler, 1996). In this way, each variable on the CIRP was reviewed against the literature surrounding college choice and student persistence to identify possible predictors, and then to classify them into the appropriate conceptual category. This initial grouping exercise resulted in 73 potential predictors. Appendix F provides a listing of these 73 variables, their descriptions and measurement scales, as well as the category in which they correspond to the theoretical framework (see page 41).

All variables were then recoded from string to numeric values for analysis in SPSS. Next, the data were examined for small cell values within categorical variables. Small or empty cells in a logistic regression can create an unstable model, or stop a

model from running entirely (UCLA: Statistical Consulting Group, n.d. a). In order to look for these small cell values, a crosstab was conducted between all the identified predictors and the dependent variable. Twenty-nine variables were found to have one or more crosstab cells with counts less than five. However, further analysis showed that the majority of these variables, while technically categorical, were measured at the ordinal level. For example, ACAD\_ABILITY, which was the student's self-rated academic ability as compared to the average person their age, used five categories to capture the data (1 = Lowest 10%; 2 = Below average; 3 = Average; 4 = Above average; 5 = Highest 10%). Thus, as the categories increased, a student's perception of their academic ability also went up. Due to this coding, the variable was acting as a continuous variable rather than a categorical variable, and therefore, analyzing as such may reduce small cell problems. After reviewing the remainder of the 29 identified small cells, the researcher determined no variables needed to have their categories collapsed. Table 5 lists the descriptive statistics for each of the variables identified in the theoretical framework guiding this study. Appendix G further refines the descriptive statistics in Table 5 by separating them by students at a first-choice institution. Appendix H is a similar descriptive analysis, but with only second- or later-choice students.

Table 5  
*Descriptive Statistics of Conceptual Framework Variables*

Variable	N	%	Minimum	Maximum	Mean	SD
<b>Demographics</b>						
RACE	477					
American Indian/Alaska Native		1				
Asian American/Asian		1.2				
African American/Black		3.1				
Mexican American/Chicano		.8				

Variable	<i>N</i>	<i>%</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>SD</i>
	Other	2.1				
	Other Latino	.2				
	Puerto Rican	1.2				
	White/Caucasian	89.2				
GENDER <sup>a</sup>	482		1	2	1.27	0.442
	Female	26.6				
	Male	73.4				
AGE <sup>a</sup>	480		1	10	4.08	1.311
INCOME <sup>a</sup>	405		1	14	8.106	2.884
DAD_EDUC <sup>a</sup>	471		1	8	4.378	1.792
MOM_EDUC <sup>a</sup>	468		1	8	4.534	1.711
FT-PT <sup>a</sup>	480		1	2	1.99	0.102
	Full-time	98.5				
	Part-time	1.0				
<b>Skills/Education</b>						
ACAD_ABILITY <sup>a</sup>	470		1	5	3.409	0.656
DRIVE <sup>a</sup>	473		1	5	3.658	0.806
LEADER <sup>a</sup>	473		1	5	3.457	0.865
MATH_ABILITY <sup>a</sup>	471		1	5	3.151	0.914
SPEAKING <sup>a</sup>	474		1	5	2.719	0.924
INTEL_CONF <sup>a</sup>	473		1	5	3.374	0.774
SOC_CONF <sup>a</sup>	473		1	5	3.332	0.870
HSGPA <sup>a</sup>	477		1	8	5.04	1.743
SATV	128		300	780	505.19	86.83
SATM	131		300	800	534.62	86.802
<b>College Search</b>						
ACCEPT <sup>a</sup>	167		1	2	1.53	0.500
APPLY <sup>a</sup>	481		0	8	0.859	1.360
LEGACY	481					
	Neither	89.8				
	Mother	3.1				
	Father	5.8				
	Both	1.0				
REPUTATION <sup>a</sup>	478		1	3	2.47	0.636
GRAD_SCHOOL <sup>a</sup>	466		1	3	1.78	0.770
GOOD_JOBS <sup>a</sup>	472		1	3	2.63	0.575
<b>Intentions</b>						
PLAN_LIVE	482					
	With family	14.5				
	Other private home	32.4				
	Residence hall	45.2				

Variable	<i>N</i>	%	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>SD</i>
Other campus housing		5.8				
Other		2.1				
HI_DEGREE <sup>a</sup>	310		2	10	3.574	0.775
CH_MAJOR <sup>a</sup>	473		1	4	1.846	0.781
CH_CAREER <sup>a</sup>	471		1	4	1.928	0.777
EXTRA_TIME <sup>a</sup>	471		1	4	2.268	0.843
TRANSFER <sup>a</sup>	468		1	4	1.692	0.845
SATISFIED <sup>a</sup>	464		1	4	3.390	0.668
<b>Commitment</b>						
PARENTS <sup>a</sup>	476		1	3	2.17	0.737
NO_JOB <sup>a</sup>	475		1	3	1.35	0.663
AWAY_HOME <sup>a</sup>	475		1	3	1.7	0.703
BETTER_JOB <sup>a</sup>	476		1	3	2.84	0.437
LIB_ARTS <sup>a</sup>	476		1	3	2.41	0.67
NO_BETTER <sup>a</sup>	473		1	3	1.19	0.465
CULTURE <sup>a</sup>	474		1	3	1.86	0.737
MONEY <sup>a</sup>	473		1	3	2.81	0.426
INTERESTS <sup>a</sup>	476		1	3	2.71	0.518
MS_PREP <sup>a</sup>	474		1	3	1.85	0.793
MENTOR <sup>a</sup>	475		1	3	1.56	0.686
TRAIN_JOB <sup>a</sup>	477		1	3	2.83	0.415
RELATIVES <sup>a</sup>	472		1	3	1.48	0.651
TEACHER <sup>a</sup>	470		1	3	1.42	0.613
FIN_AID <sup>a</sup>	474		1	3	1.6	0.766
COST <sup>a</sup>	475		1	3	1.77	0.751
NEAR_HOME <sup>a</sup>	473		1	3	1.58	0.769
NO_AID <sup>a</sup>	470		1	3	1.16	0.453
NO_PAY <sup>a</sup>	471		1	3	1.16	0.483
SIZE <sup>a</sup>	474		1	3	1.89	0.784
SPORTS <sup>a</sup>	468		1	3	1.10	0.351
VISIT <sup>a</sup>	475		1	3	2.08	0.767
<b>Academic Performance</b>						
FALLGPA	472		0	4	2.578	1.058
TUTORED <sup>a</sup>	472		1	3	1.290	0.499
STUDIED <sup>a</sup>	474		1	3	1.812	0.631
LATE <sup>a</sup>	471		1	3	1.397	0.543
HMWK <sup>a</sup>	475		1	8	3.286	1.290
B_AVG <sup>a</sup>	468		1	4	3.434	0.639
CUM_GPA	413		0	4	2.765	0.823
<b>Staff/Faculty Interaction</b>						
GUEST <sup>a</sup>	472		1	3	1.150	0.428
ADVICE <sup>a</sup>	472		1	3	1.824	0.601

Variable	<i>N</i>	<i>%</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>SD</i>
COM_PROF <sup>a</sup>	469		1	4	2.866	0.793
<b>Extracurricular Activities</b>						
VOLUNTEER <sup>a</sup>	474		1	8	2.084	1.514
CLUB_HRS <sup>a</sup>	474		1	8	2.080	1.410
STU_GVT <sup>a</sup>	472		1	4	1.710	0.831
SOR_FRAT <sup>a</sup>	472		1	4	1.619	0.808
PLAY_SPORTS <sup>a</sup>	463		1	4	2.022	1.034
COM_SERV <sup>a</sup>	469		1	4	2.119	0.907
G_SOC_RACE <sup>a</sup>	468		1	4	3.092	0.899
JOIN_CLUB <sup>a</sup>	467		1	4	2.362	0.954
SDY_ABROAD <sup>a</sup>	467		1	4	1.857	0.885
<b>Peer Group Interactions</b>						
ON_OFF	482					
	On campus	48.8				
	Off campus	38.6				
	Commuter	12.7				
SOC_RACE <sup>a</sup>	470		1	3	2.317	0.669
HRS_FRND <sup>a</sup>	472		1	8	5.595	1.710
PARTY <sup>a</sup>	476		1	8	3.345	1.951
<b>Dependent Variables</b>						
CHOICE <sup>a</sup>	482		1	2	1.16	0.371
RETAINED <sup>a</sup>	482		1	2	1.71	0.456

<sup>a</sup> Refer to Appendix F for variable descriptions and scales

The initially identified predictors were then reviewed for missing values. The variable regarding if a student was accepted to their first-choice college (ACCEPT) had 315 missing entries. This was not surprising, as the question was only meant for students who indicated the study institution was not their first choice. Since 403 students had identified the study site as their first choice, they would have been instructed to skip this question. The variable that listed a student's highest degree planned at the study institution (HI\_DEGREE) also had many missing values (n = 172). Finally, parental income (INCOME) had 77 missing values. Since SPSS automatically drops the entire student record from analysis when one value is missing, it was decided

to remove these variables from further consideration, given their large numbers. All other variables were found to be missing no more than 20 values and remained in the dataset for model consideration. While SPSS would remove cases when a missing value was encountered, this was determined to be an acceptable risk as opposed to removing all variables with missing data, which would have resulted in a very small subset of available variables.

Given the computing power of today's personal computers, and advancements in statistical analysis programs, it is tempting to try to include each of the 73 predictor variables in a model of student persistence. However, including each variable increases the likelihood of overfitting the model (Babyak, 2004). A model that is overfit contains more predictor variables than a sample size can support, yielding findings that appear valid, but are unable to be replicated (Babyak, 2004). In other words, an overfit model will indicate a variable is significant, when in reality, the predictor is not. This is a Type I error (Peduzzi, Concato, Kemper, Holford, & Feinstein, 1996). In order to lessen the chances of this type of error, the sample size was examined to determine how many predictor variables the data could actually support.

In logistic regression, this begins with examining the number of events versus non-events to determine the limiting sample size (Babyak, 2004; Peduzzi et al., 1996). In the case of this study, the event of interest is fall-to-fall retention. A review of the descriptive statistics for this variable (RETAINED) revealed 142 students were not retained and 340 students were retained from fall-to-fall. The limiting sample size is the event or non-event which is smaller (Babyak, 2004). Since 142 students were not

retained, this was designated the limited sample size. Through analysis of simulation studies, Peduzzi et al. determined that logistic regression models can generally produce stable results if the number of predictors are kept at a ratio of 10 to 15 of the limiting sample size. Given the limited sample of 142, this indicates a logistic regression model fit to these data could support between 9 and 14 predictors.

The researcher was then tasked with refining a conceptual framework which included 73 possible predictors into one that included no more than 14. Two strategies were used to refine the predictors. First, a correlation matrix was computed that checked for correlations between each predictor. Combining or eliminating closely correlated predictors is a simple and effective way to lessen the number of predictors (Babyak, 2004). No correlations were discovered that were higher than  $|.8|$ , resulting in no predictor eliminations due to correlation.

The predictors were then examined in reference to the literature review to identify variables that, based on theory, were most likely to be significant predictors of persistence. The initial conceptual framework included variables that were identified in the literature review that had the potential to impact persistence. For example, gender and race were included in the conceptual framework. However, research has shown inconsistent results with both gender and race (Reason, 2009). As such, they were removed from consideration in the logistic regression model. This process occurred with each identified variable until a more manageable list of possible predictors was identified. This list included 35 predictors, with each identified in Table 6.

Table 6  
*Logistic Model Variable Descriptions*

Variable	Variable Description	Variable Scale
<b>Demographics</b>		
INCOME	Student's estimate of total family income.	1 = Less than \$10,000 2 = \$10,000 - 14,999 3 = \$15,000 - \$19,999 4 = \$20,000 - \$24,999 5 = \$25,000 - \$29,999 6 = \$30,000 - \$39,999 7 = \$40,000 - \$49,999 8 = \$50,000 - \$59,999 9 = \$60,000 - \$74,999 10 = \$75,000 - \$99,999 11 = \$100,000 - \$149,999 12 = \$150,000 - \$199,999 13 = \$200,000 - \$249,999 14 = More than \$250,000
<b>Skills/Education</b>		
ACAD_ABILITY	Student's rating of their <i>Academic Ability</i> as compared with the average person their age.	1 = Lowest 10% 2 = Below Average 3 = Average 4 = Above Average 5 = Highest 10%
DRIVE	Student's rating of their <i>Drive to Achieve</i> as compared with the average person their age.	1 = Lowest 10% 2 = Below Average 3 = Average 4 = Above Average 5 = Highest 10%
LEADER	Student's rating of their <i>Leadership Ability</i> as compared with the average person their age.	1 = Lowest 10% 2 = Below Average 3 = Average 4 = Above Average 5 = Highest 10%
MATH_ABILITY	Student's rating of their <i>Mathematical Ability</i> as compared with the average person their age.	1 = Lowest 10% 2 = Below Average 3 = Average 4 = Above Average 5 = Highest 10%



Variable	Variable Description	Variable Scale
SPEAKING	Student's rating of their <i>Public Speaking Ability</i> as compared with the average person their age.	1 = Lowest 10% 2 = Below Average 3 = Average 4 = Above Average 5 = Highest 10%
INTEL_CONF	Student's rating of their <i>Self-confidence (intellectual)</i> as compared with the average person their age.	1 = Lowest 10% 2 = Below Average 3 = Average 4 = Above Average 5 = Highest 10%
SOC_CONF	Student's rating of their <i>Self-confidence (social)</i> as compared with the average person their age.	1 = Lowest 10% 2 = Below Average 3 = Average 4 = Above Average 5 = Highest 10%
HSGPA	Student's average high school grade.	1 = D 2 = C+ 3 = C 4 = B- 5 = B 6 = B+ 7 = A- 8 = A or A+
<b>College Search</b>		
REPUTATION	Reasons for attending this college. <i>This college has a very good academic reputation.</i>	1 = Not important 2 = Somewhat important 3 = Very important
GRAD_SCHOOL	Reasons for attending this college. <i>This college's graduates gain admission to top graduate/ professional schools.</i>	1 = Not important 2 = Somewhat important 3 = Very important
GOOD_JOBS	Reasons for attending this college. <i>This college's graduates get good jobs.</i>	1 = Not important 2 = Somewhat important 3 = Very important
<b>Intentions</b>		
CH_MAJOR	Student's best guess they will: <i>Change major field.</i>	1 = No Chance 2 = Very little chance 3 = Some chance 4 = Very good chance

Variable	Variable Description	Variable Scale
TRANSFER	Student's best guess they will: <i>Transfer to another college before graduating.</i>	1 = No Chance 2 = Very little chance 3 = Some chance 4 = Very good chance
SATISFIED	Student's best guess they will: <i>Be satisfied with their college.</i>	1 = No Chance 2 = Very little chance 3 = Some chance 4 = Very good chance
<b>Commitment</b>		
BETTER_JOB	In deciding to go to college, how important was the following reason to the student: <i>To be able to get a better job.</i>	1 = Not important 2 = Somewhat important 3 = Very important
LIB_ARTS	In deciding to go to college, how important was the following reason to the student: <i>To gain a general education and appreciation of ideas.</i>	1 = Not important 2 = Somewhat important 3 = Very important
SIZE	Reasons for attending this college. <i>I wanted to go to a school about the size of this college.</i>	1 = Not important 2 = Somewhat important 3 = Very important
<b>Academic Performance</b>		
TUTORED	Student's indication of their participation in the following activity during the past year: <i>Tutored another student.</i>	1 = Not at all 2 = Occasionally 3 = Frequently
STUDIED	Student's indication of their participation in the following activity during the past year: <i>Studied with other students.</i>	1 = Not at all 2 = Occasionally 3 = Frequently
HMWK	Student's indication of the number of hours per week spent on the following activity in their final year of high school: <i>Studying/homework.</i>	1 = None 2 = Less than 1 3 = 1-2 4 = 3 to 5 5 = 6 to 10 6 = 11 to 15 7 = 16 to 20 8 = Over 20

Variable	Variable Description	Variable Scale
CUM_GPA	Student's 2006/2007 cumulative GPA.	Actual GPA measured at the scale level, (e.g. 3.53)
<b>Staff/Faculty Interaction</b>		
GUEST	Student's indication of their participation in the following activity during the past year: <i>Was a guest in a teacher's home.</i>	1 = Not at all 2 = Occasionally 3 = Frequently
ADVICE	Student's indication of their participation in the following activity during the past year: <i>Asked a teacher for advice after class.</i>	1 = Not at all 2 = Occasionally 3 = Frequently
COM_PROF	Student's best guess they will: <i>Communicate regularly with your professors.</i>	1 = No Chance 2 = Very little chance 3 = Some chance 4 = Very good chance
<b>Extracurricular Activities</b>		
STU_GVT	Student's best guess they will: <i>Participate in student government.</i>	1 = No Chance 2 = Very little chance 3 = Some chance 4 = Very good chance
SOR_FRAT	Student's best guess they will: <i>Join a social fraternity or sorority.</i>	1 = No Chance 2 = Very little chance 3 = Some chance 4 = Very good chance
PLAY_SPORTS	Student's best guess they will: <i>Play varsity/intercollegiate athletics.</i>	1 = No Chance 2 = Very little chance 3 = Some chance 4 = Very good chance
COM_SERV	Student's best guess they will: <i>Participate in volunteer or community service work.</i>	1 = No Chance 2 = Very little chance 3 = Some chance 4 = Very good chance
JOIN_CLUB	Student's best guess they will: <i>Participate in student clubs/groups.</i>	1 = No Chance 2 = Very little chance 3 = Some chance 4 = Very good chance
SDY_ABROAD	Student's best guess they will: <i>Participate in a study abroad program.</i>	1 = No Chance 2 = Very little chance 3 = Some chance 4 = Very good chance

Variable	Variable Description	Variable Scale
<b>Peer Group Interactions</b>		
ON_OFF	Student's first semester housing status.	1 = Commuter 2 = Off campus 3 = On campus
HRS_FRND	Student's indication of the number of hours per week spent on the following activity in their final year of high school: <i>Socializing with friends</i> .	1 = None 2 = Less than 1 3 = 1-2 4 = 3 to 5 5 = 6 to 10 6 = 11 to 15 7 = 16 to 20 8 = Over 20
PARTY	Student's indication of the number of hours per week spent on the following activity in their final year of high school: <i>Partying</i> .	1 = None 2 = Less than 1 3 = 1-2 4 = 3 to 5 5 = 6 to 10 6 = 11 to 15 7 = 16 to 20 8 = Over 20
<b>Dependent Variables</b>		
CHOICE	Student's rank of this college in their choice set.	1 = First choice 2 = Second- or later-choice
RETAINED	Was student retained after the first year of study?	1 = Not Retained 2 = Retained

Thirty-five predictor variables is still too many for the limited sample size to support. However, this number was more manageable and could be refined through the logistic regression process. Specifically, the researcher decided to build successive, manual stepwise regression models to test these predictors. At each step in the process, a logical block of predictors was added to the model. The outcomes were then reviewed to determine if the model fit the data, which predictors should be retained, and which should be removed based upon their statistical significance to the model. This process

led to the development of five logistic regression models based primarily on the theoretical framework guiding this work (see Figure 1).

### **Model 1.**

The first regression model included variables that aligned with the Skills/Education concept in the conceptual framework. Demographic factors were removed from consideration because they lacked sufficient data to be tested (INCOME) or the literature review indicated they were a non-optimal predictor of persistence. Predictors included in this model included: HSGPA, MATH\_ABILITY, INTEL\_CONF, DRIVE, SOC\_CONF, LEADER, ACAD\_ABILITY, SPEAKING, and CHOICE. Each of these predictors, with the exception of CHOICE, relate to a student's academic background or self-confidence. The literature review showed that academic preparation and performance, as well as student disposition were significantly related to persistence (Reason, 2009). College choice, while not indicative of a student's background or disposition, is a variable of great interest to this study, and as such, it was included in every model. Results for this model are shared in Chapter 6.

### **Model 2.**

The second regression model built upon Model 1 and included additional predictor variables related to a student's College Search, Intentions, and Commitment. Specifically, statistically significant predictors at the  $p < .1$  level in Model 1 were left in the model. A significance level of  $p < .1$  is high when compared to the often cited  $p < .05$  significance level used to determine statistical significance. This level was selected to allow more predictors to remain in subsequent model. While this increases the chance

of false variables being included, it also makes the model more flexible by permitting additional variables to remain in the model (Draper & Smith, 1998). In addition, as previously discussed, each variable has theoretical justification for inclusion. The predictors from Model 1 that remained in Model 2 were: CHOICE and HSGPA. The new predictors from the College Search, Intentions, and Commitment concepts that were included were: CH\_MAJOR, SATISFIED, TRANSFER, REPUTATION, GRAD\_SCHOOL, GOOD\_JOBS, SIZE, LIB\_ARTS, and BETTER\_JOB. This resulted in a model which contained 11 predictors, slightly below the maximum allowable given the limited sample size.

GOOD\_JOBS, GRAD\_SCHOOL, and REPUTATION were included in the College Search concept and assessed a student's belief regarding the reputation of the institution. This serves as a proxy measure for institutional quality, a factor shown to be positively associated with persistence (Reason, 2009). In other words, if students believed the institution had a strong reputation, it is also likely they believed the institution was of high quality.

CH\_MAJOR, TRANSFER, and SATISFIED were variables within the Intentions concept. They measured the likelihood that a student would change their major or career choice, transfer, and be satisfied with the college. These factors generally indicate a student's sense of fit with the institution. If students believed they had little chance of transferring, for example, it is likely they believe they fit at the institution. Institutional fit has been found to also be a predictor of student persistence, providing rationale for these variables inclusion in the model (Bean & Eaton, 2001; Milem & Berger, 1997; Tinto, 1993).

BETTER\_JOB, LIB\_ARTS, and SIZE were predictors grouped under the Commitment concept. These predictors identified a student's reason for attending college, and in turn, serve as a proxy measure of goal commitment. BETTER\_JOB, for example, assesses the importance of attending college to prepare for a better job. If a student cites this as very important, it may indicate a commitment to completing a degree so they have the ability to get a good job that will provide for them and/or their family. Higher levels of goal commitment have also been shown to positively impact persistence (Bean & Metzner, 1985). SIZE assesses the size of the institution as a deciding factor for enrollment. While institution size has had small, and contradictory, findings, it is often reported as related to persistence (Reason, 2009). In addition, it is cited by many students at the study institution as a contributing factor to their initial enrollment (internal report, 2012). Detailed results for Model 2 are shared in Chapter 6.

### **Model 3.**

Model 3 built off of the previous models and included four prior predictors that were significant at the  $p < .1$  level. In addition, new predictors that were classified under the Academic Performance and Staff/Faculty Interaction concepts were included. The predictors that remained from Models 1 and 2 were: CHOICE, HSGPA, REPUTATION, GRAD\_SCHOOL, and LIB\_ARTS.

Predictors from the Academic Performance concept that were included in Model 3 were CUM\_GPA, TUTORED, HMWK, and STUDIED. While CUM\_GPA assessed a student's actual academic performance during their first year, STUDIED and TUTORED served as proxies for learning new academic skills. Through tutoring and studying with

others, a student develops new academic skills, such as note-taking, rephrasing information, or problem solving. HMWK also served as a proxy for academic performance as it measured the number of hours a student spent on studying/homework during their final year of high school. Increased academic engagement has been shown to enhance learning, and therefore GPA (Pascarella & Terenzini, 2005; Strayhorn, 2006). Developing new academic skills, and a strong GPA, have both been shown to influence persistence (Bean & Metzner, 1985; Reason, 2009).

COM\_PROF, GUEST, and ADVICE were added from the Staff/Faculty Interaction concept. These variables assessed a student's likelihood for interacting with a faculty or staff member. Studies have found that good teacher behaviors and active teaching pedagogies positively influence persistence (Reason, 2009). An increased likelihood of interacting with faculty or staff members, therefore, may result in enhanced satisfaction with the educational experience (leading to enhanced institutional commitment) and greater social integration, both factors understood to increase persistence. Results of Model 3 are discussed in Chapter 6.

#### **Model 4.**

Model 4 was the final model which included new predictor variables. Predictors from Models 1, 2, and 3 that were carried forward into this model were: CHOICE, CUM\_GPA, HMWK, LIB\_ARTS, and REPUTATION. Additional predictors from the Extracurricular Activities and Peer Group Interactions concepts were also added to this model.



STU\_GVT, SOR\_FRAT, PLAY\_SPORTS, COM\_SERV, SDY\_ABROAD, and JOIN\_CLUB were added from the Extracurricular Activities concept. These variables assessed a student's best guess that they would participate in some form of peer based, extracurricular activity, such as a student club or organization. Involvement in educationally purposeful activities is an often researched influence on student persistence, warranting their inclusion here (Reason, 2009).

Housing status during the fall semester (ON\_OFF), PARTY, and HRS\_FRND were added from the Peer Interactions concept. Interacting with peers, especially those with similar values to oneself, has been shown to impact persistence (Reason, 2009; Tinto, 1993). These three variables served as a proxy for planned interaction with peers. Living in the residence hall, for example, should boost peer interactions as the student sees peers on a more regular basis than those who live off campus or at home. In addition, if a student spent large amounts of time socializing with peers while in high school, it is likely they will continue this tradition on the college campus. A discussion of the results of this model are discussed in Chapter 6.

#### **Model 5.**

Model 5 was developed in an attempt to refine the complete model, Model 4. Models 2 through 4 all included predictor variables that were statistically not significant. These are the predictors that were carried forward at the  $p < .1$  level in an attempt to make the model inclusive and flexible. While this action allowed for a more comprehensive model, it also increased the chances of false predictors being included. In other words, the predictors may not actually be contributing to the statistical

significance of the model. Since several significant models had been created, Model 5 was created to refine the model to ensure only variables which truly impacted persistence were included.

Specifically, the significance level for inclusion in the model was lowered from  $p < .1$  to  $p \leq .05$ . This significance level is slightly above the commonly used  $p < .05$ , indicating additional chances of making a type I error. A type I error is a false positive, or when the researcher determines there is an effect, but in reality there isn't (R. Heckard, personal communication, July 6, 2011). In the case of this model, a type I error would occur if a predictor is determined to be a significant predictor of persistence, when it actually isn't. The ramifications of this false positive do not create heinous consequences, as the predictor still has theoretical significance to be included. Due to this, it was acceptable to relax the significance level of predictors for this study (Stevens, 2009).

Setting the significance level for a predictor to be included in Model 5 to  $p \leq .05$ , removes many of the carryover variables from the previous models. Model 5 included five predictors that met the new significance criteria, as well as the college choice predictor which remained due to its importance to this study. Predictors that were included in this final model are: CHOICE, HSGPA, CUM\_GPA, REPUTATION, HMWK, and GRAD\_SCHOOL. This model is discussed in greater detail in Chapter 6.

## **Conclusion**

This section outlined the methodologies used to answer research questions two through five. These questions used a quantitative approach, employing inferential

statistical analysis to determine if there were differences in retention and GPA between students at their first- and second- or later-choice college. In addition, college choice was examined to see if it was a significant predictor of re-enrollment. Specifically, Chi-Square tests, a *t*-test for independent samples, and a logistic regression were conducted. The forthcoming Chapter 6 provides a discussion of the results of each of the statistical tests discussed in this chapter.

## CHAPTER 6: QUANTITATIVE RESULTS

This research study included separate quantitative and qualitative data to investigate factors that impact persistence for students at second- or later-choice colleges. This chapter will discuss the results of the quantitative analyses that inform research questions two through five. Results for each question will be discussed separately.

### Research Question 2

Research question two was as follows: *Within a technical college, do first-to-second year retention rates differ among students who attend their first-choice institution versus those attending a second- or later-choice institution?* The hypothesis that guided this research question was that students at a second-or later-choice college would be retained from fall-to-fall at a lower rate than those at a first-choice college. A chi-square test of independence was performed to examine the relationship between college choice and first-to-second year, or fall-to-fall, retention. While a mean difference was discovered, the relationship between these variables was not significant  $X^2 (1, N = 482) = .118, p = .731$ . As can be seen in Table 7, 70.2% of students at their first-choice college were retained for a second year, while 72.2% of students at their second-or later-choice college were retained for a second year.

Table 7  
*Fall-to-Fall Retention Rates by College Choice*

Variable	First Choice	Second or Later Choice
Retained	70.2% ( $n = 283$ )	72.2% ( $n = 57$ )
Retained (Not)	29.8% ( $n = 120$ )	27.8% ( $n = 22$ )
Total	100% ( $n = 403$ )	100% ( $n = 79$ )

Note.  $X^2 = .118, df = 1$ . Numbers in parentheses indicate column percentages.

\* $p < .05$

For this study, these results indicate that there is no difference in the retention rates of students at their second- or later-choice college versus those at their first-choice college. This is contrary to the hypothesis, which theorized second- or later-choice students would depart the institution in greater numbers. Thus, there is no credible evidence indicating students at their second- or later-choice college are more or less likely to be retained.

### **Research Question 3**

Research question three sought to determine if there were differences in grade point averages between students at a first-choice college versus at a later-choice college. Specifically, *within a technical college, is there a difference in first year grade point average between students who attend their first-choice institution versus those attending a second- or later-choice?* The hypothesis guiding this research question was that students at a second- or later-choice college would have a lower grade point average. A *t*-test for independent samples was conducted to compare cumulative GPA between students at their first-choice college and students at a second- or later-choice college. There were no significant differences in the GPA's for students at their first-choice college ( $M = 2.79, SD = .81$ ) and students at their second- or later-choice college ( $M = 2.67, SD = .89$ );  $t(411) = 1.11, p = .269$ . These results suggest that there is no significant difference in the first-year cumulative GPA between students who attend a first-choice and those at a later-choice college.

As discussed in the methodology section, a Mann-Whitney *U* test was also conducted to compare cumulative GPA between students at their first-choice or a

second- or later-choice college. The primary reason for this second statistical examination was to determine if the non-normality of the data resulted in reduced power or validity of the  $t$ -test. A Mann-Whitney  $U$  test indicated that the cumulative GPA was not significantly different between students at their first-choice college and students at a second- or later-choice college,  $U = 11058.0$ ,  $p = .298$ . The results from both the Mann-Whitney  $U$  test and  $t$ -test for independent samples indicate that there was not a significant difference in GPA between students at their first-choice college and students at their second- or later-choice college.

These results indicate that, on average, students at their first-choice college had a slightly higher first-year GPA than students at their second- or later-choice college, but it was not statistically significant. Consequently, there is no evidence to support the hypothesis that students at a second- or later-choice college have lower GPAs.

#### **Research Question 4**

Research question four is as follows: *Within a technical college, are students who enroll at a second- or later-choice institution more likely to stopout or transfer during their first year than students attending their first choice institution?* The hypothesis that guided this research question was that students at a second-or later-choice college would be more likely to stopout or transfer during their first year of study. A chi-square test of independence was performed to examine the relationship between college choice and transfer or stopout. The relationship between college choice and stopout/transfer was not significant  $X^2 (2, N = 482) = .965$ ,  $p = .617$ . As can be seen in Table 8, 87.3% of students at their first-choice college were retained from the

fall to the end of the spring semester during their first year, while 91.1% of students at their second-or later-choice college were retained during that same time period.

Students who initially enrolled at their first-choice institution stopped-out at a slightly higher rate (9.7%) than students at their second- or later-choice institution (6.3%).

Finally, 3% of students who started at their first-choice college transferred between the fall and spring semester of their first academic year, slightly higher than the 2.5% of students at their second- or later-choice college who transferred during this same time frame.

Table 8  
*Fall-to-Spring Retention Rates by College Choice*

Variable	First Choice	Second- or later-Choice
Retained	87.3% ( $n = 352$ )	91.1% ( $n = 72$ )
Stopout	9.7% ( $n = 39$ )	6.3% ( $n = 5$ )
Transfer	3.0% ( $n = 12$ )	2.5% ( $n = 2$ )
Total	100% ( $n = 403$ )	100% ( $n = 79$ )

Note.  $X^2 = .965$ ,  $df = 2$ . Numbers in parentheses indicate column percentages.

\* $p < .05$

For the purposes of this study, these results indicate that there was a slightly higher percentage of students at a second- or later-choice college who were retained, but it was not statistically significant. This is contradictory to the hypothesis, which theorized second- or later-choice students would transfer and stopout at higher rates. However, as was the case with the two previous research questions, these results were not statistically significant. In other words, random chance may have resulted in second- or later-choice students stopping-out or transferring at a lower rate.

### Research Question 5

Research question five examined college choice rank as well as other factors that predict first-to-second year transition for students attending a technical college.

Specifically, research question five asks: *Within a technical college, is the college choice rank (first-choice or second- or later-choice) a predictor of retention?* This is a revised research question five. As indicated in the methodology section, the available data would not support the original research question five as written. In addition, the limited population of second- or later-choice students resulted in question five being heavily influenced by students at their first-choice college. A logistic regression analysis was conducted to predict retention after the first year of study for 482 students at a technical college. The dependent variable for all models is whether a student was retained after their first year (RETAINED).

#### **Model 1.**

Model 1 included nine of the possible 14 predictor variables the limited dataset could support. These nine predictors were selected to represent background education and skills students brought with them to college and denote the first step in a manual stepwise logistic regression procedure. This model was found to be statistically significant from a constant-only model, indicating that the predictors as a set allowed for reliable distinguishing between students who were retained and those who were not,  $X^2(9, N = 482) = 22.531, p = .007$ . The Hosmer and Lemeshow test showed the model was an acceptable fit,  $X^2(8) = 6.116, p = .634$ . Nagelkerke's  $R^2$  of .067 indicated



an almost nonexistent (less than 1%) relationship between prediction and grouping. Prediction success overall was 71.2% (8% for not retained and 97.9% for retained).

An examination of the Wald criterion indicated that one of the nine variables made a significant contribution to prediction at the  $p < .05$  significance level. The lone significant variable was HSGPA (Wald  $X^2 = 11.146$ ,  $p = .001$ ). HSGPA had a positive relationship with retention, indicating students with higher high school GPAs were more likely to be retained. Specifically, for every one-unit increase in high school GPA, students were 1.257 times more likely to be retained. In addition, the Wald  $X^2$  statistic for CHOICE was .001 ( $p = .970$ ), indicating college choice was not a significant predictor of retention into the second year. Full results for this model are presented in Table 9.

HSGPA represents a student's self-reported grade point average while in high school. While self-reported, GPA is also concrete. It's probable that students had a sense of their high school grades and the GPA they reported is close to what they actually earned while in high school. The other variables included in this model are also self-reported, but are much more abstract. Students may not have strong reference points from which to assess their own leadership (LEADER), drive to achieve (DRIVE), or public speaking ability (SPEAKING), for example. As such, student responses to those questions could be varied and not actually in line with a student's true ability. As such, HSGPA appears to be the most concrete variable within the conceptual framework that measures a student's pre-college academic skills.

This model included one case that had studentized residuals greater than 2.00, which could be considered an outlier. This represented 0.21% of the dataset. True

outliers have the potential to make logistic regression results unstable. Therefore, the case was examined for missing data and/or anomalies that may explain why the outcome exceeded the fitted model. Nothing could be found that made this one case significantly different from the rest of the dataset. Therefore, it was determined that this one outlier was not negatively impacting the model and it was left in the dataset.

Table 9

*Model 1 Logistic Regression Results*

Variable	$\beta$	S.E.	Sig.	Exp( $\beta$ )
CHOICE	0.011	0.290	0.970	1.011
HSGPA	0.229	0.069	0.001	1.257
ACAD_ABILITY	0.065	0.211	0.757	1.067
DRIVE	0.172	0.150	0.251	1.188
LEADER	0.186	0.145	0.201	1.204
MATH_ABILITY	-0.042	0.137	0.759	0.959
SPEAKING	-0.068	0.132	0.607	0.934
INTEL_CONF	0.051	0.187	0.785	1.052
SOC_CONF	-0.069	0.159	0.666	0.933
Constant	-1.369	0.762	0.073	0.254
-2 Log Likelihood		543.008		
$X^2 (9, N = 482) = 22.531, p = .007$				
Nagelkerke R <sup>2</sup>		6.7%		
Hosmer & Lemeshow Test		$p = .634$		
Classification Accuracy		71.2%		

Note. See Table 6 for variable description and scaling.

**Model 2.**

As discussed in the methods section, predictors with statistical significance of  $p < .1$  were identified from Model 1. These predictors were retained in Model 2 to create a flexible and inclusive model. This resulted in only one variable from Model 1 being selected for inclusion, HSGPA. College choice was also included in the model since it was a variable deemed important to this study. These variables, combined with additional predictors related to a student's College Search, Intentions, and Commitment resulted

in a model which contained 11 predictors. This was within the limited sample's ideal range of between 9 and 14 predictors.

Model 2 was found to be statistically significant from a constant-only model, indicating that the predictors as a set allowed for reliable distinguishing between students who were retained and those who were not,  $X^2 (45, N = 482) = 34.359, p < .001$ . The Hosmer and Lemeshow test also showed the model was an acceptable fit,  $X^2 (8) = 7.515, p = .482$ . Nagelkerke's  $R^2$  of .107 indicated a weak relationship between prediction and grouping. Prediction success overall was 69.6% (13.1% for not retained and 93.5% for retained). An examination of the Wald criterion indicated that three of the 11 variables – HSGPA, REPUTATION, and GRAD\_SCHOOL – made a significant contribution to prediction ( $p \leq .05$ ). Results for this model are presented in Table 10.

This model included 4 cases that had studentized residuals greater than 2.00, which could be considered outliers. This represented 0.83% of the dataset. Each case was examined for missing data and/or anomalies that may explain why the outcomes exceeded the fitted model. Nothing could be found that made these cases drastically different from the rest of the dataset. Therefore, it was determined that these cases were accurate and that they should remain in the dataset. In other words, the outliers were determined to be valid cases and likely did not detract from model stability.

Table 10  
*Model 2 Logistic Regression Results*

Variable	$\beta$	S.E.	Sig.	Exp( $\beta$ )
CHOICE	-0.018	0.313	0.955	0.982
HSGPA	0.299	0.068	0.000	1.349
CH_MAJOR	-0.055	0.154	0.721	0.946
SATISFIED	-0.245	0.181	0.176	0.783
TRANSFER	-0.132	0.151	0.382	0.876

Variable	$\beta$	S.E.	Sig.	Exp( $\beta$ )
REPUTATION	0.382	0.189	0.043	1.466
GRAD_SCHOOL	-0.314	0.16	0.050	0.731
GOOD_JOBS	0.29	0.216	0.179	1.337
LIB_ARTS	0.32	0.171	0.061	1.378
SIZE	0.084	0.147	0.569	1.088
BETTER_JOB	-0.046	0.255	0.856	0.955
Constant	-1.363	1.076	0.205	0.256
-2 Log Likelihood		497.659		
		$X^2 (45, N = 482) = 34.359, p < .001$		
Nagelkerke R <sup>2</sup>		10.7%		
Hosmer & Lemeshow Test		$p = .482$		
Classification Accuracy		69.6%		

Note. See Table 6 for variable description and scaling.

Overall, Model 2 was superior to Model 1 in terms of overall model fit, but not in predictive ability. It also provided two additional significant predictors of student retention. HSGPA (Wald  $X^2 = 19.121, p < .001$ ) once again had a positive relationship, indicating increasing high school GPA was associated with higher rates of retention. The odds ratio for this predictor indicated that for every one-unit increase in high school GPA, students were 1.349 times more likely to be retained into their second year of study. These findings showed that the highest achieving high school students were more likely to be retained at the study institution than lower achieving students. This is congruent with much of the research literature surrounding the topic of student persistence, where higher achieving students are generally more likely to persist (Reason, 2009).

REPUTATION (Wald  $X^2 = 4.087, p = .043$ ) was also a significant predictor in this model. REPUTATION represented a student's belief that the institution having a good academic reputation was a reason for them to initially enroll. REPUTATION had a

positive relationship with retention, indicating increasing perceptions of academic reputation were associated with increased retention. Specifically, for every one-unit increase in the importance of the academic reputation as a reason to enroll, a student was 1.466 times more likely to be retained. These findings indicated that students who strongly believed the study institution had a strong academic reputation were more likely to be retained. This finding is in line with previous research. In this study, REPUTATION served as a proxy for quality. If a student believed the college had a good academic reputation, they likely also believed it was a high quality institution. According to Reason (2009), students at higher quality institutions are more likely to be retained.

GRAD\_SCHOOL (Wald  $X^2 = 3.831$ ,  $p = .050$ ) was the final predictor found to be statistically significant. GRAD\_SCHOOL also represented a reason for attending the study institution. Specifically, it was the importance of graduate's gaining admission to top graduate and professional schools in the student's enrollment decision. GRAD\_SCHOOL had a negative relationship with retention, indicating increased importance of graduates gaining admission to top graduate schools was negatively associated with retention. Specifically, for each one-unit increase in the importance of graduate school admission, students were .731 times less likely to be retained. These findings indicate that students who were highly motivated by graduates gaining admission to graduate school as a reason to enroll were less likely to be retained.

Similar to REPUTATION, GRAD\_SCHOOL also served as a proxy for academic quality. If graduates are regularly admitted to top professional and graduate schools, the college is likely of high academic quality. However, this finding seemingly contradicts

that of REPUTATION in that it indicated students who did not view the study institution as of high quality (via the GRAD\_SCHOOL predictor) were more likely to be retained. Some explanation may lie in the study institution. This study was conducted at a technical college that specializes in vocationally-oriented majors. In other words, students at the study site were preparing for immediate entrance into careers, and generally ones where graduate education was not necessary for employment, or even offered. As such, students who enrolled because of a perception that graduates gained admission to top graduate schools may have been misinformed. Upon enrollment, they discovered the study institution was not the type of college they believed, and thus left before their second year. Students who were retained knew the college wasn't a strong feeder for graduate school and indicated GRAD\_SCHOOL was not important to their enrollment decision. Finally, the Wald statistic for CHOICE was .003 ( $p = .955$ ), indicating college choice was not a significant predictor of persistence into the second year.

The variables found to be significant in this model were classified under the Skills/Education (HSGPA) and College Search (REPUTATION and GRAD\_SCHOOL) concepts in the conceptual framework that guided this study. No constructs from the Intentions concept were found to be significant predictors of re-enrollment. Based on the results of this model, it appears that intentions were not as strong at predicting retention as reputation constructs. In other words, students who believed the institution had a strong academic reputation were more likely to commit and be retained. Intentions, which represented students' future plans, were not significant predictors.

**Model 3.**

Model 3 included 12 of the maximum 14 predictor variables. Once again, predictors with statistical significance of  $p < .1$  were identified from Model 2 and retained for this model. This resulted in one carryover variable (LIB\_ARTS) being selected for inclusion, along with HSGPA, REPUTATION, and GRAD\_SCHOOL which were statistically significant in Model 2 at the  $p \leq .05$  level. College choice was also included in the model since it was a variable deemed important to this study. In addition to these carryover variables, seven variables that represent the Academic Performance and Staff Interaction concepts were added to the model. Specifically, CUM\_GPA, STUDIED, TUTORED, HMWK, COM\_PROF, GUEST, and ADVICE were added to this model.

Model 3 was found to be statistically significant from a constant-only model, indicating that the predictors as a set allowed for reliable distinguishing between students who were retained and those who were not,  $X^2 (12, N = 482) = 113.805, p < .001$ . The Hosmer and Lemeshow test also showed the model was an acceptable fit,  $X^2 (8) = 11.424, p = .179$ . Nagelkerke's  $R^2$  of .423 indicated a moderate relationship between prediction and grouping. Prediction success overall was 88.7% (50.7% for not retained and 97.7% for retained).

An examination of the Wald criterion indicated that three of the 12 variables made a statistically significant contribution to prediction at the  $p < .05$  level: CUM\_GPA, REPUTATION, and HMWK. In addition, the Wald statistic for CHOICE was 1.826 ( $p = .177$ ), indicating college choice was not a significant predictor of persistence into the second year.

CUM\_GPA (Wald  $X^2 = 60.025$ ,  $p < .001$ ) had a positive relationship with persistence, indicating increasing cumulative GPA is associated with higher rates of persistence. The odds ratio for this predictor indicated that for every one-point rise in cumulative college GPA, students are 7.016 times more likely to persist into the second year. This suggests that increased academic performance was strongly related to persistence into the second year. This finding is in line with other research, which has shown a positive relationship between higher GPAs and persistence (Bean & Metzner, 1985; Reason, 2009).

REPUTATION (Wald  $X^2 = 4.828$ ,  $p = .028$ ) was also a significant predictor in this model. REPUTATION represents a student's belief that the institution having a good academic reputation was a reason for them to initially enroll. REPUTATION had a positive relationship with retention, indicating increasing perceptions of academic reputation were associated with increased retention. Specifically, for every one-unit increase in the importance of the academic reputation as a reason to enroll, a student was 1.833 times more likely to be retained. These findings indicate that students who strongly believed the study institution had a strong academic reputation were more likely to be retained.

HMWK (Wald  $X^2 = 3.906$ ,  $p = .048$ ) was the final significant predictor in this model. HMWK represents the number of hours the student spent studying or doing homework during their final year of high school. HMWK had a negative relationship with retention, indicating increasing hours spent studying were associated with decreased retention. Specifically, for each one-unit increase in time spent studying, a student was



.759 times less likely to be retained. Put differently, students who studied or took many hours to do homework during their final year of high school were less likely to be retained in this model. This is contrary to the findings discussed in the literature review. Numerous studies found increased engagement with academics was positively related to retention (Bean & Metzner, 1985; Pascarella & Terenzini, 2005; Reason, 2009; Strayhorn, 2006).

Engaging in more studying or homework envelops the student in their academics and, based on these other studies, should result in greater retention. However, HMWK is a proxy for academic engagement. Just because a student spent a lot of time studying while in high school doesn't necessarily mean they will do that in college. Perhaps these students chose to study in lesser amounts in college. Another possibility is that students who spend copious amounts of time studying may have ineffective academic habits. Studying for more than 20 hours per week may indicate a poor strategy or a student who actually was not learning the material. Either way, time spent on studying may have exhausted the student, influencing them to depart rather than continue with the workload. No matter the explanation, this finding is contrary to other research studies.

Full results for this model are presented in Table 11.

Table 11  
*Model 3 Logistic Regression Results*

Variable	$\beta$	S.E.	Sig.	Exp( $\beta$ )
CHOICE	-0.179	0.43	0.676	0.836
HSGPA	0.025	0.116	0.832	1.025
REPUTATION	0.606	0.276	0.028	1.833
GRAD_SCHOOL	0.054	0.233	0.817	1.055
LIB_ARTS	0.472	0.258	0.067	1.604
STUDIED	-0.448	0.308	0.146	0.639

Variable	$\beta$	S.E.	Sig.	Exp( $\beta$ )
CUM_GPA	1.948	0.251	0.000	7.016
COM_PROF	0.035	0.219	0.873	1.036
ADVICE	0.378	0.317	0.234	1.459
GUEST	0.488	0.453	0.282	1.628
TUTORED	-0.095	0.363	0.793	0.909
HMWK	-0.276	0.14	0.048	0.759
Constant	-5.582	1.399	0.000	0.004
-2 Log Likelihood		248.871		
		$X^2 (12, N = 482) = 113.805, p < .001$		
Nagelkerke R <sup>2</sup>		42.3%		
Hosmer & Lemeshow Test		$p = .179$		
Classification Accuracy		88.7%		

Note. See Table 6 for variable description and scaling.

The predictors found to be significant in this model represent the College Search (REPUTATION) and Academic Performance (HMWK and CUM\_GPA) concepts on the conceptual framework that is guiding this study (see page 41). In addition, HSGPA, which was previously significant, was no longer a significant predictor of re-enrollment. It appears that current academic performance – which was measured by CUM\_GPA and HMWK (as a proxy) were much more impactful to retention decisions than background academic skills. In addition, no predictors from the Intentions, Commitment, and Staff/Faculty Interaction concepts were found to be significant predictors of re-enrollment.

This model included 19 cases that had studentized residuals greater than 2.00, which could be considered outliers. This represented 3.94% of the dataset. Each case was examined for missing data and/or anomalies that may explain why the outcomes exceeded the fitted model. Nothing could be found that made these cases drastically different from the rest of the dataset. Therefore, it was determined that these cases

were accurate and that they should remain in the dataset. In other words, the outliers were determined to be valid cases and likely did not detract from model stability.

Overall, Model 3 was superior to Models 1 and 2 in terms of overall model fit and predictive ability. In addition, Model 3 had the highest value for Nagelkerke's  $R^2$  so far. This is a pseudo  $R^2$ , which means it does not predict the total variability of the outcome accounted for by the model, as in ordinary least squares regression. However, Nagelkerke's  $R^2$  is a useful tool to compare regressions that use the same data and predict the same outcome. This was the case with these models, and the higher Nagelkerke's  $R^2$  signifies the model that best predicts the outcome (UCLA: Statistical Consulting Group, 2011). With a predictive ability of 88.7% and the largest Nagelkerke's  $R^2$ , Model 3 represented a viable model for predicting retention at the study institution.

#### **Model 4.**

Model 4 was the final model which included new predictor variables. Predictors from Models 1, 2, and 3 that were carried forward into this model were: CHOICE, CUM\_GPA, HMWK, LIB\_ARTS, and REPUTATION. Additional predictors from the Extracurricular Activities and Peer Group Interactions concepts were also added to this model. These were STU\_GVT, SOR\_FRAT, PLAY\_SPORTS, COM\_SERV, SDY\_ABROAD, and JOIN\_CLUB from the Extracurricular Activities concept and ON\_OFF, PARTY, and HRS\_FRND from the Peer Group Interactions concept.

This model represented the complete conceptual framework developed for this study. Model 4 was found to be statistically significant from a constant-only model, indicating that the predictors as a set allowed for reliable distinguishing between

students who were retained and those who were not,  $X^2 (15, N = 482) = 114.457, p < .001$ . The Hosmer and Lemeshow test also showed the model was an acceptable fit,  $X^2 (8) = 14.561, p = .068$ . Nagelkerke's  $R^2$  of .423 indicated a moderate relationship between prediction and grouping. Prediction success overall was 87.7% (49.3% for not retained and 96.7% for retained). Of the 14 variables in the model, three were found to be statistically significant predictors of retention. The college choice predictor remained not significant (Wald  $X^2 = .215, p = .643$ ). Results for this model are presented in Table 12.

Table 12  
*Model 4 Logistic Regression Results*

Variable	$\beta$	S.E.	Sig.	Exp( $\beta$ )
REPUTATION	0.597	0.265	0.024	1.816
LIB_ARTS	0.444	0.253	0.080	1.558
CUM_GPA	1.914	0.241	0.000	6.777
HMWK	-0.387	0.136	0.004	0.679
STU_GVT	-0.247	0.249	0.321	0.781
SOR_FRAT	-0.082	0.223	0.713	0.921
JOIN_CLUB	0.152	0.242	0.530	1.165
ON_OFF (on campus)			0.302	
ON_OFF(1) (commuter)	-0.004	0.518	0.993	0.996
ON_OFF(2) (off campus)	-0.524	0.364	0.150	0.592
HRS_FRND	-0.115	0.112	0.303	0.891
PARTY	0.081	0.102	0.430	1.084
SDY_ABROAD	0.154	0.227	0.499	1.166
PLAY_SPORTS	0.035	0.174	0.842	1.035
COM_SERV	0.331	0.229	0.148	1.392
CHOICE	-0.2	0.431	0.643	0.819
Constant	-4.621	1.371	0.001	0.01
-2 Log Likelihood	249.485			
	$X^2 (15, N = 482) = 114.457, p < .001$			
Nagelkerke $R^2$	42.3%			
Hosmer & Lemeshow Test	$p = .068$			
Classification Accuracy	87.7%			

Note. See Table 6 for variable description and scaling.

Model 4 included 15 cases that had studentized residuals greater than 2.00, which could be considered outliers. This represented 3.11% of the dataset. Since outliers can cause logistic regression models to become unstable, each case was examined for missing data and/or anomalies that may explain why the outcomes exceeded the fitted model. Nothing could be found that made these cases drastically different from the rest of the dataset. Therefore, it was determined that these outcomes were accurate and the cases should remain in the dataset. In other words, the outliers were determined to be valid cases and likely did not detract from model stability.

The three predictors found to be statistically significant at the  $p < .05$  level were CUM\_GPA, HMWK, and REPUTATION. CUM\_GPA (Wald  $X^2 = 63.000$ ,  $p < .001$ ) had a positive relationship with persistence, indicating increasing cumulative GPA was associated with higher rates of persistence. The odds ratio for this predictor showed that for every one-point rise in cumulative college GPA, students were 6.777 times more likely to persist into the second year. This suggests that increased academic performance was strongly related to persistence into the second year. This finding is in line with other research, which has shown a positive relationship between higher GPAs and persistence (Bean & Metzner, 1985; Reason, 2009).

HMWK (Wald  $X^2 = 8.151$ ,  $p = .004$ ) was also a significant predictor in this model. HMWK represented the number of hours the student spent studying or doing homework during their final year of high school. HMWK had a negative relationship with retention, indicating increasing hours spent studying were associated with decreased

retention. Specifically, for each one-unit increase in time spent studying, a student was .679 times less likely to be retained. Put differently, students who studied or took many hours to do homework during their final year of high school were less likely to be retained in this model. This is contrary to the findings discussed in the literature review. Numerous studies found increased engagement with academics was positively related to persistence (Bean & Metzner, 1985; Pascarella & Terenzini, 2005; Reason, 2009; Strayhorn, 2006).

REPUTATION (Wald  $X^2 = 5.068$ ,  $p = .024$ ) was the final significant predictor in this model. REPUTATION represented a student's belief that the institution having a good academic reputation was a reason for them to initially enroll. REPUTATION had a positive relationship with retention, indicating increasing perceptions of academic reputation were associated with increased retention. Specifically, for every one-unit increase in the importance of the academic reputation as a reason to enroll, a student was 1.816 times more likely to be retained. These findings indicated that students who strongly believed the study institution had a strong academic reputation were more likely to be retained.

Model 4 included constructs from all concepts identified in the conceptual framework that is guiding this study (see Figure 1). However, the only significant predictors discovered were classified within the Academic Performance and College Search concepts. Background education (HSGPA) was previously found to be significant, but seems to have been replaced by current academic performance. In addition, interacting with peers and faculty, which were hypothesized would diminish student

feelings of incongruence and isolation, were not significant. Based on the results of this model, it appeared strong academic performance and a belief in a solid academic reputation were the strongest predictors of retention at this technical college.

Overall, Model 4 was superior to Models 1 and 2 in terms of overall model fit and predictive ability. However, Model 3 had a slightly higher predictive ability. Model 4 also shared the highest value for Nagelkerke's  $R^2$  with Model 3. In short, Models 3 and 4 were very similar, with Model 3 remaining slightly better in predictive ability.

#### **Model 5.**

Model 5 was developed as a refinement to the prior models. Models 1, 2, 3, and 4 all included predictors that were statistically significant at the  $p < .1$  level, above the commonly referenced significance level of  $p < .05$ . This was done to create a comprehensive and flexible model. However, it also increased the chances of false predictors being included. In other words, the predictors may have not actually been contributing to the statistical significance of the model. Since several significant models had been created, Model 5 was created to refine the model to ensure only variables which truly impacted persistence were included.

Model 5 included only predictors from Models 1, 2, 3, and 4 which had significance levels of  $p \leq .05$ , as well as the college choice variable. The reasoning for this selection was discussed in greater detail in the quantitative methodology section; but briefly, it was chosen to allow versatility while still signifying an acceptable level of statistical sensitivity. The lowered significance level for inclusion resulted in a model that

contained six predictors, yet also achieved the second highest predictive ability of any model.

Model 5 was found to be statistically significant from a constant-only model, indicating that the predictors as a set allowed for reliable distinguishing between students who were retained and those who were not,  $X^2 (6, N = 482) = 116.516, p < .001$ . However, the Hosmer and Lemeshow test showed the model was not an acceptable fit,  $X^2 (8) = 19.34, p = .013$ . Nagelkerke's  $R^2$  of .414 indicated a moderately strong relationship between prediction and grouping. Prediction success overall was 88.0% (47.3% for not retained and 97.5% for retained). Of the 6 variables in the model, three were found to be statistically significant predictors of retention. Results for this model are presented in Table 13.

Table 13

*Model 5 Logistic Regression Results*

Variable	$\beta$	S.E.	Sig.	Exp( $\beta$ )
REPUTATION	0.702	0.262	0.007	2.017
HMWK	-0.273	0.128	0.033	0.761
CUM_GPA	1.939	0.243	<0.001	6.953
HSGPA	-0.019	0.11	0.865	0.981
GRAD_SCHOOL	0.085	0.219	0.697	1.089
CHOICE	-0.277	0.415	0.504	0.758
Constant	-4.011	1.023	<0.001	0.018
-2 Log Likelihood		261.366		
$X^2 (6, N = 482) = 116.516, p < .001$ .				
Nagelkerke $R^2$		41.4%		
Hosmer & Lemeshow Test		$p = .013$		
Classification Accuracy		88.0%		

*Note.* See Table 6 for variable description and scaling.

The model included 18 cases that had studentized residuals greater than 2.00, which could be considered outliers. This represented 3.73% of the dataset. Each case



was examined for missing data and/or anomalies that may explain why the outcomes exceeded the fitted model. Nothing could be found that made these cases drastically different from the rest of the dataset. Therefore, it was determined that these outcomes were accurate and the cases should remain in the dataset. In other words, the outliers were determined to be valid cases and likely did not detract from model stability.

The three predictors found to be statistically significant at the  $p < .05$  level were CUM\_GPA, HMWK, and REPUTATION. CUM\_GPA (Wald  $X^2 = 63.868$ ,  $p < .001$ ) had a positive relationship with persistence, indicating increasing cumulative GPA was associated with higher rates of persistence. The odds ratio for this predictor indicated that for every one-point rise in cumulative college GPA, students were 6.953 times more likely to persist into the second year. This suggests that increased academic performance was strongly related to persistence into the second year. This finding is in line with other research, which has shown a positive relationship between higher GPAs and persistence (Bean & Metzner, 1985; Reason, 2009).

REPUTATION (Wald  $X^2 = 7.154$ ,  $p = .007$ ) was another significant predictor in this model. REPUTATION represented a student's belief that the institution having a good academic reputation was a reason for them to initially enroll. REPUTATION had a positive relationship with retention, indicating increasing perceptions of academic reputation were associated with increased retention. Specifically, for every one-unit increase in the importance of the academic reputation as a reason to enroll, a student was 2.017 times more likely to be retained. These findings indicate that students who

strongly believed the study institution had a strong academic reputation were more likely to be retained.

HMWK (Wald  $X^2 = 4.557$ ,  $p = .033$ ) was the final significant predictor in this model. HMWK represented the number of hours the student spent studying or doing homework during their final year of high school. HMWK had a negative relationship with retention, indicating increasing hours spent studying were associated with decreased retention. Specifically, for each one-unit increase in time spent studying, a student was .761 times less likely to be retained. Put differently, students who studied or took many hours to do homework during their final year of high school were less likely to be retained in this model. This is contrary to the findings discussed in the literature review. Numerous studies found increased engagement with academics was positively related to persistence (Bean & Metzner, 1985; Pascarella & Terenzini, 2005; Reason, 2009; Strayhorn, 2006). Once again, the college choice predictor remained not significant (Wald  $X^2 = .447$ ,  $p = .504$ ).

Overall, Model 5 is superior to Models 1, 2, and 4 in predictive ability. However, the Hosmer and Lemeshow goodness-of-fit test shows the model was not a good fit with these data, which means the results should be interpreted with caution. In addition, it had a Nagelkerke's  $R^2$  lower than Models 3 and 4. In short, Model 5 is not an appropriate model for this data.

#### **Model comparisons.**

Five separate logistic regression models were fitted to answer research question five. Due to a limited sample size, the available dataset could only support 14 variables.

The conceptual framework and literature review were used to bracket the complete variable list into a list of predictors with the greatest theoretical significance. A manual, stepwise procedure was then conducted to add and remove predictors until Model 4 accounted for all concepts of the conceptual framework.

Model 1 fit the data using background variables known to impact student persistence. Model 2 built upon Model 1 and included additional predictor variables related to a student's College Search, Intentions, and Commitment. Model 3 included new predictors that were classified under the Academic Performance and Staff/Faculty Interaction concepts. Model 4 added predictors from the final two concepts in the conceptual framework: Extracurricular Activities and Peer Group Interactions. Finally, Model 5 was developed as a refinement of the other models, using lower levels of statistical significance to identify predictors for inclusion. This model encompassed only six predictors. Table 14 provides a brief synopsis of the descriptive elements of each model.

Table 14  
*Logistic Regression Model Comparisons*

Statistic	Model 1	Model 2	Model 3	Model 4	Model 5
Model					
$\chi^2$	22.531	34.359	113.805	114.457	116.516
<i>df</i>	9	11	12	15	6
<i>p</i>	0.007	<.001	<.001	<.001	<.001
-2Log Likelihood	543.008	497.659	248.871	249.485	263.705
Nagelkerke $R^2$	6.7%	10.7%	42.3%	42.3%	41.4%
Hosmer & Lemeshow					
$\chi^2$	6.116	7.515	11.424	14.561	19.34
<i>df</i>	8	8	8	8	8
<i>p</i>	0.634	0.482	0.179	0.068	0.013
Classification Accuracy	71.2	69.6	88.7	87.7	88.0

Statistic	Model 1	Model 2	Model 3	Model 4	Model 5
Outliers ( <i>n</i> )	1	4	19	15	18
Outlier % of Sample	0.21%	0.83%	3.94%	3.11%	3.73%

Overall, four of the models identified accurately predicted retention for a second year of study and met each of the goodness-of-fit tests used in logistic regression. As discussed previously, Model 5 did not pass all the goodness-of-fit tests and should therefore be interpreted with caution. Models 3 and 4 were very similar in regards to predictive ability and overall model fit. Model 3 had the greatest predictive ability and had a Nagelkerke's  $R^2$  equal to Model 4. When testing models using the same data and same outcome, the highest Nagelkerke's  $R^2$  represents the model that best predicts the outcome (UCLA: Statistical Consulting Group, 2011). Based on this, and a predictive ability that is 1% higher than the other models, Model 3 was the best model for this dataset.

#### **Final model in relation to the research question.**

Five separate logistic regression models were fit to answer research question five: *Within a technical college, is the college choice rank (first-choice or second- or later-choice) a predictor of retention?* Each model contained predictors, based upon a review of the literature, believed to influence student persistence. Along with those known predictors, a college choice predictor was included in every model. This variable indicated if the study site was the student's first-choice or second- or later-choice institution. All five models showed no significant predictive value for the college choice variable. In other words, each of the models suggest that attending a first-choice college

versus a second- or later-choice college has no statistically significant impact on persistence into a second year of study.

The final model did, however, identify several variables that are statistically significant predictors of persistence. CUM\_GPA (Wald  $X^2 = 60.025$ ,  $p < .001$ ) had a positive relationship with persistence, indicating increasing cumulative GPA was associated with higher rates of persistence. The odds ratio for this predictor indicated that for every one-point rise in cumulative college GPA, students were 7.016 times more likely to persist into the second year. This suggests that increased academic performance was strongly related to persistence into the second year. This finding is in line with other research, which has shown a positive relationship between higher GPAs and persistence (Bean & Metzner, 1985; Reason, 2009).

REPUTATION (Wald  $X^2 = 4.828$ ,  $p = .028$ ) was also a significant predictor in this model. REPUTATION represented a student's belief that the institution having a good academic reputation was a reason for them to initially enroll. REPUTATION had a positive relationship with retention, indicating increasing perceptions of academic reputation were associated with increased retention. Specifically, for every one-unit increase in the importance of the academic reputation as a reason to enroll, a student was 1.833 times more likely to be retained. These findings indicate that students who strongly believed the study institution had a strong academic reputation were more likely to be retained. In this study, REPUTATION served as a proxy for quality. If a student believed the college had a good academic reputation, they likely also believed it

was a high quality institution. According to Reason (2009), students at higher quality institutions are more likely to be retained.

HMWK (Wald  $X^2 = 3.906$ ,  $p = .048$ ) was the final significant predictor in this model. HMWK represents the number of hours the student spent studying or doing homework during their final year of high school. HMWK had a negative relationship with retention, indicating increasing hours spent studying were associated with decreased retention. Specifically, for each one-unit increase in time spent studying, a student was .759 times less likely to be retained. Put differently, students who studied or took many hours to do homework during their final year of high school were less likely to be retained in this model. This is contrary to the findings discussed in the literature review. Numerous studies found increased engagement with academics was positively related to retention (Bean & Metzner, 1985; Pascarella & Terenzini, 2005; Reason, 2009; Strayhorn, 2006).

Engaging in more studying or homework envelops the student in their academics and, based on these other studies, should result in greater retention. However, HMWK was a proxy for academic engagement. Just because a student spent a lot of time studying while in high school doesn't necessarily mean they will do that in college. Perhaps these students chose to study in lesser amounts in college. Another possibility is that students who spend copious amounts of time studying may have ineffective academic habits. Studying for more than 20 hours per week may indicate a poor strategy or a student who actually is not learning the material. Either way, time spent on studying may have exhausted the student, influencing them to depart rather than

continue with the workload. No matter the explanation, this finding is contrary to other research studies.

The investigation into these re-enrollment predictors indicates that the majority of the concepts identified on the conceptual framework that guided this study (see page 41) are not significant predictors of re-enrollment. In fact, Academic Performance and College Search were the only two concepts with significant predictors.

### **Conclusion**

This chapter presented the results of statistical tests meant to uncover differences in fall-to-fall retention, first-year GPA, and fall-to-spring retention for students at a second- or later-choice college and those at a first choice institution. Logistic regression models were also fit to determine the predictors of re-enrollment at a technical college, and if college choice serves as a significant predictor of re-enrollment. The findings indicate that there were no statistical differences in retention or GPA between these two subsets of students. Additionally, college choice was determined to not be a re-enrollment predictor at a technical college. A discussion regarding the meaning of these results for researchers and practitioners will occur in Chapter 7.

## CHAPTER 7: DISCUSSION

Enrollments in postsecondary education have climbed steadily for more than 20 years. However, during this same time period, students enrolled in their school of first-choice in decreasing numbers. In fact, slightly more than 55% indicated they enrolled at their first-choice college in 2013 (Eagan, Lozano, Hurtado, & Case, 2013). Thus, more students are attending institutions where they did not, at least originally, plan to attend. This raises numerous questions for students, researchers, and administrators, and served as the impetus for this study. This dissertation investigated five separate research questions regarding the connections of attending a second- or later-choice college with student persistence and grade point average (GPA). Two separate research studies were employed to investigate the phenomenon of attending a second- or later-choice college. Study A was a qualitative analysis influenced by the grounded theory and phenomenological approaches that investigated the first research question, which was:

1. What influences students to re-enroll in an institution that was not their first-choice?

Study B used inferential statistical analyses to examine research questions two through five, which are repeated here:

2. Within a technical college, do first-to-second year retention rates differ among students who attend their first-choice institution versus those attending a second- or later-choice institution?



3. Within a technical college, is there a difference in first year grade point average between students who attend their first-choice institution versus those attending a second- or later-choice?
4. Within a technical college, are students who enroll at a second- or later-choice institution more likely to stopout or transfer during their first year than students attending their first choice institution?
5. Within a technical college, is the college choice rank (first-choice or second- or later-choice) a predictor of retention?

Each study was conducted at a mid-size, open-admissions institution in the northeast portion of the United States. The institution offers more than 125 programs leading to certificate's, associate's, and bachelor's degrees in the technical fields. In addition, greater than 75% of students choose the institution as a first-choice college (internal report, 2012). This site was chosen for a number of reasons. First, technical colleges enroll almost half of the entire undergraduate population in the United States (American Association of Community Colleges, 2016a). As such, this is a subpopulation of institutions that likely has an increased level of students who are attending as a second- or later-choice college. This trend is likely to remain, as funding for higher education returns to pre-recession (2008) levels, much of it is being directed to these institutions (Executive Office of the President, 2015; Hultin & Weeden, 2016; Juskiewicz, 2016). Second, the fact that the majority of students at the study institution claimed it was a first-choice college created an interesting element to enrollment at a second- or later-choice college. In short, second-choice students were likely surrounded

by first-choice students, which may make them feel more uneasy with their decision to attend and re-enroll.

After receiving the appropriate research approvals from Penn State and the study site, research began in earnest. The qualitative portion, Study A, used a sample population drawn from currently enrolled students who initially applied for the fall 2014 semester. This sample population was used for two primary reasons. One, the participants were accessible, as they remained enrolled at the study institution. Two, they had made the decision to re-enroll for a second year of study within the past two years, increasing the likelihood of better memories and more nuanced data. Focus groups were used to garner the data because they enabled students to interact with one another, expanding upon their answers, and providing additional detail to individual student responses (Finch & Lewis, 2003).

The quantitative analysis, Study B, consisted of an exploratory analysis using a different sample population from the same study institution. The study site Institutional Research Office supplied a dataset of student responses to the 2006 CIRP – The Freshman Survey, along with institutional data regarding enrollment, living arrangements, and grade point averages (GPA). These data were selected due to their availability and the possibility they could elucidate additional information regarding the concept of first-choice and later-choice colleges. Specifically, the quantitative data were used to examine research questions two through five. Upon initial review, more than 700 records were found to be missing critical information – enrollment location and GPA. In order to ensure the data remained appropriate, an analysis was conducted

between missing records and complete records. This analysis found little difference between the two populations, justifying its use as a lowered sample of 482 records.

Several inferential statistical tests were used in Study B. A chi-square was conducted to investigate research questions two and four. These questions dealt with differences in retention (RQ2 = fall-to-fall and RQ4 = fall-to-spring) between students at their first-choice college and those at a second- or later-choice institution. A *t*-test for independent samples and a Mann-Whitney *U* test were used to investigate research question three. Finally, research question five used five separate logistic regression models to examine the predictors of persistence into the second year to determine if college choice rank (first-choice or second- or later-choice) was a predictor of re-enrollment.

### **Key Findings**

This dissertation is the first to develop an understanding regarding the reasons students self-report for re-enrolling in an institution that was not their first-choice. Several of the concepts identified are predictors previously discussed in great detail within the body of research (e.g., peer interactions and faculty interactions). However, this dissertation uncovered several concepts that were previously overlooked or discussed in limited ways.

Study A uncovered the concept of barriers to leaving as a re-enrollment factor. A review of the literature on student persistence is daunting. There are thousands of published journal articles and books that discuss this topic. As such, it is impossible to indicate that the concept of barriers as a persistence factor is unique. However, it was

not uncovered during the literature review for this study, nor in preparation of this manuscript. As such, this concept represents an important additional piece to the research body surrounding student persistence. In general, barriers to leaving are experiences that, should they occur, result in negative outcomes. In order to avoid these negative outcomes, students saw re-enrollment as their best option. This concept, therefore, is the opposite of most other predictors of student persistence. In much of the research literature, predictors of persistence are the types of activities that make students happy and satisfied with their enrollment – such as positive social interactions, good GPA, and fit within the institution.

The results of Study A indicate that concerns regarding the repercussions to leaving were just as meaningful as positive predictors to students at a second- or later-choice college. Put differently, the fact that leaving the institution would result in increased transaction costs (e.g., additional time and money), as well as disappoint family and friends, motivated students to return. A review of the literature found little direct support for this concept as a barrier for transferring. However, two studies do mention it as a concern for students who did actually transfer.

In a study of the transfer patterns of students in Illinois, students were generally satisfied with the transferability of credits, but were disappointed in how they were applied (Hood, Hunt, & Haeffele, 2009). For example, several students desired to transfer into a nursing major, but their credits would not transfer into that major. Those students decided to change their major to maximize their credit transfer; however, some also shared thoughts of transferring to yet another institution due to their inability

to enroll in their desired major (Hood, Hunt, & Haeffele, 2009). This supports the findings in this study in that it reinforces the importance of credit transfer in the transfer process. While some Illinois students accepted switching majors to maximize transfer credit, it appears others had reservations and were considering transferring again. Participants in this dissertation skipped this step and decided to remain enrolled at the study institution, rather than be forced to retake classes or change majors.

Monaghan and Attewell (2015) discovered similar results in a study using data from the Beginning Postsecondary Students (BPS) Longitudinal Study. Specifically, the majority of community college to 4-year college transfers lost credits in the process. In fact, 14% of transfer students transferred less than 10% of their credits, while 58% of transfer students transferred more than 90% of their credits. This large loss in transfer credit resulted in a significantly lower likelihood of the student earning a bachelor's degree (Monaghan & Attewell, 2015). While these findings do not directly support this study's findings, they do raise indirect support. The loss of credit is significantly related to non-completion of a bachelor's degree. Participants in this study may have understood this as a possibility, as they mentioned on several occasions they were concerned with starting over. Charlie stated, "I would have had to re-start from scratch, so that was more of a driving factor not to transfer." It is possible Charlie, and the other students, believed the increased time to complete a degree after a loss in credits from transfer would have discouraged them, leading to a complete drop-out from college. Remaining at the study institution would have created a stronger possibility of actually completing a degree in the minds of these participants.

Returning, despite not being fully satisfied with their college experience, seemed like the best option for the study participants. It had the lowest transaction costs – a known time to degree, no loss in credits, and no additional financial costs for new courses. The significance of these barriers to the re-enrollment decision for these participants may be a factor unique to students at a second- or later-choice college, as well as a result of this generation's desire for instant gratification (Alsop, 2014). It could also be a factor keeping all students – first or last-choice – from leaving, as the two referenced studies seem to suggest. Either way, it reveals a concept that has previously not been adequately researched.

The significance of this finding is certainly dependent upon one's perspective. From an institutional perspective, there is little that can be done to change barriers to leaving while accomplishing the goal of retaining a student. For example, if an institution were to make transferring away easier, students may see this as an incentive to leave, defeating the institution's goal. On the flipside, making barriers worse may convert them into powerful detractors, which could increase the likelihood of students leaving. However, from the perspective of higher education overall, this creates several implications.

Some would argue the purpose of higher education is to cultivate the intellect (Hutchins, 1936), others to equip students with the skills necessary to live together as productive members of society (Dewey, 1936), and yet others would claim higher education should prepare students to be engaged citizens (Banks, 2008; Nussbaum, 1997). None of these definitions regarding the purpose of a postsecondary education

are dependent upon a specific institution. In other words, the purposes of higher education, while debated, are seen as a benefit to society. The benefits should be achievable through attending any institution. As such, institutions should have a genuine desire for their students to learn and then leave the institution to fulfill their purpose. If a student finds the environment at a particular institution unpleasant, they should be able to seamlessly move to another, more conducive, college. Again, if the purpose is to educate the student for the benefit of society, colleges should be working to ensure the benefits to society occur, not fighting over which specific institution is better. In other words, should institutional transfer practices serve students or organizational needs? Much of the institutional research regarding student persistence has focused on the latter.

Another concept uncovered in the qualitative inquiry that deserves mention here is the importance of an expected outcome. Briefly, re-enrolling second-choice students at this institution viewed their expected outcome, primarily a positive employment outlook, as a significant mediator to all persistence factors. When a student was faced with a difficulty that is known to lessen persistence, such as negative peer interactions, they used the belief in the expected outcome as a crutch to move beyond the detracting condition. In other words, unsatisfactory conditions were not that bad when one considered the student's ultimate goal of getting a job and that this institution would help the student achieve that goal. Again, this may be unique or more important to second- or later-choice college students. However, the importance of improving career opportunities for enrolling in higher education is often cited as one of

the primary reasons for enrolling in higher education (Green & Hill, 2003; Schultz & Higbee, 2007; Wilsey, 2013). This was evident in the focus groups, as Bill shared “I came mainly because of the high job placement after graduation.” Debbie also commented that the prospect of a job helped influence her to remain enrolled – “I might be spending more time here because I'm in a pre-program, but once I get in, there's going to be jobs for me.” While many in higher education may view its purpose as loftier than preparing someone for a job, these data show students in this study view job preparation as a major factor driving their attendance and re-enrollment decisions.

An additional area of conversation is the limited support of the co-curricular in these students' re-enrollment decisions. The bulk of student persistence data, and the majority of theoretical frameworks that explain departure, place heavy significance on a student's fit and involvement at an institution (Astin, 1984; Milem & Berger, 1997; Reason, 2009; Tinto, 1993). The qualitative findings showed less than expected support for the co-curricular. In fact, students only mentioned three co-curricular activities as impactful to them – a campus quiz game, a cancer fighting club, and an athletic sport. Each of the students, however, shared that the club or sport was enjoyable, but would not keep them enrolled at the study institution. Melissa commented, “I enjoyed it [Cancer Fighting Club]. I love the mission and everything behind it and the people that run it are great. But if I was torn between colleges, fun wouldn't hold me here.”

There was strong support found within academic major clubs. Nonetheless, students seemed to have perceived the co-curricular experiences as ancillary to their classes, offering little to no advantage to preparing for their career. This is contradictory



to many student affairs offices, who espouse the benefits of educating the “whole student” (Williamson, et al., 1949), as well as national trend data that shows an increase in student’s planned interest in joining a student club (Eagan M. K., et al., 2016). However, it does match recent data at the study institution which showed less than 55% of incoming freshmen planned to join a club, while institutional competitors experienced interest exceeding 75% of their first-year class (internal report, 2016). It appears that student participants at this institution do not see a benefit to their involvement outside of academic major-related organizations or classes.

This is an interesting finding, given its dichotomy with much of the research literature. Engagement in the curricular and co-curricular experiences of the college campus have shown numerous benefits to students. Based on the internal report discussed above, the lack of interest in getting involved in the co-curricular life of the institution is most likely a unique factor present at the study institution. The highly specific majors and job orientation of the study institution may attract a student body more focused on career attainment, with little understanding of the impact of co-curricular involvement on holistic development. As such, additional research at an institution with a more engaged student body may be worthwhile.

Finally, the qualitative data has expanded our understanding of the definition of a first-choice college. In previous research, little time has been spent on what it means to be a first-choice or later-choice institution. As such, it appears researchers and students have assumed that a student’s first-choice college is also their best-choice. Through an investigation of the reasons why students enroll and re-enroll in second- or

later-choice institutions, this assumption has been called into question. It appears that the participants in this study initially chose the best institution for them. It fit the size, educational methods, and outcomes they desired. In addition, re-enrolling students indicated that they were admitted to their first-choice college. Thus, these students had the option of going to their first-choice college, indicated they could afford it, but chose to attend a later-choice. Why? Most cited small class sizes, hands-on education, and a positive job placement for motivating them to enroll. Despite using rational factors to determine the college to attend, most participants chose not to update their choice rank and still indicate they are at a later-choice college.

Rather than believing students “settle” when they attend a less than first-choice college, the reality may be that they have selected the best college for them, in terms of overall fit. However, because the student still views their “dream college” as their first-choice, despite it not being the best academic or personal fit, their best-choice remains a later-choice college. This may mean that the majority of students who indicate they are attending a later-choice college are actually at the one best suited for them.

Looking forward, this finding indicates that the traditional methods of ranking college choices – first, second, etc. may not be ideal. In other words, “first-choice” is an ambiguous term. As has been discussed, the factors that go into making the college choice are complex and unique for each individual student. Perceived prestige, which may be dependent on the success of a football team among other factors, drives the choice-rank for many students, and likely causes issues for students and institutions alike.

For example, a student may choose a large, public flagship university as their first-choice college because they grew up in proximity to the university and are enamored by the success of NCAA division I athletics. As their first-choice college, the student enrolls at a large, public flagship university, despite also knowing the size of the institution, and heavy emphasis on research/theory, will not meet their educational needs. The institution, having determined it is also the student's first-choice, either through an early-admissions process or a question on the application, chooses to spend little resources recruiting the student and helping the student determine if the institution is the right fit. In other words, why spend money on marketing to students likely to attend? Combined, the efforts, or lack thereof, may increase the likelihood of the student not fitting with the institution, and therefore not being successful and departing prematurely. Thus, a better approach to the college choice process may be to move away from a number, or tiered ranking system, and to investigate ways to assess and capture elements of institutional fit. This, in turn, would help the institution and student determine "fit" early on, perhaps heading off issues that could lead to dropout.

While the qualitative study provided several key findings, additional conversation regarding the quantitative findings (Study B) is also warranted. No statistically significant differences were discovered in this dissertation. However, lack of statistical significance is not the same as a lack of practical importance (Nickerson, 2000). In other words, the findings from Study B are beneficial because they add to a very limited research base surrounding students who attend a second- or later-choice college. During the literature review, only a handful of studies were discovered that

focused on students who do not enroll at a first-choice institution, despite the fact that almost 50% of students are doing so (Eagan, Lozano, Hurtado, & Case, 2013). Only one study, that of Yan (2002), found evidence of an actual connection between student departure and college choice ranking. The others provide confirmation that the college choice rank is at least connected to the intent to leave the institution, a factor previously found to be one of the strongest predictors of actual persistence (Bean, 2005; Tinto, 1993).

Research questions two and four determined that students at a second- or later-choice college were retained at a slightly higher rate than those at their first-choice college, both from fall-to-fall and fall-to-spring. However, the differences were not significant, indicating that this variation could be a result of chance. These findings are the opposite of those of Yan (2002), who determined that students who drop out of college are more likely to attend a later-choice institution, and those of Villeda and Hu (1990) who determined the lower a student ranked an institution, the less likely they were to express an intent to re-enroll. While the findings in this study were not statistically significant, the fact that they contrasted with the previous limited research available on this topic raises numerous questions about the act of attending a second- or later-choice college. Were the results in Study B attributable only to chance, or do the results indicate additional factors at play in regard to the re-enrollment decisions and views of students in this study compared to the earlier studies? Suffice it to say, rather than providing concrete answers, this dissertation adds additional questions worthy of consideration in regard to enrollment in second-choice or later-choice institutions. Such

potential future research questions will be addressed in greater detail in the implications for research section of this chapter.

Findings from Study B indicated that there were no statistical differences in GPA between students at a first-choice and students at a second- or later-choice college. These findings contradict those of Kim (as cited in Kim, 2004), who found students at a first-choice college had higher grades than those at a later-choice institution. Again, a copy of these findings was not available, despite repeated attempts by an Academic Library and personal outreaches to the study author. Nonetheless, the findings from the current study represent only the second known examination of published academic differences between these two subpopulations of students.

Several logistic regressions were fit to determine if there was a difference in predictors of re-enrollment for students at a first-choice college versus those at a second- or later-choice institution. The models overwhelmingly indicated that college choice was not a significant predictor of persistence into the second year. However, the final model did confirm that for students at a technical college, first year cumulative GPA (CUM\_GPA), the amount of time students spent studying or doing homework each week during their final year of high school (HMWK), and the importance of the study site's academic reputation in the initial enrollment decision (REPUTATION) were significant predictors of re-enrollment. The effects of cumulative college GPA are rather straightforward, the higher it is, the more likely a student is to persist. This confirms other studies, which indicated a positive association between GPA and persistence (Bean & Metzner, 1985; Reason, 2009). Additionally, the qualitative portion (Study A)

revealed little about grade point averages as a reason to persist. However, much discussion occurred over the difficulties in gaining admission to the competitive health care majors, which was driven by academic achievement. Students cited lack of admission as a reason to depart; however, lack of admission was generally a result of insufficient academic progress, or lesser progress than one's competitors. In other words, the qualitative data show indirect support for academic achievement as a predictor of persistence. However, caution should be used when interpreting this result as the logistic models were heavily influenced by the much larger contingent of students at their first-choice college in the sample.

The amount of time students spent studying or doing homework each week during their final year of high school (HMWK) is a more complicated predictor of re-enrollment. The findings indicate that HMWK had a negative relationship with retention. This means that increasing hours spent studying are associated with decreased retention. Specifically, for each one-unit increase in time spent studying, a student was .761 times less likely to be retained. Put differently, students who studied or took many hours to do homework during their final year of high school were less likely to be retained in this model. This is contrary to the findings discussed in the literature review. Numerous studies found increased engagement with academics was positively related to persistence (Bean & Metzner, 1985; Pascarella & Terenzini, 2005; Reason, 2009; Strayhorn, 2006).

There may be several explanations for this finding. First, students who spent large numbers of hours each week in high school on studying or homework may have

entered college unprepared. The large amounts of time they spent on homework each week may have been necessary to learn the assigned content. In other words, these students may have struggled academically. When students lack foundational skills, many colleges and universities assign special courses meant to bolster a student's knowledge in reading, writing, or mathematics (Attewell, Lavin, Domina, & Levey, 2006). This is commonly known as remediation, and approximately 40% of undergraduate students enter college requiring it in at least one subject area (Attewell, Lavin, Domina, & Levey, 2006). According to an internal report, the same holds true at the study site, as 39% of students required remediation in at least one subject area during academic year 2006/2007 (internal report, 2008). If a student entered the institution not ready for college-level work, they would have a difficult time keeping up with their coursework and succeeding academically. Upon experiencing these struggles, the students may have selected to depart the institution. This explanation concurs with that of Martorell and McFarlin (2011) who found a small negative effect for students who enrolled in remedial courses. In other words, underprepared students were less likely to complete at least one year of college. However, other studies have shown no negative effects on persistence based on assignment to remedial courses (Attewell, Lavin, Domina, & Levey, 2006; Bettinger & Long, 2009; Scott-Clayton, 2015).

Another possible explanation for the negative HMWK predictor is excessive academic workload. Academic workload possesses several definitions, but in general it refers to the amount of time and effort a student needs to complete their program of study. It includes numerous factors, such as the quantity and difficulty of work assigned,

timing of assignment due dates, and student characteristics, such as ability (Bowyer, 2012). Spending large amounts of time each week on homework and studying may be a good indicator of excessive academic workload. When excessive workload occurs, students experience stress and often resort to surface learning rather than deep learning (Bowyer, 2012). In other words, students have been assigned so much material to learn that it is impossible for them to do so. Therefore, they resort to memorizing quick facts rather than learning the necessary principles and foundational material. In doing so, these students are ill-prepared for assessments and higher level courses, as they only gained a superficial foundation. Bowyer contends that this often leads to students prolonging their education due to failing or repeating classes, which in turn leads to poor retention (2012).

The HMWK predictor measured the number of hours students spent studying or doing homework each week during their final year of high school. It did not measure the amount of effort students put into studying or homework during their first year of college, but it is likely a good proxy. In other words, if students studied a lot in high school, they would likely continue that trend when they enroll in college. This is certainly an assumption, but it is plausible. If it holds true, it may represent a subset of students who were academically unprepared to enter college. However, to confirm that, a comparison of HMWK and individual grade point averages was necessary. A review of time spent studying and cumulative GPA showed that GPA decreased as time spent studying increased above 15 hours per week. In other words, students who studied more than 15 hours per week had lower GPAs, which may indicate these students were



not effective in their studying habits. However, this only accounts for a handful of students.

A final explanation for the finding that increased studying habits in high school had a negative effect on retention lies with the fact that the majority of students were first-generation. Approximately 65% of Study B participants indicated their parents had not completed a college degree, making them first-generation students. While similarities exist between students' whose parents attended college and those who did not, there are also many differences. For instance, first-generation students are more likely to believe they need to log more hours studying than other students, yet they are also retained at a lower rate (Ward, Siegel, & Vavenport, 2012). In addition, first-generation students often lack the cultural capital to fit into a higher social strata, often experienced on the college campus (Ward, Siegel, & Vavenport, 2012). In other words, first-generation students grow up lacking exposure to experiences, attitudes, and language that would enable them to succeed in the college environment. As such, first-generation students often struggle in college, unsure of what they need to do to be successful in the college classroom (Ward, Siegel, & Vavenport, 2012). In relation to this study, students may have spent an exorbitant amount of time studying, but failed to make the other social connections with faculty and students that would have enabled them to succeed. As such, they became isolated, unsure of their future direction, and made the decision to depart the institution.

REPUTATION was also a significant predictor of re-enrollment for a second year of study. REPUTATION represents a student's belief that the institution having a good

academic reputation was a reason for them to initially enroll. REPUTATION had a positive relationship with retention, indicating increasing perceptions of academic reputation were associated with increased retention. Specifically, for every one-unit increase in the importance of the academic reputation as a reason to enroll, a student was 1.466 times more likely to be retained. These findings indicate that students who strongly believed the study institution had a strong academic reputation were more likely to be retained. This finding is in line with previous research. In this study, REPUTATION serves as a proxy for quality. If a student believes the college has a good academic reputation, they likely also believe it is a high quality institution. According to Reason (2009), students at higher quality institutions are more likely to be retained.

One possible explanation for this finding is the importance of an expected outcome that was discovered in the qualitative analysis, Study A. The focus groups found that a positive job outlook, which was driven by institutional reputation, served as a significant mediator for re-enrollment. In other words, students in the focus groups cited their belief of getting a job after graduation as a significant factor in their re-enrollment decision. This belief came from an understanding that a degree from this institution was seen as highly reputable in the job market and that employers sought students from this specific institution. Strictly speaking, the belief that an individual student will get a job, and that an institution is reputable, are two different concepts. However, they are likely linked. In addition, focus group responses were concentrated around the institution's reputation and ability to provide foundational knowledge as drivers of successful employment.

Further expansion of the term reputation may elucidate these findings further. The CIRP – The Freshman Survey construct of REPUTATION assessed the student's belief regarding the academic reputation of the institution in making their enrollment decision. It is likely similar to the prestige ranking, discussed by scholars investigating college choice. Prestige is a relatively fluid concept, as each student will value campus factors in a different way. There are numerous factors, such as the social atmosphere, athletic prowess, media rankings, housing accommodations, and average SAT scores that students consider when developing their personal prestige rankings (Kealy & Rockel, 1987; Long, 2004; Schoenherr, 2009; Tierney, 1983; Weiler, 1996). It is also probable that students consider the likelihood of achieving an expected outcome as a factor in their prestige, or reputation, ranking. Thus, while the CIRP construct refers to academics, it is probable students included many other factors when marking their response – including reputation as perceived by others.

Essentially, focus group participants believed that industry peers and employers viewed the reputation of the institution as exceedingly positive, implying a degree from the institution was highly desirable. This sentiment was shared by individual practitioners:

I talked to my [medical technician] back home, and she was like, "Oh, yeah, I really wish I went to that school, but when I was younger, it wasn't finished," like the program yet, so she couldn't go. This school looks really good for [health care]. (Debbie)

Yeah, I'm pretty confident in this being the right decision. Last summer, I walked into a company. I didn't even call them or anything, didn't email, walked in and said, "You guys hiring for the summer?" I told them I went to [study institution] and they were like, "Oh, all right. Well, you want an interview?" I was like, "Yeah." I walked in on a Friday, I started working that Monday just from saying

that I went to [study institution], and I was in this program, so it carries a lot of weight. (Bill)

By employers:

All the techs there, 95% of them are graduates from [study site]. And if somebody comes in that didn't graduate from here, you can tell right away. So I think seeing techs have graduated from here and they're-- I know which ones really know the stuff. I should be learning with these people. I know that I'm going to be fine once I get my degree. (Beth)

It had a good placement rate. And going to the previous job fairs, a lot of places said, they would only hire people out of here if they're going to hire people right out of school. One company I interviewed with is actually setting up a program from their company to have kids trained here, so they must like what they see. (Jeff)

And by the general public

I've always heard good things about it and-- I don't know. I've just never heard anything bad come from [study site]. (Melissa)

Thus, focus group students saw positive outcomes based on a perceived reputation of the institution during their enrollment. It is also possible that Study B participants perceived similar reputation building constructs before and during their enrollment, which may help explain the positive association between REPUTATION and persistence.

Given the fact that the qualitative and quantitative analyses used two different datasets, and that the quantitative results were driven largely by first-choice students, they should be linked sparingly. Nonetheless, congruencies between Study A and Study B were identified. Combined, the findings from Study A and Study B provide additional insights to the body of literature surrounding student persistence and the effects of

attending a second- or later-choice institution. In addition, this dissertation generated several implications for various constituency groups, which will be discussed shortly.

### **Limitations**

As with any study, this dissertation contains several limitations that should be considered when interpreting the results and generalizing the findings. First, both studies were conducted at one institution. The study site, an open-admission, technical college, may attract a unique subpopulation of students. As such, the ability to generalize these findings to other institutions, such as a large research university, or similar groups of second- or later-choice students is limited. However, the predictors identified do have commonality with other studies. In addition, the study population is one that has not been emphasized in the past. Thus, while the ability to generalize these findings is limited, they do lend support to additional research on the subject of second- or later-choice college enrollments.

Another limitation is the small sample size used for Study A, the qualitative portion of the dissertation. In phenomenological research, data saturation can generally occur with as few as six participants, while grounded theory researchers often suggest a minimum of 20 participants (Creswell, 2013). This study was only able to recruit 10 students across two different focus groups. While numerous attempts were made to grow the sample size, participants seemed unwilling to heed personal or financial pleas for assistance. Future studies with a more robust sample size may yield improved data that could better inform the reasons students chose to re-enroll at a second- or later-choice college.

A third limitation is the number of incomplete records that were contained in the quantitative dataset used for Study B. This led to a reduction in the number of cases that could be analyzed. A thorough comparison of the complete records versus the missing records revealed two similar groups, allowing the study to proceed. However, one might question the impact an additional 700 student responses would have made to the study and its results. Additionally, the sample consisted largely of students who were at their first-choice institution. Due to this, the logistic regression models were primarily driven by these first-choice students, limiting the ability to answer the original research question five.

Along with the small qualitative sample, the focus groups only included students who re-enrolled at their second- or later-choice college. As such, the stories of students who departed their later-choice institution are absent. In other words, the reasons second- or later-choice students did not return are missing from these data. Their reasoning for leaving could be very different from the students who chose to re-enroll. Therefore, the findings from this study should be interpreted with caution if one is attempting to generalize them to the entire population of students who enroll at a second- or later-choice college. Further studies should attempt to include this population.

A final limitation to this study involves the definition of a second- or later-choice college itself. While the term seems self-explanatory, the study revealed that students interpreted it in differing ways and it may be dependent on when the question is asked. The quantitative data, for example, asked if the study institution was a student's first,

second, etc. choice. This assessment was given in first-year courses during the first three weeks of the fall 2006 semester (internal report, 2007). Hence, students were already enrolled at the institution when they indicated their choice rank. The qualitative data, on the other hand, used data from the admissions application regarding the student's choice. The application could have been completed at various points in time, before and after visiting campus or learning more information. As such, three students indicated that the study site was not their first-choice on the application, but said it was during the focus group. These students' responses were kept in the data, as they met the requirements for inclusion in the study. At some point, these students believed this institution was not their first choice. In addition, given responses during the focus group, there is a genuine concern that groupthink motivated students to answer the question negatively. Nonetheless, this shows the flexible nature of a student's choice set and indicates a need for future research to capture this variable at the same point in time.

### **Implications for Research and Theory**

This study added to a research base that is currently insufficient. That may be due to a belief within the research community that this is not a subject of theoretical significance. However, with the continued rise in the number of students who are enrolling at later-choice institutions, this is a concept of student persistence that is just now beginning to make an impact on higher education. As such, this study helps provide an additional warrant of the need for research surrounding this subject. Moreover, many of the findings in this dissertation may be dependent on the unique study

institution. Future research should use larger and more generalizable datasets to re-examine college choice as a factor in student persistence and academic performance.

Despite not finding statistically significant differences in retention between students at a first-choice institution and a second- or later-choice institution, this study did find that second- or later-choice students were retained at a slightly higher rate at this institution. Specifically, second- or later-choice students were *more* likely to be retained and *less* likely to transfer or stopout during their first year; however, the findings were not statistically significant, indicating the results could be from chance. In addition, the study was conducted at one, unique institution. The institution's focus on technical programs and job preparation likely draws a cohort of students with clearly defined career ambitions. Additional research using a more comprehensive dataset that cuts across institutional types is needed to determine if these differences are truly by chance, or if the college rank does play a role in student's decision to re-enroll at an institution of higher education.

As mentioned previously, this study found that the definition of a first-choice institution was fluid for students. It likely changed over time, as students learned more about an institution by reading the website or attending an open house. In addition, it changed for students as they learned more about the college experience. Anna, for example, commented that her first-choice institution was a large, public flagship university; but, when she toured she learned that she would likely take classes in 300-seat auditoriums. This was one factor that convinced her to enroll in a later-choice college. However, how can an institution that was the antithesis of what the student



deemed necessary for their success (small class sizes) be their true first-choice? As discussed previously, it may be that students are not differentiating between a best fit and first-choice institution. Future research should be directed at determining a common understanding and definition of what it means to be a first-choice college, when that should be measured, and if a first-choice is truly synonymous with best-fit.

This dissertation developed a tentative Framework for Re-Enrollment at a Second- or Later-Choice College (see Figure 2). Previously, there had been no common understanding of the factors that influence students to re-enroll at a second- or later-choice college. As such, this framework may provide an additional theoretical lens from which to examine the concept of student persistence. As an initial framework, it has not been tested to see if it is generalizable to other campuses. As such, additional research should examine this framework in other contexts – differing types of institutions, including various sizes and institutional types, to see if there really is a unique way in which second- or later-choice students make re-enrollment decisions.

A final area worthy of additional research consideration are the two additional constructs discovered in the qualitative portion of the dissertation. Specifically, the concept of barriers to leaving should be examined to see if this is a new construct that could impact the re-enrollment decisions of second- or later-choice students, as well as first-choice students. In addition, trends in student values continue to show 'being well off financially' as a significant goal (Pryor, Hurtado, Saenz, Santos, & Korn, 2007). Due to this, and the strong impact it had on participants' re-enrollment decisions, the expected outcomes construct is worthy of additional investigation. Specifically, is the prospect of

a desirable outcome (i.e., a job) strong enough to influence students to re-enroll at a non-ideal institution?

### **Implications for Practice**

The findings from this dissertation present several implications for practice. First, practitioners should now realize that students at a second- or later-choice college have a desire to continue their enrollment. The institution, therefore, is not one of last resort, but one of opportunity for students. Practitioners should not count this population of students out, but rather, ensure that solid retention practices are in place across campus.

Focus group participants showed little support for engagement in co-curricular activities. However, much of the research surrounding student engagement show numerous benefits to student involvement. For example, student engagement in educationally purposeful activities has been found to have a positive effect on persistence and GPA (Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008); increases in self-reported cognitive and affective skills (Astin, 1993); greater satisfaction with the institution, increased degree attainment, and increased appreciation of other cultures (Pascarella & Terenzini, 2005). In addition, engagement can help lower-ability students overcome academic deficits while in college (Pascarella & Terenzini, 2005). In short, getting involved in the life of the campus has many advantages for students. As such, practitioners should work to generate student interest in educationally purposeful activities. Specifically, major related clubs were found to be extremely powerful to students in the focus groups.

In addition, the prospect of a good job following graduation was seen by students as a significant mediator to their re-enrollment decision. Despite continued debates regarding the purpose of a higher education, students saw career preparation as vital. Practitioners should, therefore, attempt to integrate career preparation into retention and academic engagement activities. Simple strategies could involve creating and supporting major specific clubs, with access to career mentors and tutoring services. Institutions may also wish to publish concrete data regarding employer reputations about the school, program, and graduate successes. Students who view their institution as supporting their ultimate goal of attaining a job may be more likely to be retained so that he or she can reap those benefits.

Student participants also shared that certain barriers to their leaving – loss of credits and increased costs – influenced their re-enrollment. Participants saw staying as the quickest and cheapest option to earning their degree. While higher education has attempted to make transfer easier for students, many institutions still view the process from their own needs, rather than the students'. In other words, difficult transfer policies make it harder for students to leave, influencing students to remain at the institution. Students stay because they have no other place to go, not because they are happy with their education. This is important for institutions to realize because it indicates positive retention numbers are not the same as satisfied students. To counteract this trend, institutions should look to simplify the transfer in and out process for students. This would not only make it easier for students to attend an institution that

truly meets their needs, but also exemplifies a greater purpose of higher education – to create engaged citizens (Banks, 2008; Nussbaum, 1997).

This study also found that negative interactions with faculty were more likely to be shared and that they led to more negative feelings about the institution as a whole. Positive interactions, on the other hand, were more focused on the individual parties involved, and were generally kept private. In other words, unsatisfied students were vocal about their issues and saw the institution at fault. Satisfied students saw faculty personally responsible for their success, but rarely shared those thoughts. For practitioners, these findings may indicate that vocal students actually have small complaints that can be remedied. Institutions may wish to have conversations with students about their complaints, and more importantly, who influenced them, to better understand factors that may be pushing students away from the institution.

Finally, the study institution itself can make changes to benefit students. Additional attention should be paid towards communicating and explaining the competitive admissions programs. Students found the current information to be confusing. In addition, the qualitative data show students felt blindsided by the reality of the difficulties surrounding entering the major. While this was communicated through the lens of second- or later-choice students, it is likely applicable to first-choice students as well.

### **Implications for Policy**

The findings from this dissertation also present implications for policy makers. As has been the case for the past several years, policies meant to keep college affordable

remain a top priority for lawmakers (Harnisch & Lebioda, 2016). Despite this, higher education faces stiff competition for funding. To level the playing field, legislatures have focused greater attention on institutional outcomes, chiefly graduation rates and degree production, as well as initiated performance-based funding tied to those outcomes (Harnisch & Lebioda, 2016). In other words, institutions with higher graduation rates and better overall degree production are seen as exemplary and deserving of increased funding. The findings from this study should make policymakers question these assumptions.

To be more specific, this study found that some students who re-enrolled at their later-choice college did so because it was the least costly option. In other words, the student may have not been content or felt trapped in a major that was not ideal, but their credits could not be used at another institution. One possibility for this lack of transfer ability could be the focus on graduation rates and degree production seen in the legislature. In other words, enabling a student to transfer to a better fit institution lowers a college's graduation rate. Since funding is increasingly tied to graduation rates, colleges lose out on public funding when students transfer away, and therefore may enact policies making it difficult to leave. Policymakers should consider adopting policies that link funding not to degree production, but to service to society. For example, funding could be tied to the percentage of graduates who take jobs in the public sector. Doing so would require policymakers to recognize the public good of higher education, as opposed to the more recent view of postsecondary education as a private good. With a lowered link to graduation rates, colleges and universities may be more inclined to

create transfer pathways that would enable students to enroll at institutions they believe are a better fit for their needs and career goals.

Another policy implication lies with the number of colleges students seek admission. As discussed throughout this study, more students are attending later-choice institutions, as well as applying to more colleges and universities (Eagan K. , et al., 2015). Due to the increasing number of applications, students may be faced with larger choice sets. In other words, rather than choosing between one or two colleges, some may have five or more options. Research by economists and psychologists has found that while people like choices, too many may lead to adverse experiences, such as feelings of regret or the inability to make a decision at all (Iyengar & Kamenica, 2010; Reed, Reed, Chok, & Brozyna, 2011). This is likely a result of a limited capacity for efficiently comparing options, generally believed to hover around five (Margalit, 2014). As such, research has shown that humans tend to make better decisions when options are kept fewer and simpler.

Policymakers may want to initiate a mechanism that prohibits students from applying to more than five different colleges or universities, while emphasizing elements that predict student/institution fit. Lowering the number of schools where students can automatically send their Free Application for Student Aid (FAFSA) results from ten to five will likely lower the student's choice set. In turn, students may be better able to investigate the differences between their desired institutions and make a more informed choice. This could have the effect of re-aligning the choice set into a more meaningful assessment. In other words, it may remove idolized institutions that

students understand won't be their best fit from the choice process at an early stage. This action would have two outcomes. First, as mentioned, it would allow for more meaningful analysis by the student when making a final enrollment decision. Second, by removing "first choice" institutions that aren't really in consideration, it may create a choice set that is a better indicator of student/institution fit.

### **Conclusion**

This dissertation investigated the relationships between college choice and student persistence, as well as academic achievement. Findings indicate that there are no statistical differences in the retention rates and grade point averages of students at a first-choice or second- or later-choice institution. College choice was not found to be a significant predictor of re-enrollment. The qualitative analysis, which investigated actual reasons for re-enrolling, discovered that students at this second- or later-choice institution were highly motivated by the prospect of getting a job after graduation and by the concerns that departing the institution would be more detrimental than just finishing. In addition, the current definition of a "first-choice" institution was found to be fluid and not an ideal indicator of student satisfaction. Combined, this study adds to the miniscule research body surrounding college choice rank and its impact on student persistence and performance, raising more questions than it answered.

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## APPENDIX A

## Recruitment Letter

Hi STUDENT,

You have been selected to participate in a research study being conducted by Brad Webb, a Ph.D. student at the Pennsylvania State University. The study is investigating the reasons why you chose to attend STUDY SITE, the activities you participate in, and what led you to re-enroll for a second year of study.

The findings from this study may assist colleges and universities in developing activities that could help retain students for a second year of study. The study will consist of 6-8 students participating in a focus group on the STUDY SITE Campus. The focus group is a short (approximately 60 minute) session where a moderator (Brad Webb) asks questions of the group. Students who volunteer and participate in the focus group will receive a \$20 Sheetz gift card for taking part in the study. In addition, pizza and soda will be available during the focus group.

If you are willing to volunteer your time to help with this research, please inform Brad Webb of your Focus Group Preference by DATE. You can do so via e-mail (bwebb@SITE.edu) or circle your choice below and drop this card in campus mail.

Thanks in advance for your consideration!

Brad Webb



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Yes, I'm willing to participate in the research study. I will attend the focus group I circled below:

Group A – DATE/TIME/LOCATION

Group B – DATE/TIME/LOCATION

Name: \_\_\_\_\_ STUDENT

## APPENDIX B

## Informed Consent (Anonymized)

**CONSENT FOR RESEARCH**

The Pennsylvania State University

Title of Project: *Matriculation and Retention of Students at a College of Technology*Principal Investigator: *Bradley M. Webb*Address: *Study site mailing address*Telephone Number: *Study site phone number*Advisor: *Dr. Neal Hutchens*Advisor Telephone Number: *814-865-7984*

Subject's Printed Name: \_\_\_\_\_

**We are asking you to be in a research study. This form gives you information about the research.**

**Whether or not you take part is up to you. You can choose not to take part. You can agree to take part and later change your mind. Your decision will not be held against you.**

**Please ask questions about anything that is unclear to you and take your time to make your choice.**

**1. Why is this research study being done?**

We are asking you to be in this research study because you returned to this college for a second year of study. This research is being done to find out why students initially decide to enroll at a particular college/university and why they ultimately decide to leave or return for a second year of study. Approximately 20 people will take part in this research study at *Study Site*.

**2. What will happen in this research study?**

In this study, you will participate in a focus group with 6-8 other students. The moderator will ask questions of the group members about their experiences choosing, enrolling, and returning to the college. Students will be encouraged to share freely from their own experiences and to respect the opinions of others. You will not be required to answer any questions and may choose to sit silently throughout the entire session. The session will be audio-recorded and later transcribed. There will also be a note taker taking notes during the session to help ensure what you discuss is accurately recorded. Following the focus group, you may be contacted for an individual appointment to clarify a response or to expand upon an answer you provided.

**3. What are the risks and possible discomforts from being in this research study?**

The only foreseeable risks are minimal. There may be emotional discomfort when students discuss reasons for attending one college over another. There is a risk of loss of confidentiality if your information or your identity is obtained by someone other than the investigators, but precautions will be taken to prevent this from happening. The confidentiality of your electronic data created by you or by the researchers will be maintained to the degree permitted by the technology used. In addition, other focus group participants may share what you discuss during the session outside the group. A discussion will occur during the focus group reminding participants of the importance of maintaining the confidentiality of what's discussed, but absolute confidentiality cannot be guaranteed.

**4. What are the possible benefits from being in this research study?**

Findings from this study may be beneficial to institutions of higher education in several ways. Identifying an additional predictor of student retention, as this study will investigate, would enable colleges and universities to identify and intervene with students at risk for early departure. In addition, institutions can use this study's findings to better target academic and social support services. You personally may enjoy or receive satisfaction about sharing your college experiences.

**5. What other options are available instead of being in this research study?**

You may decide not to participate in this research.

**6. How long will you take part in this research study?**

If you agree to take part, it will take you about 60-75 minutes to complete this research study. You may be asked to participate in a follow-up interview to clarify responses. The follow-up should last no more than 30 minutes.

**7. How will your privacy and confidentiality be protected if you decide to take part in this research study?**

Efforts will be made to limit the use and sharing of your personal research information to people who have a need to review this information. You will be assigned a pseudonym on all documents created as a result of this study.

A list that matches your name with your pseudonym will be kept in a password protected file on Bradley Webb's *Study Site 'H'* drive and/or in a locked file cabinet in *Researcher Office*.

In the event of any publication or presentation resulting from the research, no personally identifiable information will be shared.

We will do our best to keep your participation in this research study confidential to the extent permitted by law. However, it is possible that other people may find out about your

participation in this research study. For example, the following people/groups may check and copy records about this research.

- The Office for Human Research Protections in the U. S. Department of Health and Human Services
- The Penn State Institutional Review Board (a committee that reviews and approves research studies) and
- The Office for Research Protections at Penn State.

Some of these records could contain information that personally identifies you. Reasonable efforts will be made to keep the personal information in your research record private. However, absolute confidentiality cannot be guaranteed.

**8. Will you be paid or receive credit to take part in this research study?**

Participants will receive a \$20 Sheetz gift card within four weeks of taking part in a focus group.

**9. Who is paying for this research study?**

The principal investigator, Bradley Webb, is self-funding this study.

**10. What are your rights if you take part in this research study?**

Taking part in this research study is voluntary.

- You do not have to be in this research.
- If you choose to be in this research, you have the right to stop at any time.
- If you decide not to be in this research or if you decide to stop at a later date, there will be no penalty or loss of benefits to which you are entitled.

**11. If you have questions or concerns about this research study, whom should you call?**

Please call the head of the research study (principal investigator), Bradley Webb at 570-320-4437 if you:

- Have questions, complaints or concerns about the research.
- Believe you may have been harmed by being in the research study.

You may also contact the Office for Research Protections at (814) 865-1775, [ORProtections@psu.edu](mailto:ORProtections@psu.edu) if you:

- Have questions regarding your rights as a person in a research study.
- Have concerns or general questions about the research.
- You may also call this number if you cannot reach the research team or wish to offer input or to talk to someone else about any concerns related to the research.





## APPENDIX C

## Interview Protocol for Student Focus Groups

**Welcome:** Welcome and thanks for joining me this evening. My name is Brad Webb I'm an Assistant Dean here at the college. However, tonight I'm stepping out of that role and am here in my role as a Ph.D. student at Penn State.

**Our Topic is:** We're here because I'm conducting research on the reasons why students initially come to this college and why they return for a second year. The findings will be used for my doctoral dissertation, which concerns finding characteristics that predict why a student would leave, or remain, at a particular college for a second year. You were selected because you have returned to this college after your first year of study.

**Guidelines: Before we start, I'd like to suggest a few tips that will make our discussion more productive.** First, there are no right or wrong answers tonight, only differing opinions. Please feel free to share your thoughts, whether they differ or are the same as others. Everyone views the world differently and I'd like to capture as much as I can about your personal experience; just please respect the fact that you won't always agree with one another. My role as the moderator is to help guide the discussion. Katie Mackey is also here to help me take notes to remember your responses. It is unlikely that she will assist with the facilitation of this group. This is a discussion with one another, so please ask questions and talk to one another as opposed to directing all your answers at me. I will be tape recording the session to aid in my documentation of the findings. Because of this, please try to allow one person to speak at a time and be sure to speak up. In addition, please use first names only. I will not use your full names in my paper, and

using only first names helps maintain your confidentiality. I'd also ask that you keep what's discussed in this room confidential, which protects everyone's privacy. If you haven't done so already, please turn off your cell phones to limit distractions.

**Opening Question:** Now that we have all the formalities out of the way, I'll begin by turning on the recorder(s). This student focus group is being conducted by Brad Webb on DATE. This is focus group A/B. Start Time: TIME.

Let's start by learning a bit about each other by going around the table.

1. Please tell me your name, your major, and if you are living on-campus, in an off-campus apartment, or commuting from home.
2. Now that we know a bit about each other, I'd like you to think back to when you decided to attend this college. What made you decide to attend this institution? Was this your first choice?
  - a. Possible follow-ups: how far down was this institution on your list of possibilities?
3. What other colleges did you consider attending, and why did you not attend there instead of this institution?
4. What things most made you decide to return for a second year?
5. Are your future plans to complete a degree here, or to transfer?
  - a. Possible follow-ups: Why? Were these your original plans, or have they changed? Why?
6. What kinds of activities have you enjoyed the most about attending here? Has it been the classes or student events?

- a. Possible follow-ups: Probe about events and why important
  - b. Possible follow-ups: How important have these activities been to your decision to remain enrolled here or your decision to earn a degree here?
7. Think back to when you were making your final choice of a college. What influenced you to attend a college that you hadn't ranked the highest?
8. Tell me about your initial plan after enrolling at this college.
  - a. Possible probes: Complete a degree? Transfer?
9. Are you glad you made the decision to enroll here over another institution?
  - a. Possible follow-ups: If you were to go through the whole process of choosing a college again, what would you do?
  - b. Possible follow-ups: Would this institution be ranked the same? Higher or lower?
10. As I mentioned in the beginning, the purpose of my research is to determine why students choose to enroll and to return to this institution. Is there anything I left out regarding your personal journey?

Thank you for taking the time to participate in this discussion.

END TIME

## APPENDIX D

## Sample Memo

**3/28 Coding Review****Activities:**

- student ambassador and RA Job - two of the leading positions on campus.
- involvement in the clinical phase of program
- just go to class\*\*
- Quizzo
- major related clubs
- program cohorts\*\* //faculty assistance
- baseball
- meet new people
- Thon (but fun won't hold me here)

\*\*indicates major importance

Overall, it seems that the expectation to go to class, complete a degree, etc. seems to be a major motivator for continued enrollment. Program cohorts seem to be 2nd top memory. They enjoy the camaraderie of their fellow students and faculty. I would suspect this is a different (less social) relationship than a traditional social club. Again, this echoes back to a focus on degree completion and employment. A bit surprising, given the 2nd choice students from CIRP were more interested in the social aspects of a college career.

**Benefits of attendance:**

- job prospects\*
- respect within the career (radiography, HVAC, EL, dental) \* (goes with above)
- personal interaction with professors
- camaraderie within major\*
- hands on training\*
- small classes

Overall, it seems the fact that the programs lead directly into jobs was a major benefit of a [study institution] education. I would surmise that this was a motivator for enrollment for some, and to remain enrolled for others. [Basically, if I stick it out, I am pretty much guaranteed a job.] Another major factor for re-enrolling seems to be the personal interactions between faculty and student cohorts. There are numerous mentions of staff going out of their way to support students and fellow students offering advice. In addition, subjects liked that they had someone else who could relate to exactly what they were feeling. This is more of a re-enroll motivator.

## APPENDIX E

### Coding Example

The screenshot displays a software interface for audio analysis and coding. At the top, there is a menu bar with options: FILE, HOME, CREATE, DATA, ANALYZE, QUERY, EXPLORE, LAYOUT, VIEW, and MEDIA. Below the menu is a waveform visualization of an audio recording, with a time axis from 0:00 to 1:00:00. Underneath the waveform is a 'Coding Density' visualization, which shows colored bars representing different codes applied to the audio segments. The main part of the interface is a table with the following columns: Timespan, Content, and Speaker. The table contains 8 rows of data, each representing a coded segment of the audio. To the right of the table, there are vertical bars representing the coding density for different codes: Choice (purple), Re-enroll (orange), S3 (green), Reasons to Enroll (red), S4 (blue), Intervening Condition (yellow), and Benefits of Attendance (brown). At the bottom of the interface, there is a search bar with the text 'Enter node name (CTRL+Q)' and a status bar showing 'Nodes: 37 References: 1220 Editable Unfiltered 0:00.0/1:04:57.6'.

	Timespan	Content	Speaker
31	6:24.0 - 7:21.0	I guess, kind of like the class sizes. My first choice was actually Penn State. My mom worked there so I was there all the time, and I saw her smaller classrooms and her building that she works in. And then she took me over to one of the buildings where the gen eds are, and it was this huge auditorium, like 300, 400 students. And I was telling to myself, "Oh, my goodness. How am I ever going to be able to learn anything in there?" And then when I came here and saw like the smaller class sizes, I was like, "Okay. Maybe this is more something for me." And it's not too far away from home, and then with the class sizes, I'm not the kind of person who learns well in very large groups.	S4
32	7:21.0 - 7:32.0	I think it was more of the hands-on side, because I was going to go to Drexel for engineering, but I don't think it was really for me, so hands-on was what got me.	S6
33	7:32.0 - 7:39.0	Yeah, I like that part too, about things like that.	S5
34	7:39.0 - 8:03.0	I party too much, honestly [crosstalk]. I had to take a year off. This is 45 minutes away from home for me, so to grow up a little bit and actually take college seriously, it just worked out, perfect. But I got accepted into Penn State and I withdrew a week before I was supposed to move in, because I was like, "I'm not going to take this seriously."	S7
35	8:03.0 - 8:12.0	That's actually another reason why I came here, too [laughter].	S5
36	8:12.0 - 8:20.0	All right, so then what things made you decide that you wanted to come back to Penn College for a second year?	S1
37	8:20.0 - 8:59.0	I applied to be an RA, so when I got that, it was definitely a money situation for me. I was like, "Oh, I'm being helped financially from the school so that's going to make me come back." But another thing was, I've talked to so many girls in the programs that I'm going for and they really liked it. I think you do benefit from the smaller classes and stuff, too. And if you know anything about how easy it is for us to get jobs after because our school helps us out so much, it's definitely reassuring that, okay, I might be spending more time here because I'm in a pre-program, but once I get in, there's going to be jobs for me.	S3
38	8:59.0 - 9:13.0	I don't really know. I don't know what I'm going to do-- what I would've done with myself if I didn't come back. Plus, I came this far so I might as well keep going [laughter]. Once I stop, I won't come back.	S6

## APPENDIX F

## Variable Descriptions

Variable	Variable Description	Variable Scale
<b>Demographics</b>		
RACE	Student's race	1 = American Indian/Alaska Native 2 = Asian American/Asian 3 = African American/Black 4 = Mexican American/ Chicano 5 = Other 6 = Other Latino 7 = Puerto Rican 8 = White/Caucasian
GENDER	Student's gender	1 = male; 2 = female
AGE	Student's age.	1 = 16 or younger 2 = 17 years old 3 = 18 years old 4 = 19 years old 5 = 20 years old 6 = 21 to 24 years old 7 = 25 to 29 years old 8 = 30 to 39 years old 9 = 40 to 54 years old 10 = 55 or older
INCOME	Student's estimate of total family income.	1 = Less than \$10,000 2 = \$10,000 - 14,999 3 = \$15,000 - \$19,999 4 = \$20,000 - \$24,999 5 = \$25,000 - \$29,999 6 = \$30,000 - \$39,999 7 = \$40,000 - \$49,999 8 = \$50,000 - \$59,999 9 = \$60,000 - \$74,999 10 = \$75,000 - \$99,999 11 = \$100,000 - \$149,999 12 = \$150,000 - \$199,999 13 = \$200,000 - \$249,999 14 = More than \$250,000

Variable	Variable Description	Variable Scale
DAD_EDUC	Student's father's highest level of education.	1 = Grammar school or less 2 = Some high school 3 = High school graduate 4 = Postsecondary other than college 5 = Some college 6 = College degree 7 = Some graduate school 8 = Graduate degree
MOM_EDUC	Student's mother's highest level of education.	1 = Grammar school or less 2 = Some high school 3 = High school graduate 4 = Postsecondary other than college 5 = Some college 6 = College degree 7 = Some graduate school 8 = Graduate degree
FT-PT	Student's planned enrollment status.	1 = Part-time; 2 = Full-time
<b>Skills/Education</b>		
ACAD_ABILITY	Student's rating of their <i>Academic Ability</i> as compared with the average person their age.	1 = Lowest 10% 2 = Below Average 3 = Average 4 = Above Average 5 = Highest 10%
DRIVE	Student's rating of their <i>Drive to Achieve</i> as compared with the average person their age.	1 = Lowest 10% 2 = Below Average 3 = Average 4 = Above Average 5 = Highest 10%
LEADER	Student's rating of their <i>Leadership Ability</i> as compared with the average person their age.	1 = Lowest 10% 2 = Below Average 3 = Average 4 = Above Average 5 = Highest 10%
MATH_ABILITY	Student's rating of their <i>Mathematical Ability</i> as compared with the average person their age.	1 = Lowest 10% 2 = Below Average 3 = Average 4 = Above Average 5 = Highest 10%

Variable	Variable Description	Variable Scale
SPEAKING	Student's rating of their <i>Public Speaking Ability</i> as compared with the average person their age.	1 = Lowest 10% 2 = Below Average 3 = Average 4 = Above Average 5 = Highest 10%
INTEL_CONF	Student's rating of their <i>Self-confidence (intellectual)</i> as compared with the average person their age.	1 = Lowest 10% 2 = Below Average 3 = Average 4 = Above Average 5 = Highest 10%
SOC_CONF	Student's rating of their <i>Self-confidence (social)</i> as compared with the average person their age.	1 = Lowest 10% 2 = Below Average 3 = Average 4 = Above Average 5 = Highest 10%
HSGPA	Student's average high school grade.	1 = D 2 = C+ 3 = C 4 = B- 5 = B 6 = B+ 7 = A- 8 = A or A+
SATV	Student's SAT Verbal score.	Actual score measured at the scale level, (e.g. 450)
SATM	Student's SAT Math score.	Actual score measured at the scale level, (e.g. 450)
<b>College Search</b>		
ACCEPT	Student's answer to the following question: <i>if this college was not your first choice, were you accepted by your first choice college?</i>	1 = No 2 = Yes



Variable	Variable Description	Variable Scale
APPLY	Number of colleges, other than this one, the student applied for admissions.	0 = None 1 = 1 2 = 2 3 = 3 4 = 4 5 = 5 6 = 6 7 = 7-10 8 = 11 or more
LEGACY RECODE	Student's indication if parent(s) attended this institution.	1 = Neither 2 = Mother 3 = Father 4 = Both parents
REPUTATION	Reasons for attending this college. <i>This college has a very good academic reputation.</i>	1 = Not important 2 = Somewhat important 3 = Very important
GRAD_SCHOOL	Reasons for attending this college. <i>This college's graduates gain admission to top graduate/professional schools.</i>	1 = Not important 2 = Somewhat important 3 = Very important
GOOD_JOBS RECODE	Reasons for attending this college. <i>This college's graduates get good jobs.</i>	1 = Not important 2 = Somewhat important 3 = Very important
<b>Intentions</b>		
PLAN_LIVE	Student's planned living location for fall 2006.	1 = With my family or other relatives 2 = Other private home, apartment, or room 3 = College residence hall 4 = Fraternity or sorority house 5 = Other campus student housing 6 = Other

Variable	Variable Description	Variable Scale
HI_DEGREE	Student's highest degree planned at this college.	1 = None 2 = Vocational certificate 3 = Associate's degree 4 = Bachelor's degree 5 = Master's degree 6 = Ph.D. or Ed.D. 7 = M.D., D.O., D.D.S., or D.V.M. 8 = J.D. (Law) 9 = B.D. or M.DIV (Divinity) 10 = Other
CH_MAJOR	Student's best guess they will: <i>Change major field.</i>	1 = No Chance 2 = Very little chance 3 = Some chance 4 = Very good chance
CH_CAREER	Student's best guess they will: <i>Change career choice.</i>	1 = No Chance 2 = Very little chance 3 = Some chance 4 = Very good chance
EXTRA_TIME	Student's best guess they will: <i>Need extra time to complete your degree requirements.</i>	1 = No Chance 2 = Very little chance 3 = Some chance 4 = Very good chance
TRANSFER	Student's best guess they will: <i>Transfer to another college before graduating.</i>	1 = No Chance 2 = Very little chance 3 = Some chance 4 = Very good chance
SATISFIED	Student's best guess they will: <i>Be satisfied with their college.</i>	1 = No Chance 2 = Very little chance 3 = Some chance 4 = Very good chance
<b>Commitment</b>		
PARENTS	In deciding to go to college, how important was the following reason to the student: <i>My parents wanted me to go.</i>	1 = Not important 2 = Somewhat important 3 = Very important
NO_JOB	In deciding to go to college, how important was the following reason to the student: <i>I could not find a job.</i>	1 = Not important 2 = Somewhat important 3 = Very important

Variable	Variable Description	Variable Scale
AWAY_HOME	In deciding to go to college, how important was the following reason to the student: <i>Wanted to get away from home.</i>	1 = Not important 2 = Somewhat important 3 = Very important
BETTER_JOB	In deciding to go to college, how important was the following reason to the student: <i>To be able to get a better job.</i>	1 = Not important 2 = Somewhat important 3 = Very important
LIB_ARTS	In deciding to go to college, how important was the following reason to the student: <i>To gain a general education and appreciation of ideas.</i>	1 = Not important 2 = Somewhat important 3 = Very important
NO_BETTER	In deciding to go to college, how important was the following reason to the student: <i>There was nothing better to do.</i>	1 = Not important 2 = Somewhat important 3 = Very important
CULTURE	In deciding to go to college, how important was the following reason to the student: <i>To make me a more cultured person.</i>	1 = Not important 2 = Somewhat important 3 = Very important
MONEY	In deciding to go to college, how important was the following reason to the student: <i>To be able to make more money.</i>	1 = Not important 2 = Somewhat important 3 = Very important
INTERESTS	In deciding to go to college, how important was the following reason to the student: <i>To learn more about the things that interest me.</i>	1 = Not important 2 = Somewhat important 3 = Very important

Variable	Variable Description	Variable Scale
MS_PREP	In deciding to go to college, how important was the following reason to the student: <i>To prepare myself for graduate or professional school.</i>	1 = Not important 2 = Somewhat important 3 = Very important
MENTOR	In deciding to go to college, how important was the following reason to the student: <i>A mentor/role model encouraged me to go.</i>	1 = Not important 2 = Somewhat important 3 = Very important
TRAIN_JOB	In deciding to go to college, how important was the following reason to the student: <i>To get training for a specific career.</i>	1 = Not important 2 = Somewhat important 3 = Very important
RELATIVES	Reasons for attending this college. <i>My relatives wanted me to come here.</i>	1 = Not important 2 = Somewhat important 3 = Very important
TEACHER	Reasons for attending this college. <i>My teacher advised me.</i>	1 = Not important 2 = Somewhat important 3 = Very important
FIN_AID	Reasons for attending this college. <i>I was offered financial assistance.</i>	1 = Not important 2 = Somewhat important 3 = Very important
COST	Reasons for attending this college. <i>The cost of attending this college.</i>	1 = Not important 2 = Somewhat important 3 = Very important
NEAR_HOME	Reasons for attending this college. <i>I wanted to live near home.</i>	1 = Not important 2 = Somewhat important 3 = Very important
NO_AID	Reasons for attending this college. <i>Not offered aid by first choice.</i>	1 = Not important 2 = Somewhat important 3 = Very important
NO_PAY	Reasons for attending this college. <i>Could not afford first choice.</i>	1 = Not important 2 = Somewhat important 3 = Very important

Variable	Variable Description	Variable Scale
SIZE	Reasons for attending this college. <i>I wanted to go to a school about the size of this college.</i>	1 = Not important 2 = Somewhat important 3 = Very important
SPORTS	Reasons for attending this college. <i>The athletic department recruited me.</i>	1 = Not important 2 = Somewhat important 3 = Very important
VISIT	Reasons for attending this college. <i>A visit to the campus.</i>	1 = Not important 2 = Somewhat important 3 = Very important
<b>Academic Performance</b>		
FALLGPA	Student's fall 2006 GPA.	Actual GPA measured at the scale level, (e.g. 3.53)
TUTORED	Student's indication of their participation in the following activity during the past year: <i>Tutored another student.</i>	1 = Not at all 2 = Occasionally 3 = Frequently
STUDIED	Student's indication of their participation in the following activity during the past year: <i>Studied with other students.</i>	1 = Not at all 2 = Occasionally 3 = Frequently
LATE	Student's indication of their participation in the following activity during the past year: <i>Came late to class.</i>	1 = Not at all 2 = Occasionally 3 = Frequently
HMWK	Student's indication of the number of hours per week spent on the following activity in their final year of high school: <i>Studying/homework.</i>	1 = None 2 = Less than 1 3 = 1-2 4 = 3 to 5 5 = 6 to 10 6 = 11 to 15 7 = 16 to 20 8 = Over 20
B_AVG	Student's best guess they will: <i>Make at least a "B" average.</i>	1 = No Chance 2 = Very little chance 3 = Some chance 4 = Very good chance

Variable	Variable Description	Variable Scale
CUM_GPA	Student's 2006/2007 cumulative GPA.	Actual GPA measured at the scale level, (e.g. 3.53)
<b>Staff/Faculty Interaction</b>		
GUEST	Student's indication of their participation in the following activity during the past year: <i>Was a guest in a teacher's home.</i>	1 = Not at all 2 = Occasionally 3 = Frequently
ADVICE	Student's indication of their participation in the following activity during the past year: <i>Asked a teacher for advice after class.</i>	1 = Not at all 2 = Occasionally 3 = Frequently
COM_PROF	Student's best guess they will: <i>Communicate regularly with your professors.</i>	1 = No Chance 2 = Very little chance 3 = Some chance 4 = Very good chance
<b>Extracurricular Activities</b>		
VOLUNTEER	Student's indication of the number of hours per week spent on the following activity in their final year of high school: <i>Volunteer work.</i>	1 = None 2 = Less than 1 3 = 1-2 4 = 3 to 5 5 = 6 to 10 6 = 11 to 15 7 = 16 to 20 8 = Over 20
CLUB_HRS	Student's indication of the number of hours per week spent on the following activity in their final year of high school: <i>Student clubs/groups.</i>	1 = None 2 = Less than 1 3 = 1-2 4 = 3 to 5 5 = 6 to 10 6 = 11 to 15 7 = 16 to 20 8 = Over 20
STU_GVT	Student's best guess they will: <i>Participate in student government.</i>	1 = No Chance 2 = Very little chance 3 = Some chance 4 = Very good chance

Variable	Variable Description	Variable Scale
SOR_FRAT	Student's best guess they will: <i>Join a social fraternity or sorority.</i>	1 = No Chance 2 = Very little chance 3 = Some chance 4 = Very good chance
PLAY_SPORTS	Student's best guess they will: <i>Play varsity/intercollegiate athletics.</i>	1 = No Chance 2 = Very little chance 3 = Some chance 4 = Very good chance
COM_SERV	Student's best guess they will: <i>Participate in volunteer or community service work.</i>	1 = No Chance 2 = Very little chance 3 = Some chance 4 = Very good chance
G_SOC_RACE	Student's best guess they will: <i>Socialize with someone of another racial/ethnic group.</i>	1 = No Chance 2 = Very little chance 3 = Some chance 4 = Very good chance
JOIN_CLUB	Student's best guess they will: <i>Participate in student clubs/groups.</i>	1 = No Chance 2 = Very little chance 3 = Some chance 4 = Very good chance
SDY_ABROAD	Student's best guess they will: <i>Participate in a study abroad program.</i>	1 = No Chance 2 = Very little chance 3 = Some chance 4 = Very good chance
<b>Peer Group Interactions</b>		
ON_OFF	Student's first semester housing status.	1 = Commuter 2 = Off campus 3 = On campus
SOC_RACE	Student's indication of their participation in the following activity during the past year: <i>Socialized with someone of another racial/ethnic group.</i>	1 = Not at all 2 = Occasionally 3 = Frequently
HRS_FRND	Student's indication of the number of hours per week spent on the following activity in their final year of high school: <i>Socializing with friends.</i>	1 = None 2 = Less than 1 3 = 1-2 4 = 3 to 5 5 = 6 to 10 6 = 11 to 15 7 = 16 to 20 8 = Over 20

Variable	Variable Description	Variable Scale
PARTY	Student's indication of the number of hours per week spent on the following activity in their final year of high school: <i>Partying.</i>	1 = None 2 = Less than 1 3 = 1-2 4 = 3 to 5 5 = 6 to 10 6 = 11 to 15 7 = 16 to 20 8 = Over 20
<b>Dependent Variables</b>		
CHOICE	Student's rank of this college in their choice set.	1 = First choice 2 = Second- or later-choice
RETAINED	Was student retained after the first year of study?	1 = Not Retained 2 = Retained



## APPENDIX G

## Descriptive Statistics of Conceptual Framework Variables by First-Choice Students

Variable	<i>N</i>	%	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>SD</i>
<b>Demographics</b>						
RACE	398					
American Indian/Alaska Native		1.2				
Asian American/Asian		1.5				
African American/Black		2.2				
Mexican American/Chicano		.7				
Other		2.2				
Other Latino		.2				
Puerto Rican		1.5				
White/Caucasian		89.1				
GENDER <sup>a</sup>	403		1	2	1.25	0.435
	Female	25.3				
	Male	74.7				
AGE <sup>a</sup>	402		1	10	4.07	1.322
INCOME <sup>a</sup>	340		1	14	8.05	2.816
DAD_EDUC <sup>a</sup>	393		1	8	4.382	1.819
MOM_EDUC <sup>a</sup>	391		1	8	4.468	1.721
FT-PT <sup>a</sup>	402		1	2	1.99	0.111
	Full-time	98.5				
	Part-time	1.2				
<b>Skills/Education</b>						
ACAD_ABILITY <sup>a</sup>	395		1	5	3.4177	0.661
DRIVE <sup>a</sup>	397		1	5	3.6398	0.781
LEADER <sup>a</sup>	397		1	5	3.4358	0.846
MATH_ABILITY <sup>a</sup>	395		1	5	3.1671	0.909
SPEAKING <sup>a</sup>	397		1	5	2.7078	0.907
INTEL_CONF <sup>a</sup>	396		1	5	3.3636	0.769
SOC_CONF <sup>a</sup>	396		1	5	3.3258	0.846
HSGPA <sup>a</sup>	400		1	8	5.01	1.763
SATV	101		300	780	505.46	90.804
SATM	104		300	800	539.94	82.681
<b>College Search</b>						
ACCEPT <sup>a</sup>	89		1	2	1.390	0.491
APPLY <sup>a</sup>	402		0	6	0.590	1.054
LEGACY	402					
	Neither	90.3				
	Mother	2.2				

Variable	<i>N</i>	<i>%</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>SD</i>
	Father	6.2				
	Both	1.0				
REPUTATION <sup>a</sup>	399		1	3	2.480	0.637
GRAD_SCHOOL <sup>a</sup>	387		1	3	1.750	0.766
GOOD_JOBS <sup>a</sup>	394		1	3	2.660	0.557
<b>Intentions</b>						
PLAN_LIVE	403					
	With family	14.6				
	Other private home	30.8				
	Residence hall	47.4				
	Other campus housing	5.5				
	Other	1.7				
HI_DEGREE <sup>a</sup>	255		1	10	3.577	0.722
CH_MAJOR <sup>a</sup>	396		1	4	1.801	0.755
CH_CAREER <sup>a</sup>	394		1	4	1.896	0.773
EXTRA_TIME <sup>a</sup>	394		1	4	2.239	0.831
TRANSFER <sup>a</sup>	392		1	4	1.602	0.777
SATISFIED <sup>a</sup>	390		1	4	3.444	0.646
<b>Commitment</b>						
PARENTS <sup>a</sup>	398		1	3	2.180	0.731
NO_JOB <sup>a</sup>	397		1	3	1.340	0.653
AWAY_HOME <sup>a</sup>	397		1	3	1.660	0.687
BETTER_JOB <sup>a</sup>	399		1	3	2.840	0.420
LIB_ARTS <sup>a</sup>	398		1	3	2.400	0.679
NO_BETTER <sup>a</sup>	396		1	3	1.200	0.475
CULTURE <sup>a</sup>	397		1	3	1.840	0.741
MONEY <sup>a</sup>	396		1	3	2.800	0.436
INTERESTS <sup>a</sup>	399		1	3	2.720	0.518
MS_PREP <sup>a</sup>	396		1	3	1.790	0.778
MENTOR <sup>a</sup>	398		1	3	1.540	0.675
TRAIN_JOB <sup>a</sup>	399		1	3	2.850	0.385
RELATIVES <sup>a</sup>	393		1	3	1.480	0.639
TEACHER <sup>a</sup>	393		1	3	1.430	0.611
FIN_AID <sup>a</sup>	395		1	3	1.590	0.763
COST <sup>a</sup>	398		1	3	1.750	0.748
NEAR_HOME <sup>a</sup>	394		1	3	1.590	0.777
NO_AID <sup>a</sup>	391		1	3	1.120	0.388
NO_PAY <sup>a</sup>	392		1	3	1.090	0.364
SIZE <sup>a</sup>	395		1	3	1.900	0.786
SPORTS <sup>a</sup>	390		1	3	1.100	0.352
VISIT <sup>a</sup>	396		1	3	2.090	0.762

Variable	<i>N</i>	<i>%</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>SD</i>
<b>Academic Performance</b>						
FALLGPA	393		0	4	2.652	1.021
TUTORED <sup>a</sup>	395		1	3	1.289	0.496
STUDIED <sup>a</sup>	397		1	3	1.801	0.630
LATE <sup>a</sup>	394		1	3	1.404	0.545
HMWK <sup>a</sup>	397		1	8	3.267	1.277
B_AVG <sup>a</sup>	393		1	4	3.422	0.651
CUM_GPA	343		0	4	2.785	0.810
<b>Staff/Faculty Interaction</b>						
GUEST <sup>a</sup>	395		1	3	1.142	0.422
ADVICE <sup>a</sup>	395		1	3	1.800	0.599
COM_PROF <sup>a</sup>	392		1	4	2.852	0.799
<b>Extracurricular Activities</b>						
VOLUNTEER <sup>a</sup>	396		1	8	2.091	1.553
CLUB_HRS <sup>a</sup>	396		1	8	2.030	1.401
STU_GVT <sup>a</sup>	395		1	4	1.684	0.815
SOR_FRAT <sup>a</sup>	395		1	4	1.600	0.779
PLAY_SPORTS <sup>a</sup>	387		1	4	1.987	1.006
COM_SERV <sup>a</sup>	393		1	4	2.117	0.899
G_SOC_RACE <sup>a</sup>	392		1	4	3.061	0.891
JOIN_CLUB <sup>a</sup>	391		1	4	2.340	0.960
SDY_ABROAD <sup>a</sup>	391		1	4	1.849	0.892
<b>Peer Group Interactions</b>						
ON_OFF	403					
	On campus	51.1				
	Off campus	36.2				
	Commuter	12.7				
SOC_RACE <sup>a</sup>	395		1	3	2.294	0.664
HRS_FRND <sup>a</sup>	395		1	8	5.580	1.701
PARTY <sup>a</sup>	398		1	8	3.347	1.920
<b>Dependent Variables</b>						
CHOICE <sup>a</sup>	403		1	1	1.000	0.000
RETAINED <sup>a</sup>	403		1	2	1.700	0.458

<sup>a</sup> Refer to Appendix F for variable descriptions and scales

## APPENDIX H

## Descriptive Statistics of Conceptual Framework Variables by Second-Choice Students

Variable	<i>N</i>	%	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>SD</i>
<b>Demographics</b>						
RACE	79					
American Indian/Alaska Native		0				
Asian American/Asian		0				
African American/Black		7.6				
Mexican American/Chicano		1.3				
Other		1.3				
Other Latino		0				
Puerto Rican		0				
White/Caucasian		89.9				
GENDER <sup>a</sup>	79		1	2	1.33	0.473
	Female	32.9				
	Male	67.1				
AGE <sup>a</sup>	78		3	9	4.12	1.259
INCOME <sup>a</sup>	65		1	14	8.400	3.225
DAD_EDUC <sup>a</sup>	78		2	8	4.359	1.659
MOM_EDUC <sup>a</sup>	77		2	8	4.870	1.625
FT-PT <sup>a</sup>	78		2	2	2.00	0.000
	Full-time	98.7				
	Part-time	0				
<b>Skills/Education</b>						
ACAD_ABILITY <sup>a</sup>	75		2	5	3.36	0.629
DRIVE <sup>a</sup>	76		1	5	3.75	0.926
LEADER <sup>a</sup>	76		1	5	3.566	0.957
MATH_ABILITY <sup>a</sup>	76		1	5	3.066	0.943
SPEAKING <sup>a</sup>	77		1	5	2.779	1.008
INTEL_CONF <sup>a</sup>	77		1	5	3.429	0.802
SOC_CONF <sup>a</sup>	77		1	5	3.364	0.986
HSGPA <sup>a</sup>	77		2	8	5.17	1.642
SATV	27		340	650	504.19	71.504
SATM	27		356	740	514.11	100.20
<b>College Search</b>						
ACCEPT <sup>a</sup>	78		1	2	1.69	0.465
APPLY <sup>a</sup>	79		0	8	2.2278	1.846
LEGACY	79					
	Neither	87.3				
	Mother	7.6				

Variable	<i>N</i>	<i>%</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>SD</i>
	Father	3.8				
	Both	1.3				
REPUTATION <sup>a</sup>	79		1	3	2.44	0.635
GRAD_SCHOOL <sup>a</sup>	79		1	3	1.94	0.774
GOOD_JOBS <sup>a</sup>	78		1	3	2.47	0.639
<b>Intentions</b>						
PLAN_LIVE	79					
	With family	13.9				
	Other private home	40.5				
	Residence hall	34.2				
	Other campus housing	7.6				
	Other	3.8				
HI_DEGREE <sup>a</sup>	55		1	8	3.564	0.996
CH_MAJOR <sup>a</sup>	77		1	4	2.078	0.870
CH_CAREER <sup>a</sup>	77		1	4	2.091	0.781
EXTRA_TIME <sup>a</sup>	77		1	4	2.416	0.894
TRANSFER <sup>a</sup>	76		1	4	2.158	1.020
SATISFIED <sup>a</sup>	74		1	4	3.108	0.713
<b>Commitment</b>						
PARENTS <sup>a</sup>	78		1	3	2.100	0.766
NO_JOB <sup>a</sup>	78		1	3	1.410	0.711
AWAY_HOME <sup>a</sup>	78		1	3	1.880	0.756
BETTER_JOB <sup>a</sup>	77		1	3	2.810	0.514
LIB_ARTS <sup>a</sup>	78		1	3	2.460	0.618
NO_BETTER <sup>a</sup>	77		1	3	1.170	0.410
CULTURE <sup>a</sup>	77		1	3	1.970	0.707
MONEY <sup>a</sup>	77		1	3	2.880	0.362
INTERESTS <sup>a</sup>	77		1	3	2.690	0.520
MS_PREP <sup>a</sup>	78		1	3	2.150	0.807
MENTOR <sup>a</sup>	77		1	3	1.680	0.733
TRAIN_JOB <sup>a</sup>	78		1	3	2.760	0.539
RELATIVES <sup>a</sup>	79		1	3	1.490	0.714
TEACHER <sup>a</sup>	77		1	3	1.380	0.629
FIN_AID <sup>a</sup>	79		1	3	1.630	0.787
COST <sup>a</sup>	77		1	3	1.830	0.768
NEAR_HOME <sup>a</sup>	79		1	3	1.520	0.731
NO_AID <sup>a</sup>	79		1	3	1.390	0.649
NO_PAY <sup>a</sup>	79		1	3	1.520	0.766
SIZE <sup>a</sup>	79		1	3	1.820	0.781
SPORTS <sup>a</sup>	78		1	3	1.100	0.345
VISIT <sup>a</sup>	79		1	3	2.050	0.799

Variable	<i>N</i>	<i>%</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>SD</i>
<b>Academic Performance</b>						
FALLGPA	79		0	4	2.593	1.006
TUTORED <sup>a</sup>	77		1	3	1.299	0.515
STUDIED <sup>a</sup>	77		1	3	1.870	0.636
LATE <sup>a</sup>	77		1	3	1.364	0.536
HMWK <sup>a</sup>	78		1	8	3.385	1.360
B_AVG <sup>a</sup>	75		2	4	3.493	0.578
CUM_GPA	70		0.354	4	2.666	0.887
<b>Staff/Faculty Interaction</b>						
GUEST <sup>a</sup>	77		1	3	1.195	0.460
ADVICE <sup>a</sup>	77		1	3	1.948	0.605
COM_PROF <sup>a</sup>	77		1	4	2.935	0.767
<b>Extracurricular Activities</b>						
VOLUNTEER <sup>a</sup>	78		1	6	2.051	1.308
CLUB_HRS <sup>a</sup>	78		1	6	2.333	1.438
STU_GVT <sup>a</sup>	77		1	4	1.844	0.904
SOR_FRAT <sup>a</sup>	77		1	4	1.714	0.944
PLAY_SPORTS <sup>a</sup>	76		1	4	2.197	1.155
COM_SERV <sup>a</sup>	76		1	4	2.132	0.957
G_SOC_RACE <sup>a</sup>	76		1	4	3.250	0.926
JOIN_CLUB <sup>a</sup>	76		1	4	2.474	0.916
SDY_ABROAD <sup>a</sup>	76		1	4	1.895	0.858
<b>Peer Group Interactions</b>						
ON_OFF	79					
	On campus	36.7				
	Off campus	50.6				
	Commuter	12.7				
SOC_RACE <sup>a</sup>	75		1	3	2.440	0.683
HRS_FRND <sup>a</sup>	77		2	8	5.675	1.765
PARTY <sup>a</sup>	78		1	8	3.333	2.112
<b>Dependent Variables</b>						
CHOICE <sup>a</sup>	79		2	2	2.000	0.000
RETAINED <sup>a</sup>	79		1	2	1.720	0.451

<sup>a</sup> Refer to Appendix F for variable descriptions and scales

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Webb, B. M. & Mueller, J. A. (2009). Spirituality of college students: An examination of fraternity/sorority member and non-member groups. *Oracle: The Research Journal of the Association of Fraternity/Sorority Advisors*, 4(2), 41-55.

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