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The Impact of Academic Advising on GPA and Retention at the Community College Level

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THE IMPACT OF ACADEMIC ADVISING ON GPA AND RETENTION AT THE COMMUNITY COLLEGE LEVEL

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Title: The Impact of Academic Advising on GPA and Retention at the Community College Level

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While the literature indicates a link between retention and advising, almost all previous research has measured perceptions or satisfaction with advising. Because of this, it seems that there is a gap in the methodology used to assess the efficacy of advising services. Even though investigators may be able to locate studies that assert increased use of services based on satisfaction, they still have not adequately measured service quality. This distinction is the crux of the research. The purpose of this research project is to explore whether satisfaction with advising services correlate with measures that are more objective, such as GPA and retention rates.

This exploratory study used two related sets of data. The first is from a survey conducted to evaluate counseling and transfer services. The second is GPA and retention data for the students who participated in the survey. The results of the assessment were compared with more concrete measures of effective academic advising from the second data set.

Hierarchical OLS regression and binary logistic regression were used to estimate the impact of the satisfaction variables on GPA and retention while controlling for the demographic variables. Although the hypotheses presented in this study were rejected, the research results were as expected. The relationship between

perceptions of advising and GPA and retention did not support the findings in the literature when subjective measures were used.

Although there are limitations and it was exploratory in nature, this research provides initial support for further qualitative research. If institutions plan to continue advising programs, they should seek to substantiate the effectiveness. That may lead to restructuring the provision of advising services in an effective and efficient means that meets the needs of both the college and the student.

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I would like to express my thanks to my chair and committee members for their time and talent. I would like to thank my husband for his support during this process.

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CHAPTER I

INTRODUCTION

In this study, I investigate the relationship between academic advising and two objective indicators of academic performance, grade point averages (GPAs) and retention. The idea for the study stems from questions that arose upon examination of an existing method of evaluating advising services.

A community college in south-central Pennsylvania (henceforth referred to as South-Central Pennsylvania Community College or SCPCC) conducted an assessment of counseling, career, and transfer services in the fall of 2006. It involved an extensive survey of students to measure their satisfaction with academic advising. The purpose was to comply with internal evaluation requirements as well as those set forth by the Middle States Commission on Higher Education. SCPCC administrators use the results of the assessment to restructure advising personnel and make decisions regarding the provision of services.

The assessment SCPCC carried out measured students' perceptions and feelings about advising. While some evidence in literature suggests satisfaction plays a role in increased use of services, it is not necessarily a measure of the effectiveness of those services. SCPCC needs objective data to determine if student perceptions of satisfaction correlate with the quality of advising services.

Indeed, SCPCC is not the only institution to use this method of evaluation. Therefore, there may be wider implications for other schools that also use this method of assessment to comply with Middle States requirements. However, while there may be applications for other colleges, this research will focus only on SCPCC.

Retention

Research on retention is contradictory and inconclusive (Bean, 1985; Cabrera, Nora, & Castaneda, 1993; Jones, 1986; Spady, 1970). Many of the studies that exist have methodological problems and use different definitions for similar terms or the same definitions for dissimilar terms (Astin, Korn, & Green, 1987).

Not much research is available in general, and especially on community colleges (Bean, 1980; Halpin, 1990; McArthur, 2005; Pascarella, Wolniak, & Pierson, 2003; Spady, 1971). While there has been some study of nontraditional students at four-year schools, no comprehensive models for community colleges exist (Bean & Metzner, 1985; Derby & Smith, 2004; Wild & Ebbers, 2002). Limiting exploration even further, research from four-year schools cannot be generalized to community colleges (Pascarella, Wolniak, & Pierson, 2003; Schuetz, 2005; Strauss & Volkwein, 2004; Wild & Ebbers, 2002).

There is disagreement over which models qualify as the major theoretical works. Some writers consider them to be Spady and Tinto (Aitken, 1982; Pascarella & Terenzini, 1979), or Tinto and Astin (Astin, Korn, & Green, 1987; Wild & Ebbers, 2002). Others consider them to be Spady, Bean, and Pascarella or some other combination therein (Cabrera, Nora, & Castaneda, 1993; Calcagno, Crosta, Bailey, & Jenkins, 2006; Monroe, 2006; Summers, 2003).

Even the time origin of the need to focus on attrition is in dispute. Some authors report that dropout rates started to increase and enrollment rates decrease in the 1970s (Crockett, 1978b; Habley, 1981; Raskin, 1979; Titley & Titley, 1982) while others note

that the dropout rate has remained essentially constant over time (Pantages & Creedon, 1978; Peterson, Wagner, & Lamb, 2001; Schuetz, 2005).

One of the few things scholars agree on is the importance of studying and improving retention (Crockett, 1978b; Derby & Smith, 2004; Guttman & Olkin, 1989; Metzner, 1989; Pantages & Creedon, 1978; Schuetz, 2005; Wild & Ebbers, 2002). The dropout rate affects students, institutions, and communities.

From an institutional standpoint, attrition affects operations and finances. The tuition and fees from dropouts is lost, and space requirements are difficult to assess. Retention rates may be used as a measure of effectiveness or in organizational rankings. Moreover, retention rates may also be used as criteria for state and federal funding (Derby & Smith, 2004).

From the student perspective, dropping out impacts short- and long-term financial matters. In the short term, the student will lose money on the tuition spent to attend classes. In the long term, he will limit his lifetime earning potential and job opportunities, which will ultimately affect quality of life and the ability to save for retirement (Brower, 1992; Habley & McClanahan, 2004).

Attrition takes its toll on communities and society as well. Students who drop out reduce the pool of employees available to function in an increasingly complicated workplace (Schuetz, 2005). Their reduced earnings may cause increased reliance on government financial support, provide fewer charitable contributions, and decrease the amount of income to tax, thereby generating fewer dollars for government operations (Habley & McClanahan, 2004).

Advising

In 1841, Rutherford Hayes attended Kenyon College and wrote home about a new program mandating each student to choose a member of the faculty to serve as an advisor and friend (Crockett, 1978b; Raskin, 1979; Titley & Titley, 1982). Although official methods of advising were in place in most colleges by the 1930s, Johns Hopkins established the first formal system of faculty advising in 1877 (Raskin, 1979).

Research about advising is just as conflicting as it is for attrition. While several studies indicate that it is not significant in improving retention and grade point average (GPA) (Aitken, 1982; Bean, 1980), others report it to be critical for both (Crockett, 1978a; Habley, 1981; Pascarella & Terenzini, 1978; Tinto, 2000; Wilder, 1981). Most of the studies measured student perceptions of advising (Nadler & Nadler, 1999; Raskin, 1979). Only two used the objective measures of GPA and retention to show a significant impact from increased frequency of advising (Morehead & Johnson, 1964; Rossman, 1967), and no studies used objective measures that examined advising quality.

Despite the dearth of conclusive research, authors and institutions of higher education repeatedly stress the significance of academic advising in improving retention (Escobedo, 2007; Habley, 1981; Habley & McClanahan, 2004; Jones, 1986; Metzner, 1989; Tinto, 2000; Wilder, 1981). Those in higher education intuitively cite this area as a major source of reducing dropout, and some believe it is the "single best strategy for improving retention" (Metzner, 1989, p. 434).

Researchers agree that academic advising is an important source of informal faculty contact and academic integration (Crookston, 1972; Nadler & Nadler, 1999; Pascarella & Terenzini, 1976; Raskin, 1979). Findings show that when students partake

of advising services, they feel better about their advisors as well as the institution as a whole (Nadler & Nadler, 1999; Peterson, Wagner, & Lamb, 2001; Wilder, 1981).

Research suggests that meeting with faculty advisors improves retention (Gerdes & Mallinckrodt, 1994; Grites, 1998; McArthur, 2005; McLaren, 2004; Sayles, 2005; Thompson, Orr, Thompson, & Grover, 2007; Titley & Titley, 1982). Students who do not seek or receive advising services may be disappointed in how their classes transfer, take additional time to graduate, or have lower GPAs because they lack knowledge of campus resources (Flaga, 2006; Gelwick, 1974; Hunter & White, 2004).

At community colleges, there is a variation in the types of students. Some are seeking a terminal degree, some want to transfer to a university, and others want to transfer credits *to* the feeder school. Some students are recent high school graduates, some are nontraditional adults, and others have GEDs. Because of the diversity of the population, academic advisors must be aware of many issues (Peterman, 2000).

Problem Statement

While the literature indicates a link between advising and retention, almost all previous research has measured perceptions or satisfaction with advising. Because of this, it seems that there is a gap in the methodology used to assess the efficacy of advising services. Even though investigators may be able to locate studies that assert increased use of services based on satisfaction, they still have not adequately measured service quality. This distinction is the crux of the research, which measures satisfaction with advising and how it correlates with academic performance. Retention and GPA serve as the two objective indicators of “service quality.”

Although satisfaction may play a role in increased use of services, it is not necessarily a measure of the effectiveness of those services. When students meet with advisors, they may not be capable of objectively assessing the quality of the service they received. A student who receives accurate information from a surly advisor may report dissatisfaction, while another student who receives erroneous information from a pleasant advisor may report being satisfied.

To restructure and provide services simply based on subjective information may not lead to improved assistance and support. From a policy-making standpoint, administrators do not know if the internal survey provides good measures of effectiveness. Middle States imposes some form of student services assessment on all schools that seek its accreditation, yet again, no one knows if these assessments relate to service effectiveness.

Metzner (1989) observed that while many authors claim academic advising plays an essential role in retention, there are few studies that verify this assertion. Most of the research that included advising had it lumped in a category of associated faculty interaction or student services variables (Atiken, 1982; Bank, Slavings, & Biddle, 1990; Bean, 1985; Biddle, Bank, & Slavings, 1987; Pantages & Creedon, 1978; Pascarella & Terenzini, 1979; Spady, 1971). The studies showed mixed results. Some found a positive relationship, while others found no connection. Since these studies did not use advising as an independent variable unbundled with other faculty-related factors, they do not assist in developing a new conceptual model.

Fewer still are studies that measure the impact that the quality of advising has on attrition. Metzner's (1989) approach measured the perception of advising quality on the retention of freshmen at a public university. She found

> … good advising had a negative association with dropout based on the following factors: students' better academic performance (GPA); their belief that an education at the university had greater value for future employment opportunities (utility); more satisfaction with courses and the role of being a student (satisfaction); and less intent to leave the university (p. 432).

The author concluded that her results are consistent with assertions in advising literature, and that high-quality advising can help retention.

For SCPCC's purposes, there are two limitations to this study. First, Metzner (1989) conducted it at a university. I will establish in a subsequent section of this paper that there is a lack of generalizability from four-year institutions to two-year colleges. Second, it used student perceptions to measure quality. The impetus for this research is the question of the accuracy of using perceptions to determine the quality of advising.

The only experiment that measured some effects of advising and did not involve student perceptions took place over 40 years ago. Morehead and Johnson (1964) exposed a group of male freshmen engineering students to a different academic advising program and then compared GPA and retention to the control group, which experienced the traditional advising program. They found that the experimental group, which received increased informal advising contact, had a significantly higher GPA than the control group. The former had a smaller dropout rate than the latter, but the difference was not significant.

The Morehead and Johnson (1964) study was the only one located that did not measure perceptions, but instead used more objective means to measure the impact of

advising. However, it did not measure the quality of advising and the effect that had on the higher GPA of the experimental group.

Purpose and Objectives of the Study

It seems that colleges need to use objective data to determine if student perceptions of satisfaction correlate with the quality of advising services. Most conduct studies similar to Metzger's (1989) research for use internally and externally. They may use the information to develop a plan for the delivery of advising services. To restructure and provide services simply based on subjective information may not lead to improved assistance and support.

From a policy-making standpoint, administrators do not know if the internal survey provides good measures of effectiveness. Middle States Commission on Higher Education imposes some form of student services assessment on all schools that seek its accreditation, yet again, no one knows if these assessments relate to service effectiveness. Therefore, there may be wider implications for other schools that also use this method of assessment to comply with Middle States requirements.

The purpose of this research project is to explore whether perceptions of advising services correlate with measures that are more objective, such as GPA and retention rates. This may help confirm or refute the validity of using this type of instrument to measure the effectiveness of advising services.

CHAPTER II

REVIEW OF RELATED LITERATURE

Chapter Overview

This chapter begins by exploring the major theories about retention. After reviewing the six major models, I will explore two ways to combine them. The first is a classification system developed by Strauss and Volkwein (2004). The second is my own synthesis in which I took the liberty of "translating" variable meanings into a common language.

Following this section, I will outline some conceptual definitions of advising and retention developed in the scholarly literature. Then I will discuss how retention has been measured and operationalized. Before evaluating which are best for studying the relationship between advising and retention at the community college level, it is important to explore the differences between traditional schools and community colleges as institutions and the students that attend each type. Keeping the unique characteristics of community college students in mind, this section concludes by combining definitions from the literature to develop my own concepts of academic advising, retention, and the operationalization of retention.

Next, I will examine the factors or variables that predict retention. These factors are those synthesized from the theoretical models. I will also discuss studies that confirm or refute the predictive ability of each factor.

Then, based on the information from all of the previous sections, I will construct my own model that will feature the role of advising. I will revisit the variables that predict retention and explain why I selected certain variables and excluded others,

keeping the community college institution and students in mind. Prior to constructing a conceptual model, I will explore the relationship between advising and retention.

Models

Five authors represent the basis for most subsequent work on examining models of retention. While these writers were not the first to study the topic, they produced seminal ideas that still serve as the foundation for retention research. Spady (1970), Tinto (1975), Bean (1980), Pascarella (1980), and Astin (1984) created conceptual models, and a sixth model was developed by Cabrera, Nora, and Castaneda (1993) that integrated the work of Tinto and Bean. I will refer to the last model as Cabrera's for the remainder of this paper. While I do not wish to deny Nora and Castaneda credit for their contributions, using the names of all three authors is very unwieldy.

Several of the theoretical models developed lack accompanying empirical research. Those observational studies came later. Some are conflicting and really do not provide evidence for the use of one model versus another. In addition, almost all studies employed data that measured students' perceptions of variables and did not explore the quality of the factors, merely the presence or frequency. The few studies that had questions regarding quality also used student perceptions, not objective variables, as the basis for measurement.

Scholars agree that there is no one model that can predict all attrition (Biddle, Bank, & Slavings, 1987; Pantages & Creedon, 1978). Despite this difficulty, the models are helpful in understanding and predicting dropout behavior. Many of the variables in the models overlap with each other, although the relationships and level of importance may be different.

Spady's Dropout Process

Spady (1970) used Durkheim's social theory on suicide as the basis for his retention model. Spady took Durkheim's thoughts on how lack of integration can cause an individual to sever ties with a social system and applied them to higher education. While Spady acknowledges dropping out of college is much less drastic than ending one's life, there are parallels between the social conditions that cause both outcomes.

According to his theory, there are two major social components of Durkheim's version of social integration. The first involves the two ways to have success in the academic system. Actual grades are extrinsic rewards, while intellectual development is an intrinsic reward. In the social system, one achieves success when attitudes and interests are compatible with the academic environment. Spady (1970) terms this condition "normative congruence" (p. 77). He acknowledges that operationalizing this term is difficult and causes problems in assuming direct causal connections.

The second major component is what Spady (1970) calls "friendship support" (p. 77). This describes how closely a student has established relationships with others in the system, whether they are fellow students, personnel, or faculty. Together, these two connect his model to Durkheim's theory.

The original model Spady (1970) developed contains five independent variables: grade performance, intellectual development, normative congruence, friendship support, and social integration. The first four variables influence the fifth, all of which link indirectly through two intervening variables to the dependent variable, dropout decision. The those two variables are satisfaction and institutional commitment.

In Spady's (1971) next major paper, he put his model to the test. Using a sample comprised of 683 freshmen at the University of Chicago, he surveyed students about their perceptions of environmental and social influences. He then combined the results with GPA and retention data from the institution.

After applying the model to a longitudinal study, he revised it by adding variables and changing the relationships. Spady (1971) added structural relations as a factor and made friendship support a subset of it. This was because he found friendship support to be "directly dependent on elements in both the family background and normative congruence clusters" (Spady, 1971, p. 58).

The major revisions in the model occurred because Spady (1971) found several differences based on gender. He changed some of the directional arrows and the paths to connect variables. He found that for men, grade performance was the most important factor for determining attrition, and institutional commitment and social integration were on a secondary level. Their focus was on meeting formal standards set by faculty and they were willing to tolerate the environmental conditions imposed on them.

Women, conversely, based their dropout decision primarily on institutional commitment and secondarily on academic performance (Spady, 1971). Reactions to subjective social criteria indicated that females would not remain in an unsatisfying college environment.

The longer the students' tenure in college, however, achievement and persistence became tantamount. Ultimately, the study found "formal academic performance is clearly the dominant factor in accounting for attrition among both sexes" (Spady, 1971, p. 38).

There is also a connection from institutional commitment back to normative congruence. Spady (1970) finds this important because it reflects the cyclical nature of the model. He suggests that the process can have an effect on the individual, thus causing the student to change attitudes and interests.

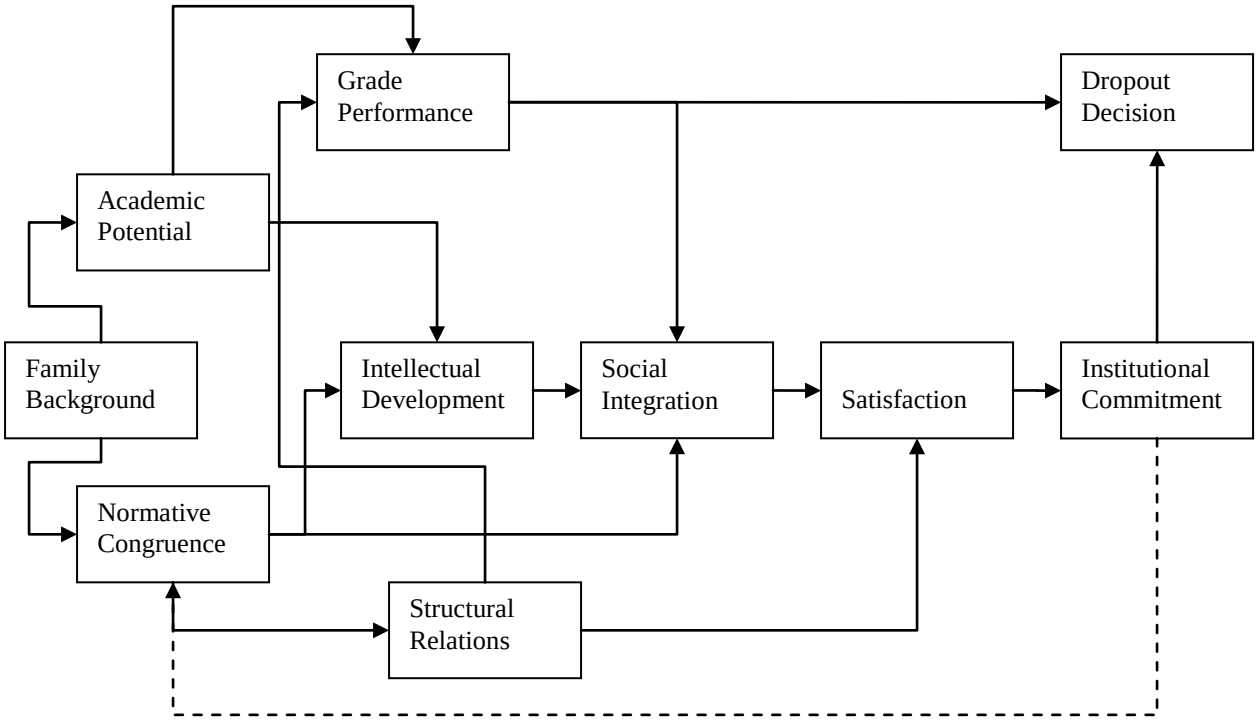

Figure 1 - Spady's explanatory sociological model of the dropout process.

Tinto's Student Integration Model

Tinto (1975) formulated a theoretical model to explain the how contact between students and institutions affect dropout behavior and the different processes that occur for the differing forms of behavior. His Student Integration Model explores the nature of these longitudinal processes and delineates the reasons and characteristics that result in

attrition. Although the title would imply the model views retention from the student's perspective, it is in fact oriented toward the institution.

Tinto (1975) built on Spady's (1970) application of Durkheim's theory of suicide to dropout. In the process of developing his model, he delved deeper into the types of suicides and related them to the different types of attrition. Like Durkheim's classifications, Tinto wrote that not all types of dropout are the same. He felt the lack of distinction has caused attrition estimates to be higher than the actual dropout rate and led to contradictory findings.

The first way Tinto (1975) distinguishes withdrawal is between involuntary and voluntary. The former is usually due to academic failure. The latter is due to lack of congruency between the student, the intellectual climate of the college or university, and the social system.

Tinto (1975) contends that academic dismissal can also occur when students are fully socially integrated. However, this would only be the case when a student integrates to such an extreme extent that extracurricular activities and social dealings take priority over academic pursuits.

Other types of voluntary attrition he identified are withdrawal, permanent dropout, temporary dropout, and transfer (Tinto, 1975). Withdrawal is due to lack of congruency between the student and the institutional environment and social system. It may result in permanent dropout, temporary dropout, or transfer but it is not due to lack of academic performance.

Tinto (1975) theorized that the more students feel integrated into the institution, both socially and academically, the less likely they are to drop out. When students

matriculate, they bring with them individual social and academic background characteristics and experiences, different educational goals, and varying levels of interest in the college. As time passes, they interact with the social and academic systems of the school to integrate into the environment. The level of integration influences the decision to exit or persist.

This model is one of the most tested in empirical studies, with mixed results. Several studies have confirmed Tinto's assertions that integration predicts retention (Halpin, 1990; Pascarella & Chapman, 1983; Pascarella & Terenzini, 1979; Terenzini, Lorang, & Pascarella, 1981; Torres & Solberg, 2001) although many have found no basis for that construct plus several others in the model (Bean, 1980; Cabrera, Stampen, & Hansen, 1990; Derby & Smith, 2004; McCubbin, 2003; Nora, Attinasi, & Matonek, 1990).

In addition, research has shown that at two-year colleges, integration has a different effect on the predictive ability of the model (Pascarella & Chapman, 1983). Academic integration had a much greater influence than social integration. Halpin (1990) tested it on freshmen at a community college and discovered that integration predicted persistence, thus finding utility in Tinto's model. Halpin hypothesizes that may be because students are already integrated into the community and do not need to fill belonging needs in an unfamiliar dormitory or campus environment. This contradicts criticisms of the inapplicability of Tinto's model to nontraditional students, even though he only intended to apply the model to traditional students (Tinto, 1982).

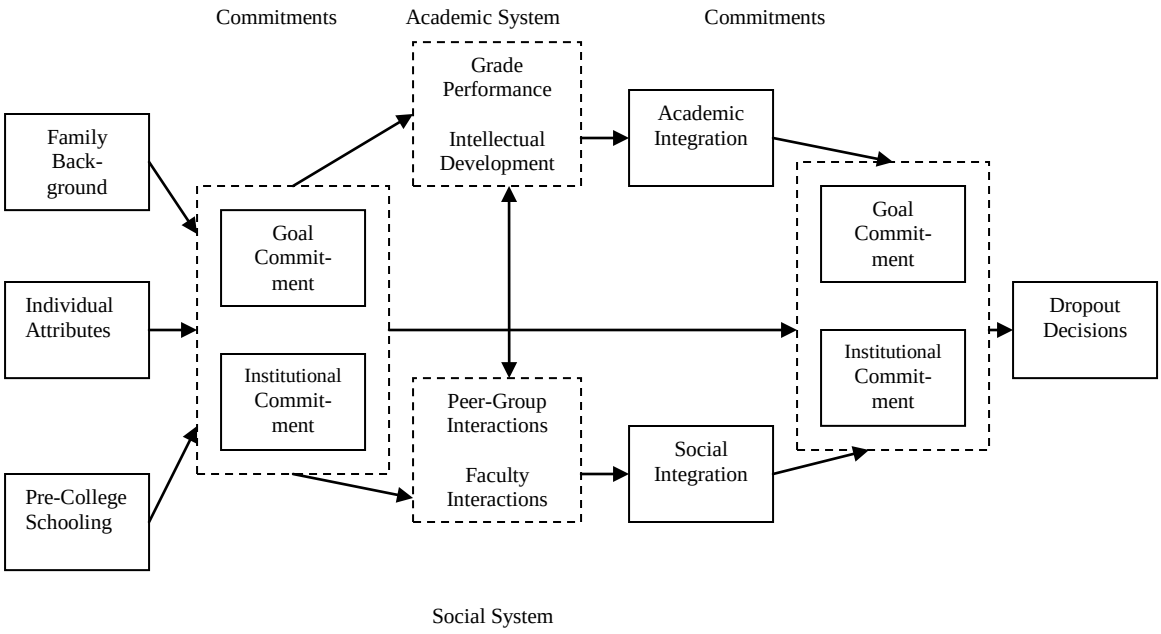

Figure 2 – Tinto's student integration model.

Bean's Student Attrition Model

Bean (1980) found insufficient evidence for the theoretical link between attrition and suicide and disagreed with the use of Durkheim's theory as the basis for dropout models. He criticized Tinto and Spady for developing models lacking directional causality and discreteness, therefore making empirical studies employing these models inconclusive.

Bean (1980) based his first conceptual model of attrition on a model of turnover in the workplace. He borrowed ideas from Price's study of employee turnover because it explored the things that affect satisfaction, which in turn affects dropout. Price viewed income as a strong indicator of turnover in the work organization. Bean (1980) hypothesized grades would have the same effect in the university setting. He added variables to measure prematriculation characteristics and student interaction. Bean (1980)

found that GPA significantly related to satisfaction, and institutional commitment was the most significant of all variables.

Building on that research, Bean (1985) developed a second conceptual model of attrition in which academic, social-psychological, and environmental factors influence socialization factors, which in turn influence dropout syndrome. The first set of variables is exogenous and originates outside the system. They affect the internal or endogenous variables, which affect the criterion for retention.

Bean (1985), for his study, defined dropout as the failure of a student enrolled in the spring semester to reenroll at the same campus the following fall semester. He believed continued attendance to be a measure of successful socialization. He excluded graduates and transfers from the definition. However, the dependent variable he measured was not dropout, but dropout syndrome. This differs from dropout in that Bean (1985) focused on the open intent to leave coupled with actual dropout.

Because Bean (1985) uses dropout syndrome, he did not differentiate between the types of dropout. Unlike the Tinto (1975) and Spady (1970), he includes those who leave involuntarily due to academic dismissal as socialization failures. Thus, Bean makes no distinction between students who voluntarily dropout and those who are forced to leave because of poor performance. This is because when a student makes the decision to drop out, he may stop attending class or lose interest in course work. The resulting poor performance is essentially voluntary, not due to inadequate academic preparation or ability. Dropouts due to emergency circumstances are not system failures because they showed no previous intent to leave the institution.

He also takes a different view of socialization than that of the other attrition modelers. Whereas Tinto (1975) and Pascarella (1980) view socialization as a result of external influences acting on the individual, Bean (1985) sees the individual actively influencing the process and making choices to determine the outcome.

He identified three major social theories to support his view. According to symbolic interactionism, socialization occurs as individuals develop and interpret new meanings, understandings, and definitions of the circumstances. In exchange theory, actors pursue, negotiate, and contribute to the environment in exchange for rewards that result in advantageous positions. Under expectancy theory, individuals will actively adopt values and strive to meet goals if they believe are attainable and desire the outcome. All of these theories reinforce Bean's (1985) view that socialization is active instead of passive.

Indeed, his study indicates that the passive view is not accurate (Bean, 1985). Findings showed that students are responsible for their socialization and actively shape the situation. Peer relations had the strongest influence, rather than informal faculty contact. Grades were a function of selection and not socialization.

Bean, with Metzger (1985), later developed a model for specifically for nontraditional students at four-year commuter colleges. They recognized the need for a different approach because the level of integration is not the same as for unemployed, residential students in universities. For the nontraditional students, the level of social integration plays a much smaller role.

Building on Bean's earlier work, the conceptual model for nontraditional students uses four sets of variables. It incorporates academic performance, intent to leave, background, and environmental factors.

The model also includes two compensatory interaction effects. For nontraditional students, environmental variables, as defined by Bean and Metzner (1985), are more important than academic variables. Therefore, the former can compensate for the latter, but strong academic support cannot compensate for weak environmental support. In other words, a good environment can cover for poor academic fit, but not the inverse. The authors provide and example of each situation. Strong encouragement from family and friends may encourage a student to persist even if he is unsure about his major. However, if the student cannot pay for college, he will not continue no matter how much encouragement he receives.

The second compensatory interaction effect is between GPA and psychological outcomes. In this case, psychological factors can compensate for low academic achievement but high academic success cannot compensate for low satisfaction (Bean & Metzner, 1985). Again, the authors provide examples to explain. If a student enjoys association with the institution, he will persist despite poor grades. However, if a student does not anticipate any positive outcomes from earning a degree he may dropout despite a high GPA.

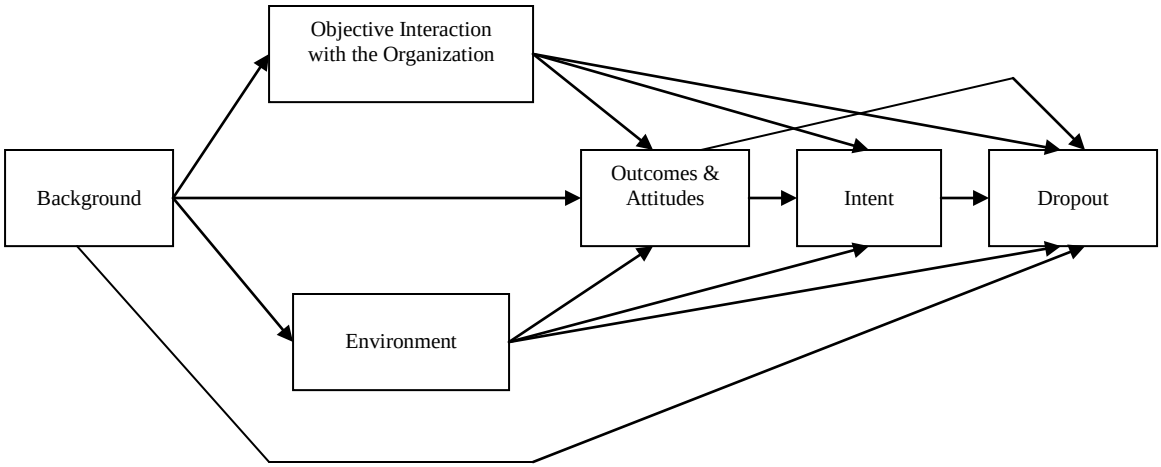

Figure 3 – Bean's student attrition model.

Pascarella's Conceptual Model for Research on Student-Faculty Informal Contact

Pascarella (1980) takes informal contact between students and faculty and fits it into an attrition model. He writes that the importance of student-faculty exchanges in affecting education has been a long held belief. Specifically, those relations that occur informally, or outside the classroom, are of greatest significance.

Pascarella's (1980) model seeks "to understand the unique influence of student-faculty nonclassroom contact on educational outcomes and institutional persistence" (p. 568). To accomplish this, the model takes into account a student's background characteristics, college experiences, and institutional factors.

The model hypothesizes that the students bring with them individual differences based on their unique backgrounds. During the college exploration process, the students interact with the institutional environment. Those with the backgrounds that best fit the environment apply for admission, are accepted, and then enroll.

The different individual characteristics of the students affect the college environment, and therefore will influence the students' social, academic, and extracurricular experiences. These experiences influence the amount of informal faculty contact, which together lead to educational outcomes. The educational outcomes directly determine the students' decision to persist or withdraw.

Pascarella (1980) acknowledges that although the students' experiences influence the amount of contact with faculty, so too does the institution itself. Factors such as culture, size, residency, reward structure, policies, and advising programs contribute to the faculty's willingness to spend time interacting with students outside of the classroom.

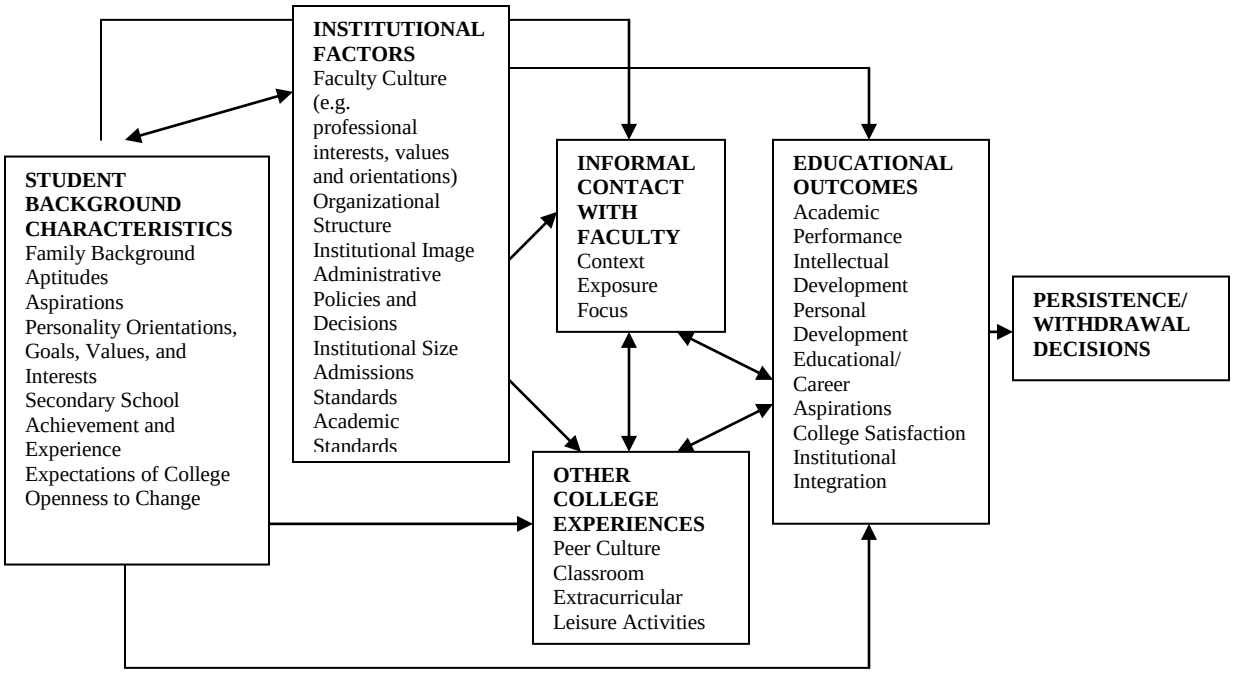

Figure 4 – Pascarella's conceptual model for research on student-faculty informal contact.

Astin's Student Involvement Model

This model is very simple, yet insightful. Astin (1984) believes that retention increases when students become invested both physically and emotionally in their campus environment, or as the model's name implies, involved. The author believes his model so straightforward that no complex diagram is required to understand it.

Astin (1984) essentially views retention as a function of a student's time. Spady (1971), Tinto (1975), and Bean and Metzger (1985) effectively employ the same concept, but Astin clearly articulates it.

According to Astin (1984), time is the most valuable resource a student has, and many demands compete for part of that: work, family, friends, activities, academics, etc. The more motivated students are, the more time and effort they will spend on learning. It is in this way that students actively choose to spend time on academics and institutional activities through which they become involved. He, like Bean (1980), does not distinguish between voluntary and involuntary dropouts because some leave due to poor grades, while others let grades slide once they make the decision to leave.

To keep students in school, programs or curriculums must draw out enough effort from students so that they learn and develop. Astin (1984) does not believe effort is merely a psychological state, but instead "the behavioral manifestation of the state" (p. 301). This is why he prefers the term involvement rather than motivation. The former is the active result of the latter.

The most important factor for involvement is residence. Students who live on campus have more time to be involved in other activities and more time for studying, as

well. They also spend more time with their peers, interacting with faculty, participating in student government, and joining fraternities or intramural sports teams.

Employment is another key factor. Students who work full time in jobs off campus have less time to devote to their studies and other college routines. Interestingly, Astin (1984) finds that part-time on-campus employment, while taking time away from studying, actually improves involvement and thus retention. Students are still on campus and interacting with peers and faculty, and relying on the college for income can create a greater attachment.

A commonality of Astin's (1984) assessment of residence and employment factors is the opportunity for contact with faculty. He believes this relates to satisfaction more strongly than any other institutional or individual component. Students who have high levels of involvement with faculty are also likely to be satisfied will all with their college experience and the institution as a whole.

In reviewing factors in the college environment that affect persistence, Astin (1984) concludes that his model accounts for every significant effect. Those environmental factors that are positive increase student involvement and those that are negative reduce it. Thus, dropout occurs due to lack of academic or extra-curricular involvement. Like Tinto's model, it is possible to find studies that support Astin's ideas (Derby & Smith, 2004) while others do not (Zhao, 1999).

Cabrera's Integrated Model

Cabrera et al's version integrates the models of Tinto and Bean (Cabrera, Nora, & Castaneda, 1993). They observed overlap between the two models and attempted to determine the extent of commonality by testing the parts of both conceptual frameworks

that do not overlap. The gap they find with Tinto's model involves the importance external factors have in influencing perceptions, preferences, and commitment, yet it has proven useful in understanding the influence of a parent or partner and financial concerns.

Using structural equation modeling, the authors found that the effect of environmental factors is more complex than Tinto theorized. This supports Bean's contention that they should be included in a model that explains persistence. Encouragement from friends and family had the strongest positive influence on institutional commitment, which in turn had a strong influence on intent to persist.

They also found the GPA was a poor measure of academic integration, as regarded in Tinto's (1975) Student Integration Model, and positioned the two as separate constructs in agreement with Bean's (1980) Student Attrition Model. As a result, GPA and intent to persist had directs paths to persistence with beta weights showing he two largest effects.

From a practical standpoint, they recommend an institution's retention efforts focus on variables that have a strong ability to predict a student's intentions to continue enrollment. The authors deduce that academic advising and other similar support services will not improve retention. Instead, enrollment strategies should focus on uniting support services to address attrition.

This model concludes that academic and social integration, intellectual development, and financial factors directly affect institutional commitment. It also recognizes that pre-college academic achievement and college GPA indirectly affect institutional commitment.

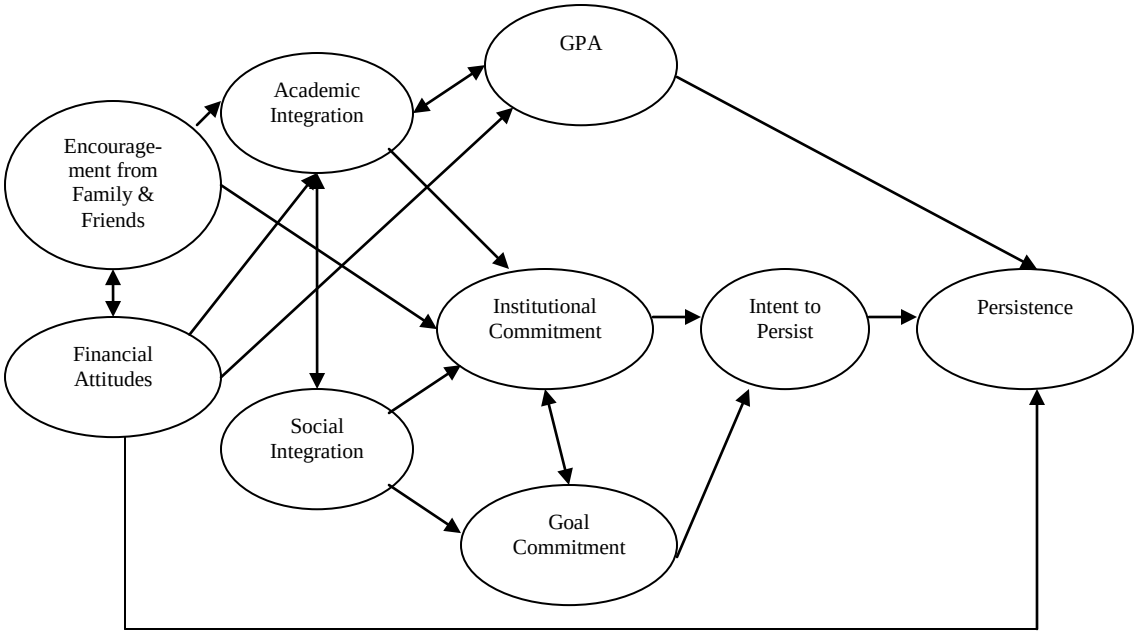

Figure 5 - Cabrera, Nora, & Castaneda's integrated model.

Model Classifications

Strauss and Volkwein (2004) present a unique way of categorizing the models. They developed four classifications to explain how several of the models fit together. The first involves using pre-college characteristics to predict retention. Astin is the major contributor to this category.

The second group views retention as a function of institutional fit. Models in this category predict that the more successfully students integrate into the college, the higher the retention rate. Spady and Tinto are the most influential authors of this type.

The third classification involves the institutional climate. According to models in this group, students are more likely to persist if they feel comfortable in their academic environment. Discrimination, violence, and percentage of minority populations can all impact retention. Pascarella, Terenzini, Cabrera, and Nora are some of the advocates of the importance of the campus climate.

The final category regards the importance of the characteristics of the institution itself. The number of students, their socioeconomic background, and the exclusivity of the college are among the factors that may affect student feelings and outcomes. Leading authors of this type of model are Pascarella and Volkwein.

Model Synthesis

While the previous approach is certainly interesting and insightful, it does not synthesize the factors from the models themselves. To make this easier to attempt, I first created Table 1 with the independent variables from all the models and checked which belong with each author's model. The purpose is to make similarities and differences readily apparent.

At first glance, it does not seem as if there is much overlap. Spady and Tinto seem similar, but Tinto included more factors. Bean and Pascarella have a few common variables, but just as many are not. Astin's model seems completely different from the rest. Even Cabrera's model, which is an integration of Tinto and Bean, uses factors that are not part of either one.

When I constructed Table 1, I was careful to list the variables exactly as each author named them. Several of the variables have sub factors that actually make up the variable itself. In an effort to find similar themes, I tried to reconstruct the comparison table by changing the author's variables into a common language. I am not presuming to interpret what each author meant to say, but instead attempting to translate the variable

Table 1 - *Comparison of Retention Model Variables*

Author	Model Name	Grade Performance	Intellectual Development	Structural Relations	Normative Congruence	Social Integration	Satisfaction	Institutional Commitment	Goal Commitment	Academic Integration	Faculty Interaction	Peer Group Interaction	[1]Environmental	Pre-college Achievement	Intent to Persist	Financial Attitudes	Encouragement from Family and Friends	Student Involvement	Background	Organizational Variables	[2]Environmental Variables	Outcome and Attitude	Other College Experiences
Spady	Dropout Process	X	X	X	X	X	X	X															
Tinto	Student Integration Model	X	X	X		X		X	X	X	X	X		X									
Bean	Synthetic Causal Model of Student Attrition														X				X	X	X	X	
Astin	Student Involvement Model												X					X					
Pascarella	Conceptual Model for Research on Student-Faculty Informal Contact										X								X	X		X	X
Cabrera	Integrated Model of Student Retention	X				X		X	X	X					X	X	X						

[1] Refers to on- or off-campus residence and employment.
[2] Refers to family approval, likelihood of marrying, ability to pay for school, etc.

names from one model to another. Since Spady was the pioneer, I used his terminology as the basis and converted the other models' variables into his verbiage.

For instance, Spady (1970) used the term *grade performance* to represent an extrinsic reward of earning grades. Any variable relating to GPA was included here. Spady (1970) used the term *intellectual development* to mean an intrinsic reward of learning and growth.

Spady (1970) termed the individual's compatibility with the institutional environment *normative congruence*. This includes matching attitudes, norms, and values. Since an individual's background affects norms and values, including financial attitudes, the *background* and *outcome and attitude* variables used by Bean (1985) and Pascarella (1980) seem to fit here, along with Cabrera's (1993) *financial attitudes* variable.

Friendship support is Spady's (1970) term for "the establishment of close relationships with others in the system" (p. 77). He later modified it to *structural relations* because he included dating, faculty contact, and extracurricular activities in his definition of the variable (Spady, 1971).

Spady (1971) defined a student's "sense of belonging and fitting in, reactions to the general warmth of interpersonal relationships on campus, and the perceived absence of pressures arising from normative differences" as *social integration* (p. 44). This concept seems to be very similar to *structural relations*, so I preferred to combine the two under the *social integration* term. Given the broad meaning, I also included Tinto's (1975) *structural relations* and *peer group interactions* variables, Bean's (1980) *environmental* variable, Astin's (1984) *student involvement* variable,

Pascarella's (1980) *other college experiences* variable, and Cabrera's (1993) *encouragement from family and friends*.

Two other terms have very similar meanings and were combined. *Intent to persist* is a variable from Bean's (1980) and Cabrera's (1993) models; and *goal commitment* is a variable from Tinto's (1975) and Cabrera's (1993) models. The name used to represent the two is the latter term.

The ranking of importance to a student to graduate from the institution is how Spady (1971) measured *institutional commitment*. Bean's (1980) and Pascarella's (1980) *organizational* variable are consistent with this measure. *Satisfaction* is Spady's (1971) measure of how content a student is with the overall college experience which Bean (1980) and Astin et al (1987) believe leads to institutional commitment.

Using these combinations and several of the components of the main factors in the models, the similarities are more evident. As depicted in Table 2, there is a large reduction in the number of variables and the overlap is easier to ascertain. Although there are a few differences, they are not substantial because so many of the authors are essentially saying the same thing.

Table 2 – *Synthesis of Modified Retention Model Variables*

Author	Model Name	Grade Performance	Intellectual Development	Normative Congruence/ Encouragement from Family and Friends	Social Integration/ Peer Group Interaction	Intent to Persist/ Goal Commitment	Institutional Commitment/ Satisfaction	Faculty Interaction	Environmental	Pre-college Achievement
Spady	Dropout Process	X	X	X	X	X	X			
Tinto	Student Integration Model	X	X		X	X	X	X		X
Bean	Synthetic Causal Model of Student Attrition	X		X	X	X	X	X	X	X
Astin	Student Involvement Model	X	X		X	X	X	X	X	X
Pascarella	Conceptual Model for Research on Student-Faculty Informal Contact	X	X	X	X	X	X	X		X
Cabrera	Integrated Model of Student Retention	X	X	X	X	X	X			

Definitions

Several authors have recognized the problem with defining attrition, the variety of definitions, and how that impacts the ability to generalize results from the studies (Astin, Korn, & Green, 1987; Derby & Smith, 2004; Pantages & Creedon, 1978; Wild & Ebbers, 2002). Many of the models and studies discussed earlier do not explain the conceptual or operational definitions employed in the research. Others do not make clear distinctions between which category of definition is employed. To avoid incorrect assumptions or interpretations, the only definitions used here are from studies that specifically state the meaning of a term and its application. Again, a table will simplify the process of sorting the information.

Table 3 – *Advising and Retention Definitions*

Term	Meaning	Author	Conceptual	Operational
Advising	A teaching function based on a negotiated agreement between the student and the teacher in which varying degrees of learning by both parties to the transaction are the product.	Crookston (1972)	X	
	Assisting in mediation of dissonance between student expectations and the actualities of the educational environment	Habley (1981)	X	
	Assisting students to realize the maximum educational benefits to them by helping them to better understand themselves and to learn to use the resources of the institution to meet their special educational needs and aspirations	Crockett (1978)	X	
	List of advisor responsibilities	Stickle	X	
Retention	Staying in school to complete entire course of study	Derby & Smith (2004)	X	
	An institution's ability to keep a student from enrollment to commencement	Berger & Lyon (2005)	X	
	Enrollment in a subsequent semester with GPA < 2.0	Wild & Ebbers (2002)		X
Retention rate	Rate of persistence	Wild & Ebbers (2002)		X
Attrition	Negative term for retention	Titley & Titley (1982)	X	
	Students who leave a college at which they are registered	Spady (1970) Bean (1980)		X
	Students who never receive a degree at any college	Spady (1970)		X
Attrition rate	Proportion of students who leave	Guttman & Olkin (1989)	X	
Persister/Persistence	Student who obtains a degree, but takes extended amount of time	Derby & Smith (2004)	X	
	Staying in school until graduation	Brower (1992) Berger & Lyon (2005)	X	
	Student who averaged three or more courses per semester within two years without completing a degree	Derby & Smith (2004)		X
	Student who completed four years worth of undergraduate work in four years even if no degree was earned	Astin, Korn, & Green (1987)		X
	Student who was still enrolled after four years even if no degree was earned	Astin, Korn, & Green (1987)		X
Leaver	Student who does not register for fall semester	Pascarella & Terenzini (1976)		X
Dropout	Students who do not achieve educational	Bonham & Luckie	X	

	goals	(1993)		
	Students who permanently leave the institution	Derby & Smith (2004)	X	
	Students who do not enroll the next semester	Bean & Metzner (1985)		X
	Students who complete less than three semesters in two years, averaged three or more courses per semester, and had GPA < 2.0	Derby & Smith (2004)		X
	Students who have not graduated in four years	Astin, Korn, & Green (1987)		X
Stop out	Students who skip one or more terms	Hoyt & Winn (2004) Derby & Smith (2004)	X	
	Students who complete more than two semesters, averaged three or more courses per semester, and had GPA < 2.0, and reenrolled after no more than three semesters off	Derby & Smith (2004)		X
Opt out	Students who meet educational goals without earning a degree	Hoyt & Winn (2004)	X	
Attainers	Students who meet educational goals without earning a degree	Terenzini (1987)		X
Transfer out	Students who transfer to another institution	Hoyt & Winn (2004)	X	

Advising

The literature lacks consensus on the definition, role, and function of advising (Raskin, 1979). Most papers that discuss studies about the topic or its role in academia fail to clarify the meaning of the term. Although it would seem that the concept of advising should be universal, the lack of actual definitions presents the same problem that exists with defining retention. All of the definitions that follow are conceptual. There were no operational definitions of advising found in the literature.

Crookston (1972) defines advising as "a teaching function based on a negotiated agreement between the student and the teacher in which varying degrees of learning by both parties to the transaction are the product" (p. 12). He believes

advisors must keep up with current trends and modern ideas to help students become self-aware.

Crockett (1978b) believes academic advising is "assisting students to realize the maximum educational benefits to them by helping them to better understand themselves and to learn to use the resources of the institution to meet their special educational needs and aspirations" (p. 3). He later expanded his definition:

> Academic advising is a developmental process which assists students in the clarification of their life/career goals and in the development of educational plans for the realization of these goals. It is a decision-making process by which students realize their maximum educational potential through communication and information exchanges with an advisor; it is ongoing, multifaceted, and the responsibility of both student and advisor. The advisor serves as a facilitator of communication, a coordinator of learning experiences through course and career planning and academic progress review, and an agent of referral to other campus agencies as necessary (as cited in Sathrum, 1992, p. 94).

Raskin (1979) reports how she uses the definition in her research. According to Raskin, advising entails assisting students in their vocational and educational concerns by understanding the institution's academic and support programs, understanding the student, and using the knowledge of the two to develop an academic plan.

Habley (1981) views advising as "providing assistance in the mediation of dissonance between student expectations and the actualities of the educational environment" (p. 46). The author believes the dissonance occurs between student goals and abilities as well as with the purpose of higher education.

Stickle (1982) does not provide an actual definition, but rather a list of the functions an advisor should perform to be effective. He believes the advisor should assist in determining a major that fits a student's interests and needs; provide

information about courses, regulations, and scheduling; review good study habits; take an interest in each individual student to ascertain unique needs and concerns; and encourage post-college career and academic options.

Retention

Conceptual Definitions

Several terms are used interchangeably to describe discontinuing higher education, so thoroughness requires discussion of them all. Attrition is the negative term and retention is the positive (Titley & Titley, 1982). Guttman and Olkin define the attrition rate as "the proportion of students who leave the program" (1989, p. 2). Others define retention as the school's ability to keep a student from enrollment to commencement (Berger & Lyon, 2005; Derby & Smith, 2004).

A student is a persister if he obtains a degree but it takes an extended amount of time (Derby & Smith, 2004). Others define persistence as staying in school until graduation (Berger & Lyon, 2005; Brower, 1992).

Dropouts are students who do not achieve their educational goals (Bonham & Luckie, 1993) or they may be students who permanently leave the institution (Derby & Smith, 2004). Students who skip one or more terms but eventually reenroll are stop-outs (Derby & Smith, 2004; Hoyt & Winn, 2004).

Opt-outs are students who achieve their educational goals without earning a degree (Hoyt & Winn, 2004). These students enroll to take a few select courses and enter with no intention of graduating or completing a program of study. Having completed the courses they wanted to take, they leave the institution and do not reenroll.

Transfer-outs are students who transfer to another institution (Hoyt & Winn, 2004). This definition does not distinguish transfers from one community college to another, from one four-year college to another, or from one community college to a four-year school. Hoyt and Winn's explanation of this term acknowledges that a transfer in the last category may leave before completing an associate degree. From the community college's perspective, only those who leave before graduating are transfer-outs. Those who transfer after completing an associate degree are graduates.

Operational Definitions

Spady (1970) provides two distinct meanings for dropout. The first refers to students who leave the college in which they are enrolled. The second refers to students who never earn a degree from any institution. The first definition has several limitations, including failing to account for those who transfer or stopout. The second definition considers those situations but, as Spady acknowledges, it is difficult to measure dropout with that meaning. Therefore, he emphasizes the first definition.

Similarly, Bean and Metzner (1985) operationalized dropout in their study as "any student who enrolls at an institution one semester but does not enroll the next semester and has not completed his or her formally declared program of study" (p. 489). They acknowledge the major limitation of this definition is that it considers stopouts to be the same as dropouts.

Derby and Smith (2004) operationalized many of these definitions for their study of community college students. They considered students successful if they completed a degree in two years. They considered students dropouts if they completed less than three semesters in two years, averaged three or more courses per

semester, and had a GPA of 2.0 or less. They considered students to be stopouts of they completed more than two semesters, averaged three or more courses per semester, had a GPA of 2.0 or higher, and reenrolled after no more than three semesters off. They considered students persistent if they averaged three or more courses per semester within two years without completing a degree.

Astin, Korn, and Green (1987), recognizing that many students do not complete a bachelor's degree in four years, employed three different definitions. The first, based on the traditional view, considers any student who has not graduated in four years to be a dropout. The second considers whether a student has completed four years worth of undergraduate work in four years. Even if the student did not earn a degree, he was a persister. The third regards a student to be a persister if he was still enrolled after four years, even if no degree was earned nor four years worth of work were completed.

Some community colleges measure retention as a rate of persistence rather than degree completion (Wild & Ebbers, 2002). This definition allows the incorporation of student goals, which is especially useful if the goal is something other than graduation. Another community college definition that the authors identify uses enrollment in a subsequent semester to define retention accompanied by a GPA of 2.0 or higher to define academic achievement.

In studies published by the National Center for Education Statistics, students who earned fewer than 10 academic credits were eliminated from the data (Calcagno, Crosta, Bailey, & Jenkins, 2006). This method attempted to identify those who enrolled for personal enrichment with no intention of graduating.

Terenzini (1987) gives us a different term. He considers students who leave prior to degree completion, but who achieve their educational goals to be attainers. This applies to students who transfer to a four-year school without completing an associate degree as well as those who take a few select courses for vocational or personal enrichment. This definition is similar to opt-outs but considers transfer-outs as well. Leavers do not register for the fall semester (Pascarella & Terenzini, 1976).

Unique Community College Factors

Before we can evaluate which definitions are best for studying the relationship between advising and retention at the community college level, we should explore the major differences between a traditional, four-year school and a community college. Several dissimilarities make it more difficult to define retention at two-year institutions (Hoyt & Winn, 2004; Schuetz, 2005; Wild & Ebbers, 2002). These differences will also be important to consider later when evaluating the variables that predict retention in order to develop a causal model.

Identifying a nontraditional student is not always easy because there is no formula to separate them from traditional students. Bean and Metzner (1985) determined that to be categorized as nontraditional, a student must have a least one of three characteristics: part-time, commuter, over 24 years of age.

Some authors assert that community college students to face major barriers to earning a degree (Dougherty, 1992; McArthur, 2005). Jones (1986) reports that for students in this setting, dropouts for nonacademic reasons are four times higher than for academic reasons. In general, community college attrition is much higher than the rate for four-year institutions (Bean & Metzner, 1985; Habley & McClanahan, 2004;

Mohammadi, 1994). Tinto (1975) believes that this is because at private institutions, the screening process takes place before admission whereas at public schools it takes place after enrollment.

The socio-economic and academic backgrounds of most community college students are different from students who attend traditional, four-year institutions. The former are more likely to be older, attend part time, be employed, live off campus, have family responsibilities, worry about finances, have lower high school achievement, have little interface with other students, and not participate in any extracurricular activities (Bean & Metzner, 1985; Mohammadi, 1994; Monroe, 2006). These students are also less likely to be academically capable, motivated, attend full time, and have adequate financial resources (Dougherty, 1992; Driscoll, 2007; Roksa & Calcagno, 2008; Tinto, 1975).

Community colleges provide the opportunity, perhaps the only opportunity, for students with these characteristics to pursue higher education. According to Bailey et al. (2004),

> The community college access mission is built on low tuition, convenient location, flexible scheduling, an open-door admissions policy, and programs and services designed to support students who may have various socio-economic and academic barriers inhibiting postsecondary success. If community colleges—or similar institutions—were not available, many of these students would not have an opportunity to attend higher education (p. 4).

Student Characteristics

Community college students, compared to their traditional school counterparts, are more likely to be the first generation to attend higher education and to come from blue-collar families who themselves have low levels of education

(Bailey et al., 2004; Bean & Metzner, 1985; Schuetz, 2005). Minority and first-generation students find community colleges to be the best opportunity for post-secondary education (Wild & Ebbers, 2002).

Nontraditional students are more likely to be older than traditional students and have family responsibilities (Bailey et al., 2004; Bean & Metzner, 1985; Wild & Ebbers, 2002). This means the issue of childcare is important.

Academically, Bean and Metzner (1985) report that "commuter students frequently possessed lower high school rank, grade averages, and scores on tests of academic ability than residential students" (p. 496). Given that many community colleges have open admissions policies, students with GEDs or no high school diploma are accepted. Windham (1995) found that those with diplomas were one-fifth less likely to dropout than those with GEDs were.

Residency

Most community college students are commuters who do not live on campus. Students who live at home spend less time on campus, participate in fewer extra-curricular activities, have less contact with faculty, and spend more time with non-college friends and family (Astin, 1984; Bean & Metzner, 1985; Christie & Dinham, 1991). The support a traditional student experiences by living among peers who are also in pursuit of a degree is not present at community colleges. In addition, residential students have a greater degree of difficulty in dropping out because to leave they must pack, leave friends, and terminate rental agreements whereas community college students can merely cease going to class (McArthur, 2005).

Adjunct Faculty

Student-faculty dealings at community colleges is different from at typical four-year schools. At public two-year colleges, 68% of instructors are adjunct faculty who teach part time (*Integrated Postsecondary Education Data System*, 2005). They usually leave campus as soon as they are finished teaching class and do not hold office hours, making it difficult for students to have the opportunity to spend time with faculty in their offices or encounter them elsewhere on campus (Schuetz, 2005).

Work

Most community college students work, at least part time (Bean & Metzner, 1985; Fralick, 1993). Several studies have found that students are more likely to leave school if they work full time (Astin, 1984; Lannai, 1997; Windham, 1995). In addition, commuter students usually have greater trepidation about paying for college (Bean & Metzner, 1985) which may result in additional hours of employment.

Student Goals

At a traditional school, most students have the same goal: to receive a bachelor's degree (Bailey et al., 2004). As previously discussed in the conceptual definitions section, community college students enter with several different types of goals. They may want to earn an associate degree, transfer to a four-year school to earn a bachelor's degree, or take courses for personal enrichment without earning any degree. Wild and Ebbers (2002) write

> Community college enrollment can mean the student is interested in a two-year associate degree, a one-year certificate or diploma in a career field, a series of classes to re-train for job competitiveness, or completion of one course for personal interest or skill force development. Students in a community college may also be testing post-secondary education in a

> convenient, inexpensive environment. These differences when explored though the mission and culture of a college tend to attract different students than are attracted to universities (p. 508).

Enrollment Status

Most of the factors that differentiate between community college students and their traditional counterparts in some way affect the enrollment status, or number of credit hours in which they enroll each semester. The former have more demands competing for time such as work, family, and commuting. They are also may be less academically capable and prepared, and have a variety of educational goals. Because of academic difficulty or enrollment in remedial classes, students may not be able to handle more than part-time schedules. Therefore, they usually take fewer credits than traditional students take (Bean & Metzner, 1985; Fralick, 1993).

Definition Evaluation

Advising

Evaluating and selecting the definition for advising is relatively easy, especially compared to the same task for retention. Although Stickle (1982) does not provide us with a definition, per se, his comprehensive description of the role of an advisor encompasses most of the components of the other scholars' definitions. He includes all parts of Crockett's (1978b; 1987), Raskin's (1979) and Habley's (1981) characterizations. The only part that is missing is Crookston's (1972) notion of advising as a teaching function.

Therefore, it is essentially not necessary to argue which definition is best for studying advising at the community college level. The best definition is a

combination of all, tweaking them to take into consideration the nature of students who attend those types of institutions.

For the purposes of developing this definition, it is important to remember that community college academic advisors must address family responsibilities, work, and student goals due to the characteristics of the student body. At traditional schools, few students work full time or off campus, and almost all share the common goal of earning a bachelor's degree.

Since most community college students work at least part time, and many have families in addition, advisors must help the student achieve some semblance of equilibrium. Determining the optimum number of credit hours in which to enroll based on the number of hours a student must work is important, as is selecting specific courses so the level of difficulty of each class complement each other. A student's academic schedule should comprise the proper number of credits and have a variety of challenge so as to balance work, school, and family life.

Helping students determine their educations goals is also different for community college advisors. There is no homogeneity of student ambitions. Some intend to transfer, some want associate degrees, and others want to complete individual classes. Since research shows that goal planning is a vital part of retention (Fralick, 1993; Habley, 1981; Metzner, 1989; Raskin, 1979), advisors should ascertain what students' goal really are and guide them into the correct course of study.

In addition to assisting in the selection of the proper academic major, students may require help in navigating the general requirements of higher education. Since

they are often of the first generation to attend college, they have no family members to guide them when it comes to purchasing books, dropping or adding classes, or even understanding the range of majors available to them.

Other times, families may burden students with unrealistic expectations. Parents may pressure their children to transfer when they are not academically capable, or fixate on a two-year graduation plan. Both are especially problematic when remedial classes are required and the student is employed.

Therefore, borrowing liberally from Crockett, Crookston, Habley, and Raskin, I propose a multi-part definition of academic advising for use at the community college level. Academic advising is

1. Assisting students in determining career and academic goals so as to recommend the correct course of study and, if appropriate, transfer options and procedures.
2. Helping students balance work, family, and academics by recommending the optimum number of credits per semester in conjunction with variety of course difficulty.
3. Having knowledge of curricula, support programs, institutional policies and regulations, and the ability to communicate them to advisees.
4. Understanding course scheduling procedures and class sequencing to aid students in developing class schedules for the upcoming semester.
5. Assisting with navigation of college in general, including mundane tasks and planning for graduation.

6. Using encounters as teaching functions to help students learn to independently plan, balance, and plot a course for life after college.

There were no operational definitions of advising found in the literature. Given that advising involves many functions, any relations with students in which any parts of the conceptual definition occur may serve as operationalizations.

Retention

To assess the various definitions and operationalizations, it is first necessary to evaluate them on a conceptual level. After determining which definitions are best, we can examine the manner in which previous empirical studies applied the terms. Finally, we can decide on the best use for them at the community college level.

The term retention describes the institution's ability to keep a student in school, whereas the term persistence describes the student's ability to stay in the institution. Upon examination, it is possible to sort all of the definitions based on whether they originate from an institutional or student perspective.

Therefore, retention and attrition represent the institutional view. As previously discussed, attrition is the negative way of looking at retention (Titley & Titley, 1982). Although they are antonyms, the former focuses on who leaves while the latter focuses on who stays.

Just as attrition is the negative view of retention, dropout is the negative way of looking at persistence. The former focuses on students who leave while the latter focuses on students who stay. Persister, attainer, leaver, dropout, stopout, opt out, and transfer out all represent the student's position.

Since this paper approaches the topic from the college's perspective, it is possible to conceptualize persisters and dropouts with this level of simplicity. Students are retained if the institution can cause them to stay and students persist if they choose to stay. Dropouts are those that leave and do not come back. This includes students who transfer out and opt out. Those students may be successful in meeting their goals, but the institution is not capable of measuring that. From a community college standpoint, transfer students are those who successfully complete their associate's degree prior to transfer. Students who transfer out without completing their course of study are the same as those who leave and do not come back.

This definition also includes students who stopout. When students who stopouts return, they are no longer dropouts. Until the time they choose to continue course work, their intentions cannot be determined. Therefore, they are included in the dropout category.

It appears possible to condense these numerous terms into one expression to describe the institutional perspective and one to describe the student view. Because it is more encouraging to look at the issue from the positive side, retention and persistence are most appropriate.

Since the institution's position is what we are considering, retention is what we will ultimately measure as this project progresses. This is the term, then, that we must operationalize. Spady (1970) recognizes that attrition occurs when a student leaves the college at which he is registered. If that is flipped to reflect the positive term, retention, we find his operational definition matches the conceptual idea of

Berger and Lyon (2005) and Derby and Smith (2004), except that there is no mention of completion or graduation. Wild and Ebbers (2002) offer a similar definition but include a minimum GPA as a criterion.

To select the most appropriate concept for using at the community college level, we must again consider those factors that make community college students different from traditional students. Since most work and many have families, the time to degree completion is longer. These institutions generally do not regard how long students stay in school, merely that they stay in school. Incorporating a time limit when measuring retention may erroneously exclude students who are persisting, but at a slow rate.

Since these students may be less academically capable, their GPAs may be low. In many community colleges, there are liberal academic suspension and reinstatement policies. Some courses in which students earn Ds may count toward graduation, and courses that students fail may not be calculated into the cumulative GPA when retaken with a passing grade. Therefore, to include GPA when operationalizing retention at the community college level requires that the bar be set so low that it may be useless.

It seems the best operational definition, then, is *enrollment in a subsequent semester*. Although, in the future, retention is what we will measure because the focus will be from the institution's view, this operationalization applies when considering the student's perspective as well: persistence occurs when a student enrolls in a subsequent semester.

Variables that Predict Retention

Researchers have concluded that retention is so complex that a single variable cannot predict or explain the phenomenon (Summers, 2003). For many variables listed on the following pages, there are studies that support predictive ability and others to refute it. As with the definitions, I divided most of the factors into two groups: individual variables and institutional variables. The final variable, college GPA, stands alone because it is a combination of both categories.

Individual Variables

Prematriculation Academic Achievement

Astin (1997) found that students' input variables could accurately predicted retention. He used high school GPA, and SAT math and verbal scores to develop a standard for institutions to use. Indeed, several other studies have reached the same conclusion (Bean, 1985; Fischbach, 1990; Pascarella & Terenzini, 1977; Spady, 1970; Tinto, 1975).

Student Characteristics

Gender. For students who complete their degrees in four years, women have higher retention rates, but among those who take longer than four years men have higher retention rates (Astin, Korn, & Green, 1987). Tinto (1975) and Mohammadi (1994) found males to have higher retention than females. Other studies found persistence to be nearly identical for males and females (Barr & Rastor, 1999; Fischbach, 1990; Pascarella & Terenzini, 1979; Wall, Lessie, & Brown, 1996).

Spady (1971) found gender differences that may be due to the era in which the study was conducted. Perhaps this was because the men naturally conformed to the male-dominated structure, while the women experienced bias. The author acknowledges that the females were "more capable of adjusting to the realities (and deprivations) of the college system" (Spady, 1971, p. 61). While Spady is careful not to call it discrimination, there is an implication that women dropout not because of academic performance but because of their unwillingness to tolerate an unfair campus environment.

Age. Barr and Rastor (1999) found that traditional age students persist longer than older students do. Wall, Lessie, and Brown (1996) found older students were more successful in earning degrees. Mohammadi (1994) did not find age to be significant in predicting retention.

Race. Barr and Rastor (1999) found Asian and Caucasian students to persist significantly longer than African American or Hispanics. Lannai (1997) found black students to have a much lower success rate than white students. Mohammadi (1994) found retention rates for whites to be only slightly higher than for blacks after the first year, but white students had lower retention rates than black students after the second year. Fischbach (1990) found the persistence rate of non-whites to not be much lower that whites, while Wall, Lessie, and Brown (1996) and Fralick (1993) found ethnicity was not related to retention.

Socioeconomic status and family educational background. Students bring with them a unique set of characteristics based on their experiences and backgrounds. It is important to consider them when measuring persistence (Pascarella, 1980).

Gerardi (1996) found that half of dropouts had parents who did not complete high school compared to 15% of graduates. He also discovered that almost two thirds of the dropouts came from families with a combined annual income of less than $20,000 compared to 19% of graduates. His study supports the importance of parental educational background and family income on predicting attrition. Tinto (1975) agrees that students of lower socioeconomic status with less educated parents are more likely to dropout.

Similarly, Bank, Slavings, and Biddle (1990) found that parental norms had a significant effect on persistence. Parents who themselves persisted have a positive impact on retention.

Boughan (1998) found that students who have adequate financial resources to pay for college are more likely to persist. Bean (1981) agrees and sees this as a part of the student's family environment and a direct influence on dropout.

Some authors believe that after starting school, background characteristics do not have as much influence as college experiences. Experiences after entry have more effect on retention than experiences before college (Strauss & Volkwein, 2004; Tinto, 2002). Once a student begins to attend college, prematriculation and background variables have little importance.

Social Integration

A student's sense of belonging, interpersonal relationships, and compatibility with peers influences the decision to stay in school (Astin, 1984; Spady, 1970). Strong social integration increases a student's desire to remain enrolled and peer support is an important component of retention (Bean, 1985; Pascarella, 1980). Astin

(1993) believes that students who spend time on campus, interact with their peers, and participate in extracurricular activities are more likely to persist.

Goal Commitment

In the discussion of model synthesis, intent to persist was combined with goal commitment because both mean similar things. Tinto (1975) believes this predicts retention because it represents the intensity with which the student expects to meet educational goals. Bean's (1985) concept of dropout syndrome measures intent to leave and he believes that, coupled with actually discussing the intention, makes it an important variable. He also believes that intent to leave is the best predictor of attrition (Bean, 1981). Astin (1993) writes that the time students spend on activities that produce academic gains is a result of the desire to achieve their goals.

Intellectual Development

Spady (1970) differentiated intellectual development from grade performance. Where grades are an extrinsic reward from the institution, intellectual development is intrinsic. It includes a student's intellectual growth, development, and satisfaction with coursework. Indeed, students who enter programs that match their educational and career goals and who tolerate the academic structure are less likely to dropout (Astin, Korn, & Green, 1987; Habley, 1981; Tinto, 1975).

Institutional Factors

Faculty Contact

Several studies have shown that the frequency of informal contact with faculty increases retention, institutional commitment, GPA, and academic integration (Bank,

Slavings, & Biddle, 1990; Christie & Dinham, 1991; Pascarella & Terenzini, 1976, 1977, 1978; Spady, 1971; Tinto, 1975). The contact helps academically and socially integrate the student, reducing the likelihood of dropout. In fact, Pascarella and Terenzini (1978) actually count student-faculty relations as a measure of academic and social integration.

Informal contact with faculty has also been shown to impact academic achievement (Pascarella, 1980; Pascarella & Terenzini, 1977, 1978; Spady, 1970). Given what scholars already know about the importance of GPA as a predictor of retention, if contact improves academic achievement, then it also improves retention. However, the directional nature of the frequency of faculty contact and the associated benefits is difficult to ascertain. Students who interact frequently may do so because they have high GPAs and are integrated into the college (Pascarella & Terenzini, 1978).

Institutional Commitment and Fit

An operational definition of institutional commitment is "a student's overall satisfaction, sense of belonging, impression of educational quality, and willingness to attend the institution again" (Strauss & Volkwein, 2004, pp. 203-204). Tinto (1975) asserts that congruence between the institution and the student is vital for retention. If the student's values do not match the institutions, the student is more likely to leave. Bean (1985) agrees that students who feel that they belong in an institution are more likely to remain there.

Academic Integration

Brower defines integration as "a function of the interaction between students' ability to agree with the expectations of the university and their ability to shape their college environment to meet their own expectations" (1992, p. 456). This is similar to expectancy theory. Tinto (1975) identified integration as one of the most important variables affecting retention and believed that students are less likely to dropout if they are sufficiently integrated. Pascarella and Chapman (1983) agree that academic integration, which is predicted by GPA, is a major factor in retention.

Astin (1984) defines involvement as "the amount of physical and psychological energy that the student devotes to the academic experience" (p. 297). He uses the term involvement in a very similar way as those who refer to integration. Barr and Rastor (1999) found that students who are involved persisted longer than those who were not. This may be due to increased integration, increased informal faculty contact, or those who join may be students that are more determined.

College GPA

Tinto (1975) reported that "with respect to grade performance, many studies have shown it to be the single most important factor in predicting persistence in college" (p. 104). Several other scholars report GPA to be a major and direct predictor of attrition or retention (Cabrera, Nora, & Castaneda, 1993; Fischbach, 1990; Mohammadi, 1994; Pascarella & Chapman, 1983; Wall, Lessie, & Brown, 1996).

New Conceptual Model

In this section, I will start by reviewing each of the variables that predict retention and the plausibility of including each in a community college model. Given the conflicting research, it is challenging to draw conclusions about predicting retention. Of the models discussed in this paper, there are studies that verify the predictive ability of each and other studies that find them useless. The same is true of the variables used to predict retention. For almost every study that finds a variable valuable, there seems to be another study to show no relationship with attrition.

Then, we will explore the link to academic advising. Based on that examination, and keeping in mind the unique characteristics of community colleges, I will present the new conceptual model.

Individual Variables

Pre-college Academic Achievement

Research strongly supports the strength of high school GPA and college-admission test scores to predict retention (Astin, 1997; Bean, 1985; Fischbach, 1990; Pascarella & Terenzini, 1977; Spady, 1970; Tinto, 1975). These are the only measures that seem distinctly different among a population of students with generally similar family characteristics and backgrounds. They reflect the student's academic potential, intellectual ability, and motivation.

In the community college setting, students who do not have sufficient academic preparation from high school find themselves in remedial classes. Often they will be required to take several semesters of developmental coursework in math and English to be able to take basic college-level classes. By that time, the students

who entered with adequate academic skills have far surpassed them in terms of credits earned. Those in the remedial group may spend more on tuition and delay entry into their full-time careers because of the additional time it takes to earn a degree. This may be so discouraging that these students may choose to leave the institution before matriculating. This is why I believe academic achievement in high school affects academic integration at the college level.

Student Characteristics

Research on age, gender, and race is so contradictory that it is difficult to draw any conclusion about their predictive values. Therefore, those variables do not warrant further discussion and will not be included in the new conceptual model.

We know that the background of the typical community college student fits a profile. Compared to their traditional school counterparts, they are more likely to be first-generation attenders, from families with lower annual incomes and levels of education, be less prepared academically, attend part time, be older, live off campus, be employed, and have family responsibilities (Bailey et al., 2004; Dougherty, 1992; Mohammadi, 1994; Schuetz, 2005; Wild & Ebbers, 2002). Since institutions cannot change the background of their students (Halpin, 1990) and the research shows a likelihood of them having similar characteristics, this will not be included in the community college retention model.

Social Integration

Social integration in community colleges may not be important because students are already integrated into the community at large (Halpin, 1990; Tinto,

1982). Many already have a local network of friends and family, belong to a church, and participate in recreational activities. Like Bean (1985), Brower (1992) also believes that students themselves are the active shapers of their socialization.

Therefore, it is not necessary for them to integrate into the specific campus community as it is for students who go away to four-year schools. The latter may be far from home, separated from their families for the first time, and know no one. In this case, social integration within the college is more crucial. Other studies have found that social integration or institutional fit at commuter colleges are not predictors of retention (Bean & Metzner, 1985; Fischbach, 1990).

Goal Commitment

Community college students have a variety of goals, not all of which involve graduation. Students who transfer to a four-year school before earning an associate's degree or take several classes for personal enrichment are technically dropouts by our operational definition. Additionally, approximately two-fifths of all community college students stop out at some point, making goals even more difficult to track (Hoyt & Winn, 2004; Schuetz, 2005).

If students are committed to their goals, they will spend time on academic activities that help them meet that goal (Astin, 1984). Goal commitment does not need representation by an individual variable. Persistence, as defined by our operational definition, and maintaining the minimum GPA to be retained reflects the student's intent to continue.

Intellectual Development

Since this variable reflects a student's ability to reconcile career and educational goals, the manifestation is the selection of the proper course of study. Because intellectual development is too difficult to measure, it will be more appropriate to view this concept from the standpoint of academic major or curriculum.

Institutional Variables

Faculty Contact

Whether formal or informal, the literature shows contact with faculty plays an important role in retention (Bank, Slavings, & Biddle, 1990; Christie & Dinham, 1991; Pascarella & Terenzini, 1977; Spady, 1971; Tinto, 1975). Therefore, we will incorporate this variable in the new model.

Institutional Commitment

There is not much research about the effect of the environment on community college attrition (Schuetz, 2005). Most community college students do not have much choice in the institution they attend. While those who go away to traditional schools may visit several to find the one they like best, community college students do not have the same choices. They do not even usually choose between a two-year or four-year school. Instead, their choice is between the community college and no higher education at all (Schuetz, 2005). Therefore, we will not include this variable in the new model.

Academic Integration

The way theorists define this variable suggest that it is really is a major factor comprised of other variables. Student-faculty interface is a measure of academic integration (Pascarella & Terenzini, 1979), as are pre-college academic achievement and curriculum according to the previous explanation. Shortly, we will see that academic advising is as well.

Grade Point Average

Both individual and institutional forces affect this factor. We already know that variables such as high school academic achievement, motivation, and employment can affect college GPA (Astin, 1997; Bean, 1985; Fischbach, 1990; Pascarella & Terenzini, 1977; Spady, 1970; Tinto, 1975). We also know that academic integration, informal faculty contact, and academic advising affect GPA (Pascarella, 1980; Pascarella & Chapman, 1983; Pascarella & Terenzini, 1978; Spady, 1970). Therefore, this variable does not belong as part of another factor and should stand alone. However, it requires a two-directional arrow to indicate that integration plays a role in GPA, but GPA also plays a role in integration (Barr & Rastor, 1999; Pascarella & Chapman, 1983; Pascarella & Terenzini, 1978).

Link of Retention and GPA to Advising

Prior to this point in the paper, we have not tied advising to improved retention and increased GPAs. Of the models we studied, few listed academic advising as a variable unto itself, but many included it as an important factor (Aitken,

1982; Astin, 1984, 1987; Bean, 1980; Bean & Metzger, 1985; Fralick, 1993: Pascarella & Terenzini, 1991; Nadler & Nadler, 1999; Tinto, 1975).

Astin, Korn, and Green (1987) believe that "advising is probably the principal tool for helping students get involved in their studies. Involvement, in turn, is one of the key elements in student achievement and retention." (p. 41). Habley (1981) finds "no other relationship more critical to retention" (p. 46). Crockett (1978a) believes that academic advising is "the cornerstone of student retention" (p. 29).

Peterson, Wagner, and Lamb (2001) conducted a survey of non-returning students to find out their perceptions of various institutional attributes. The authors found that advising was the only factor in their study that had a direct influence on student perceptions of the overall learning environment. They concluded academic advising is important because it can contribute to academic integration and play a major role in retention efforts.

Pantages and Creedon (1978) report on several studies that showed dropouts were dissatisfied with counseling services and may have stayed in school if they were improved. The authors also note that among those who dropped out, fewer than 25% had met with an advisor. They believe that advising is "of primary importance in lowering attrition" (Pantages & Creedon, 1978, p. 90). Similarly, Wetzel (1977) found that if advising services were improved dropouts were more likely to stay in school.

Academic advising aids in selection of curriculum, determined to be a predictive variable. Advisors help students clarify their educational goals and relate them to courses of study. Advisors are more knowledgeable about academic programs

and student needs than any other campus personnel, therefore advising is "the critical link in student retention" (Habley, 1981, p. 50). Fralick (1993) reported similar findings.

A link exists between advising and GPA, as well. Crockett (1978b) finds GPA and retention benefit from an advising effective program. Metzner (1989) finds that advising improves academic performance. Another study found an advising program could improve retention and GPA as well (Hesser, Pond, Lewis, & Abbott, 1996).

Stickle (1982) considers advising to be a critical function that will become more crucial with program expansion and complexity. He also finds advising must be effective to improve retention and it is a major means of faculty-student relations. Advising is a principal means for faculty members to increase their contact with students, to demonstrate a caring attitude, and to encourage persistence (Fralick, 1993).

McArthur (2005) investigated the assumption that increased faculty dealings improves retention. He specifically used academic advising as the form of contact measured. He confirmed that increasing contact and improving outreach positively influences retention.

The connection between students and advisors is one of the few consistent and long-term relationships undergraduates have within the institution with those who represent it. Students' teachers change each semester, but they usually have the same advisor. This allows the students to develop trust in their advisors and for advisors to identify students' needs and strengths, thus helping students feel more integrated (Habley, 1981; Peterson, Wagner, & Lamb, 2001). This trust leads to commitment

(Morgan & Hunt, 1994). Research evidence exists that shows students who feel their academic advising was effective are likely to have positive feelings about their college or university (Peterson, Wagner, & Lamb, 2001).

In community colleges, King (1993) considers faculty academic advising the most important service. Recalling some of the unique characteristics of those institutions and their students, the lack of opportunity for student-faculty integration at community colleges may make contact with an advisor even more important. Students miss out on opportunities to interact with faculty due to their own tendency to leave immediately after class, lack of extracurricular involvement, the lack of on campus residence, lack of on-campus employment, and the large number of adjunct instructors that do not have office hours.

Meeting with advisors may be an important source of interacting with faculty, and the only opportunity for students to spend time meeting informally. Since most faculty advise students, and even most full-time advisors are faculty, the contact that occurs during a session may be the only non-classroom time a student spends with faculty.

As previously maintained, some authors believe that once in school, background characteristics do not have as much influence as college experiences. Experiences after entry have more effect on retention than experiences before college (Strauss & Volkwein, 2004; Tinto, 2002). If this is true, then academic advising is part of what goes on after entry and therefore affects retention.

Therefore, advising is important in retention, selection of curriculum, improving or maintaining GPA, and as a source of faculty interaction. It will be included in our model as part of academic integration.

New Model

Considering the previous evaluation of the factors that predict retention and the unique characteristics of community college students, I have developed a new conceptual model. It is fairly simple and includes only a few variables. In it, four variables make up academic integration: faculty contact, academic advising, curriculum, and pre-college academic achievement. Academic integration affects GPA and retention. GPA also affects academic integration and retention.

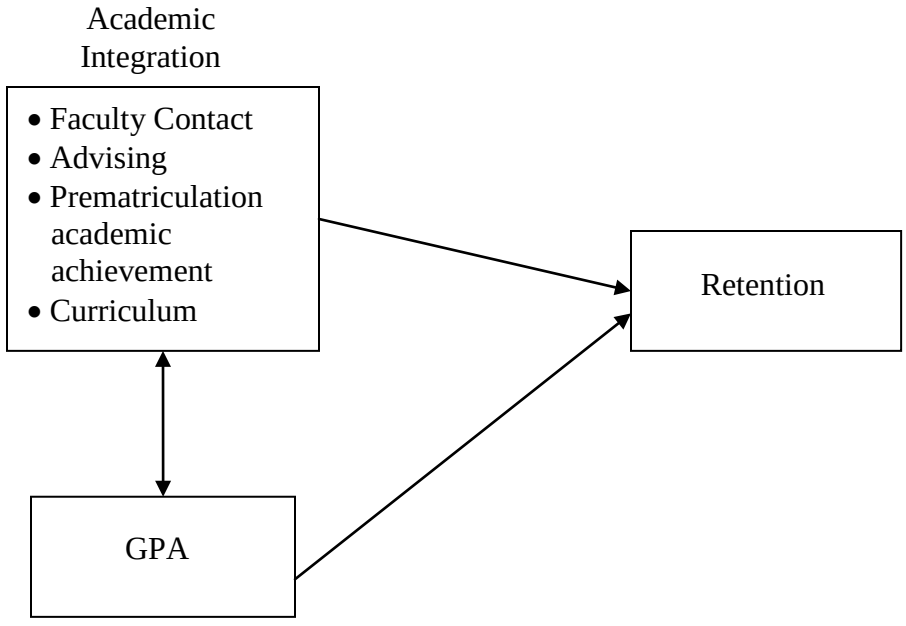

Figure 6 – New conceptual model.

Research Questions

The research questions involve determining if the quality of academic advising can accurately be measured by using student perceptions. This goes beyond measuring frequency and perceptions by tying in objective measures. If there is a relationship, we should find that if students are satisfied with advising services they will have higher GPAs and retention rates as suggested in the literature. Therefore, we may see a correlation between satisfaction and GPA and retention.

In addition to serving as a means of student-faculty interaction, advising serves other functions. Advisors are experienced instructors, familiar with the curriculum, course requirements, and ideal course sequencing order. Therefore, the presence of a relationship may indicate that perceptions of advising services satisfactorily measure the quality of those services.

To state them specifically, the two research questions are:

1. What effect, if any, does satisfaction with advising have on GPA?
2. What effect, if any, does satisfaction with advising have on retention?

Hypotheses

The main hypothesis leading to this paper is if students receive high-quality advising services, they will have higher GPAs and retention rates as suggested in the literature. Previous studies that measure only perceptions may not provide information about the quality component of this issue or be capable of measuring it. Retention rates and GPA serve as the objective measures with which I will correlate perceptions of advising to determine if the perceptions accurately indicate quality.

Therefore, the specific hypotheses are:

H1: Satisfaction with advising services will positively affect GPA.

H2: Satisfaction with advising services will positively affect retention.

Although these hypotheses are written in support of the existence of a relationship between perceptions of satisfaction and the objective measures of GPA and retention, I do not anticipate to be able to reject either null hypothesis. These were posed with the expectation that no relationship exists because perceptions of advising services do not measure the quality of services.

It is important to note that the directionality of any relationship may not be ascertained. The data collected is cross sectional, therefore it is not really possible to set a direction for any link between GPA and satisfaction.

Summary

This chapter explored the major theories about retention. After reviewing the six major models, they were combined in two ways. The first is a classification system developed by Strauss and Volkwein (2004). The second is my own synthesis in which I took the liberty of "translating" variable meanings into a common language.

This analysis reduced the number of variables from 22 to nine. It showed the models to be have great amounts of overlap. Four of the variables appear in each of the six models. For the remaining variables, all but environmental factors appeared in at least four models.

No operational definitions of advising were located. It is best conceptualized by the list of functions an advisor should perform to be effective. These include

things such as determining a major that fits a student's interests and needs; providing information about courses, regulations, and scheduling; taking an interest in each individual student to ascertain unique needs and concerns; and encouraging post-college career and academic options.

For retention, the best operational definition is *enrollment in a subsequent semester*. Although, retention is what we will measure because the focus will be from the institution's view, this operationalization applies when considering the student's perspective as well: persistence occurs when a student enrolls in a subsequent semester.

Then, from the information in all of the previous sections, I constructed my own model that features the role of advising. Based on prior research, the variables that predict retention were included or excluded, keeping the community college institution and students in mind and the relationship between advising and retention. As depicted in Figure 6, four variables make up academic integration: faculty contact, academic advising, curriculum, and pre-college academic achievement. Academic integration affects GPA and retention. GPA also affects academic integration and retention.

The research questions involve determining if student perceptions can accurately measure the quality of academic advising. The main hypothesis is students who receive high-quality advising services will have higher GPAs and retention rates. Specifically, my two hypotheses are:

H1: On average, the more satisfied students are with academic advising services, the higher their GPAs.

H2: On average, the more satisfied students are with academic advising, the greater the likelihood they will be retained.

CHAPTER III

METHODOLOGY

This study questions the validity of the existing survey methods used to evaluate academic advising and counseling. The previous chapters examined how research and the literature both predict a link between grade point average, retention and advising. However, almost all previous studies have measured perceptions or satisfaction with advising. Because of this, it seems that there is a gap in the methodology used to assess the efficacy of advising services. Even though we may be able to locate reports that assert increased used of services based on satisfaction, we still have not adequately measured service quality. This distinction is the crux of this research.

Although satisfaction may play a role in increased use of services, it is not necessarily a measure of the effectiveness of those services. When students meet with advisors, they may not be capable of objectively assessing the quality of the service they received. A student who receives accurate information from a surly advisor may report dissatisfaction, while another student who receives erroneous information from a pleasant advisor may report being satisfied.

This exploratory study used two related sets of data. The first is from a survey conducted to evaluate counseling and transfer services. The second is GPA and retention data for the students who participated in the survey. I compared the results of the assessment with more concrete measures of effective academic advising from the second data set. Based on the literature review, there is evidence that students'

GPAs and retention improve by meeting with their advisors. Therefore, those will serve as the objective data.

This research proposes to investigate the relationship between perceptions of academic advising with grade point averages, and retention. Administrators at SCPCC make policy decisions based on student perceptions of advising but there is virtually no evidence that perceptions are an accurate measure of the quality of advising services. This study seeks to explore if objective measures, such as GPA and retention, can determine if satisfaction with advising is connected to academic performance and retention. Such a connection may indicate that perceptions of advising are an adequate measure of the quality of advising services.

Research Methodology

The methodological framework employed was quantitative. I have chosen this approach because the point of the study is to discover if objective measures, rather than perceptions, are more useful for evaluating the quality of advising services. This framework is appropriate because all variables can be measured or coded in numerical terms.

Study Population

Because of necessity and IRB considerations, I was only able to draw a convenience sample. In the results chapter, I will compare the surveyed population to the SCPCC population on some key indicators, such as gender, age, and race

distribution to report how representative this sample is. This study included slightly more than three percent of the student body.

At SCPCC, 315 students completed the surveys. Of those, twelve provided student IDs that were incorrect or indecipherable. Because it was not possible to obtain GPA or retention information for those students, the responses were excluded from the study. Therefore, a total of 303 surveys were used.

In the fall of 2009, students completed surveys in the student union during day and evening class times on several different dates. All students who entered the study site were invited to participate. They were recruited by verbal and visual advertisement by me, the principal investigator, and provided with an explanation of the purpose and procedure of the study via an informed consent form. I explained the following information: participation is voluntary and the student may withdraw at any time without penalty; participants may ask for clarification of questions if needed; and that the survey should take approximately ten minutes to complete.

After signing the informed consent form, participants completed the survey. They were provided with writing instruments and appropriate seating in order to complete the questionnaires. Upon completion of the survey, I provided the participants with a debriefing letter that explains how they can contact me to obtain outcome information from the study.

Data Collection

There are two parts to the data collection for this project. The first involves the direct collection of survey data. The second involves the collection of GPA and retention data for the students who participated in the survey.

All data was coded and entered by this researcher. At the recommendation of Fink (2005), a second coding took place approximately a week after the first coding to check for consistency and assure reliability. After the data were coded a second time, I compared the two sets of codes for agreement and corrected discrepancies by referring to the completed surveys.

Part I - Survey Data Collection

For my survey, I modified an already existing measure. Personnel from the community college's Office of Institutional Research and Planning developed a questionnaire based on input from the Director of Counseling Services. It measured students' perceptions of counseling, career, and transfer services. The assessment was administered in the fall 2006 semester to over 2,000 students. This instrument served as the basis for the survey I created.

I made several modifications to adapt SCPCC's assessment for my project. First, I only included questions from the survey dealing with background information and advising services. I omitted questions about other student service areas, such as career placement and personal or mental-health counseling.

Second, I added additional questions to serve as control variables. They include inquiries about marital status, number of children, parent's occupation and

education, household income, likelihood of meeting educational goal, and number of colleges previously attended.

Third, I requested their student identification number. This was to be used solely to access student records to obtain GPA and retention information. Student IDs were never coded or entered into a database with the rest of the survey information. In addition to the new questions added to the survey, students provided information on gender, age, race, enrollment status, academic major, previous number of colleges attended, and whether or not it was their first semester.

The survey consisted of two sections. The first asked 21 questions about student characteristics. The second asked six questions with 15 sub questions about counseling/advising experiences and satisfaction. In the second set, 11 questions specifically asked students about their level of satisfaction with various aspects of advising or counseling services.

Student ID was reported as a unique 8-digit number that is assigned to a student upon enrollment. Gender was measured as a dichotomous variable (coded 0 = male, 1 = female). The current age was provided by writing in the answer. Race was measured with five categories: American Indian/Alaskan Native (coded 0); Black/African American (Non-Hispanic) (coded 1); Asian or Pacific Islander (coded 2); Hispanic (coded 3); or White (Non Hispanic) (coded 4). Enrollment status was provided by writing in the number of credits the student was taking in the current semester.

Next, several questions were asked about their personal lives. For marital status, students were asked to report whether they were single, never married (coded

0); married (coded 1); divorced (coded 2); or widowed (coded 3). The number of children was provided by writing in the answer. Their father's highest level of education was measured in six categories: less than high school (coded 0); high school/GED (coded 1); some college (coded 2); two-year college degree (coded 3); four-year college degree (coded 4); or advanced degree (coded 5). Father's occupation was provided by writing in the answer. Based on two existing classification systems (Eckhardt, 1975; Weiss, 1960), occupation was coded as 0 = unskilled/unemployed; 1 = farm related; 2 = semi skilled; 3 = skilled; 4 = clerical/sales; 5 = small business; 6 = minor professional; 7 = large business; or 8 = major professional.

The next two questions asked for mother's highest level of education and occupation. Responses were collected and coded in the same way as the they were for the same questions about the father.

Eight categories were provided for students to supply family household income: less than $15,000 (coded 0); $15,000 - $24,999 (coded 1); $25,000 - $34,999 (coded 2); $35,000 - $49,999 (coded 3); $50,000 - $74,999 (coded 4); $75,000 - $99,999 (coded 5); $100,000 - $149,999 (coded 6); and more than $150,000 (coded 7). Students were asked about their own employment status as the total number of hours they work for all jobs they may have. Response options were 10 hours or less (coded 0); 11 – 20 hours (coded 1); 21 – 30 hours (coded 2); more than 30 hours (coded 3); not employed (coded 4); or retired (coded 5).

Students were asked what time they come to class and given the following four options from which to select: Days (coded 0); Nights (coded 1); Weekends

(coded 2); or Combination of day, night, and/or weekend (coded 3). Their current major was obtained by writing in the answer. Major was coded based on the number SCPCC assigns to each.

To assess intention to retain, student were asked about their educational goals and likelihood of achieving them. They were asked whether their objective is to complete an associate degree and transfer (coded 0); complete an associate degree, certificate, or diploma and enter the job market (coded 1); complete course(s) without degree and transfer (coded 2); complete course(s) without degree for specific career or trade skills (coded 3); or complete course(s) without degree for enrichment or other personal reasons (coded 4). Their expectation of meeting their educational goal was measured by yes (coded 1) or no (coded 0) responses. If they responded yes, they were asked to supply their likelihood of meeting it by answering using a seven-point Likert Scale ranging from "Very Unlikely" (coded 0) to "Very Likely" (coded 6).

The final questions about student characteristics asked them to write in their GPA and the number of colleges they previously attended. Last, they were asked if it was their first semester at SCPCC as a yes (coded 1) or no (coded 0) question.

The remaining survey questions were about their experiences or satisfaction with advising. Students answered a yes (coded 1) or no (coded 0) question about whether they met with an advisor to discuss the current term. If they did not, they were asked to provide the reason by choosing one of five options: couldn't secure an appointment that fit my schedule (coded 0); I didn't need help (coded 1); I was too busy (coded 2); counselor was not helpful in past appointments (coded 3); or other (please specify) (coded 4).

Students who indicated that they did meet with an advisor were asked whether this individual was their assigned advisor by checking yes (coded 1) or no (coded 0). They were asked if they had difficulty obtaining an appointment as a yes or no question. If they answered yes, they were invited to describe the difficulty.

Then they were asked five questions about their satisfaction with their most recent meeting with their advisor. These were answered with a series of seven-point Likert Scales ranging from "Very Dissatisfied" (coded 0) to "Very Satisfied" (coded 6). These questions covered time allowed to address questions and concerns; amount of privacy offered during meeting; counselor/advisor's desire to listen and work to address questions, concerns, and needs; counselor/advisor's ability to address concerns or questions; and accuracy of information provided.

Next, students were asked a set of six questions about their satisfaction with the services provided by their counselor or advisor. These were answered using the same seven-point scale with an additional category of "Not Applicable." These questions listed different types of services that may possibly be provided in an advising meeting such as interpretation of placement test results; counseling related to academic difficulties; career information; course selection and scheduling; graduation/program completion requirements; and transfer requirements/program information. Students were asked to rate their level of satisfaction with the services provided about each of the six categories.

Two final questions were asked about counselor/advisor follow up and contact method. If additional information or answers were necessary, students were if it was provided or not. The most frequent method of contacting an advisor/counselor was

collected by providing four options: walk in (coded 0); appointment (coded 1); phone call (coded 2); or email (coded 3).

Part II - Objective Data Collection

In January 2010, I used SCPCCs administrative software system, SCT Banner, to look up GPA and retention information for the students who participated in the survey. On each assessment, I recorded the actual GPA and NR or R, to denote not retained (coded 0) or retained (coded 1), respectively. I based my notation on my previously created definition of retention, enrollment in a subsequent semester. Students enrolled in the spring 2010 semester or who had graduated in fall 2009 were considered retained.

Variables and Definitions

Independent Variables

Satisfaction with Advising

This variable was measured with a seven-point Likert-like Scale that included seven items, each of which ranged from “Very Satisfied” to “Very Dissatisfied.” Students were asked a series of questions about their satisfaction with their most recent meeting and then a series of questions about their satisfaction with the services provided. I conducted a factor analysis, which will be reported in the results chapter, which revealed one dimension with a Cronbach’s alpha of 0.95.

Dependent Variables

Retention

In the literature review section of this paper, I explored how to define retention. For this purpose, the best definition is enrollment in a subsequent semester. I measured this variable in a binary manner (retained or not retained) with one modification: graduates were counted as successfully retained individuals.

The goal of the community college is to keep students enrolled until they graduate. Successful completion of an associate's degree indicates successful retention. Therefore, if a student graduates within the timeframe measured, he was considered to be retained.

Grade Point Average

GPA was measured by dividing the total number of grade points earned by the total number of credit hours attempted. SCPCC's Banner System computed this number. For the sake of confirming accuracy, I manually checked several of the calculations and unsurprisingly found them all to be correct. Therefore, I used the computer output to collect this variable.

The traditional zero-to-four range was used. For this research, I obtained the cumulative GPA at the end of the fall 2009 semester because it coincided with when the survey was administered.

Control Variables

A number of control variables were included in the survey: gender, age, race, marital status, number of children, parent's occupation and education, household

income, enrollment status, academic major, likelihood of meeting educational goal, number of colleges previously attended, and whether or not it was the student's first semester. These were measured as previously described in the section on survey data collection.

Because several of these had responses in predominantly one category, they were collapsed. For race, most students reported being white while very few indicated they were Native American or Asian. This variable was reduced to "white" (coded 0) or "non white" (coded 1).

The responses to the question about marital status were collapsed to "never married" (coded 0) or "married" (coded 1). The responses to the question about the student's number of children was collapsed to "no children" (coded 0) or "one or more children" (coded 1). Lastly, responses to the question about the previous number of colleges attended were collapsed to "none" (coded 0) or "one or more" (coded 1).

Table 4 lists the list of variables which were controlled for during data analysis.

Table 4 – *Control Variables*

Gender
Age
Race – White or Non White
Enrollment Status
Marital Status – Never Married or Previously Married
Number of Children – None or One or More
Father's Level of Education
Father's Occupation
Mother's Level of Education
Mother's Occupation
Family Income
Employment Status
Time of Class
Academic Division
Educational Goal
Intention of Meeting Goal
Likelihood of Meeting Goal
Number of Previous Colleges Attended – None or One or More
Continuing Student Status

Data Analysis

I used the SPSS statistical software package to analyze the data. I computed descriptive statistics first. Exploratory factor analysis was used to explore the dimensions present in the data pertaining to satisfaction with advising. I then computed Cronbach's coefficient alpha to measure the reliability (internal consistency) of the satisfaction with advising scale(s). The exploratory factor analysis and reliability analysis were conducted to be able to justify the use of average satisfaction scores rather than assessing each question individually.

Next, regression techniques were employed to explore the relationships, if any, between the dependent and independent variables while controlling for possible

confounding variables. Direction was predicted for each variable so a .05 one-tailed level of significance was used. Since GPA is a continuous dependent variable, a hierarchical ordinary least squares (OLS) multiple regression was the most appropriate statistical analysis to determine which variables were significant predictors of GPA. Retention is a dichotomous variable so binary logistic regression was used to ascertain what variables, including satisfaction with advising, were important predictors of retention. Again, a hierarchical approach was used, in which I regressed retention on the control variables first and then entered the satisfaction with advising scale(s).

Ethical Considerations

The survey data were collected anonymously. Student IDs were used to collect the dependent variables, but the IDs were not recorded in the spreadsheet with the demographic data. The completed surveys were kept in a locked secure location accessible only by this investigator. IRB approved this research and it followed the protocol required for the protection of human subjects.

Summary of Methods Chapter

This exploratory study uses two related sets of data. The first is from a survey conducted to evaluate counseling and transfer services. For the second, cumulative GPA and retention status data were collected for the students who were surveyed. The purpose of the research is to examine whether satisfaction with advising is correlated with objective measures of educational performance, such as GPA and retention, net of controls.

This research employed a quantitative methodological framework. Using SPSS as the computer software, I calculated descriptive statistics, conducted an exploratory factor analysis to examine underlying dimensions within the satisfaction questions, and computed Cronbach's alpha to assess internal consistency.

Since GPA is a continuous variable, hierarchical OLS multiple regression is the most appropriate statistical analysis. Retention is a dichotomous variable so binary logistic regression was selected as the method for analysis.

CHAPTER IV

FINDINGS

This chapter reports on the results from my data analysis. The descriptive statistics are discussed first, followed by the exploratory factor analysis, the reliability analysis, and then the multivariate analyses.

The demographics and student characteristics indicate a range of students were surveyed, but the population more closely represents traditional college students. This research intends to explore whether perceptions can accurately measure quality of advising services not to assess the college's services or replicate the previous study. Employing gender, enrollment status, and minority status, the survey sample was a fairly accurate reflection of the entire college population for the fall 2009 term. Although younger students were over sampled, the convenience sample is somewhat representative of SCPCC's student body.

Results of questions about the student use of counseling and advising services and their satisfaction scores are reported next. The dependent variables are subsequently described.

Trying to draw conclusions by evaluating each individual satisfaction question proved difficult. To determine if the scores could be combined, exploratory factor analysis was used to examine the underlying dimensions. Cronbach's alpha was also calculated to measure internal consistency.

To address the research questions about how satisfaction with advising impacts GPA, hierarchical OLS multiple regression was used as the statistical test because it allows the researcher to control for a number of additional variables. All of

the control variables were entered together in one block and then the independent variable was entered in a separate block.

By entering variables in a predetermined order, the control variables are forced into the analysis. This removes the possible effects of those variables, allowing for examination of the independent variable's ability to explain variance in the dependent variable, net of controls.

To analyze how satisfaction with advising relates to retention, a hierarchical binary logistic regression was deemed to be the most appropriate statistical method. This approach assumes that the relationship between the independent and dependent variables is non-linear.

Variables were entered in two time-ordered blocks to explore the predictive ability of each set. All of the control variables were entered together in one block and then the independent variable was entered in a separate block.

Descriptive Statistics

Student Demographic Characteristics

As shown in Table 5, the gender of those surveyed was almost evenly split between males (47.5%) and females (52.5%). The average age was 22.5 years old. The percentage of each group is as follows: 60.1% for traditional-age community college students (up to 20 years old); 22.4% for traditional-age college students (21 to 25 years); 7.3% for young non-traditional age (26 to 30 years); and 10.2% for older non-traditional age (31 years or older).

The vast majority of the students surveyed were white (68.3%). For the rest of the sample, Indians/Alaskan natives represented 2.3%; Blacks represented 17.5%; Asians represented 5.9%; and Hispanics represented 5.9%. When minority racial groups were combined, minority individuals accounted for 31.7% of the sample.

Over two-thirds of participants were enrolled as full-time students. The average number of credit hours in which students were enrolled was approximately 10.9. This variable was coded and sorted into three categories: 0 – 6 credits; 7 to 11 credits; and 12 or more credits. The respective approximate percentages for each group were 17.2%, 13.9%, and 69.0 %.

The results for marital status were unsurprising. Almost all students were single and had never been married (88.4%). Married students represented for 5.6% of the respondents, divorcees represented 4.6%, and widowers represented 1.0%.

Similarly, most students had no children. They accounted for 85.1% of the respondents. Of the approximately 15% who had children, 21 students had one child and 24 students had two or more.

Over two-fifths of the students' parents did not attend college (43.4%). Approximately 30.7% of parents attended some college or earned an associate degree. Slightly over a quarter (25.9%) earned a bachelor's or advanced degree.

Parental employment closely paralleled their education. Over two-fifths of the student's parents were unemployed or engaged in semi-skilled jobs. Approximately 29.7% of parents worked in skilled, clerical, or sales occupations. Over a quarter of parents (28.7%) were business owners or working professionals.

Family income was asked categorically. Approximately a quarter earned less than $25,000 (22.8%); a quarter earned $25,000 to $49,999 (29.4%); a quarter earned $50,000 to $74,999 (25.4%), and a quarter earned over $75,000 (22.4%).

Over two-thirds of students themselves work (71.2%). Of those who are employed (n=216), 82.9% work at least 11 hours per week while 44% work more than 20 hours per week. Approximately two-thirds of students attended day classes (69.3%) and over a quarter attended a combination of day and evening classes (25.1%).

The academic major selected by the student was collected in the survey. These were coded by the official major code assigned by SCPCC. Because over 180 majors are offered, these were sorted and coded by the division to which each major belongs. Students who are in the undecided or general studies division represented 17.2% of respondents; students in the business division represented 21.1; students in the social science division represented 32.0%; and students in the health and science division represented 29.7%.

Almost all students expressed persistence as their educational goal (98.3%). Students were initially given five choices from which to select their educational goal: (1) complete an associate's degree and transfer; (2) complete an associate's degree and enter the job market; (3) complete course(s) without degree and transfer; (4) complete course(s) without degree for specific career or trade skills; or (5) complete course(s) without degree for enrichment or other personal reasons. Those who

Table 5 – *Student Demographic Characteristics*

		N	Percentage
Gender			
	Male	144	47.5
	Female	159	52.5
Grouped Age			
	0-20 years old	182	60.1
	21-25 years old	68	22.4
	26-30 years old	22	7.3
	31-99 years old	31	10.2
Marital Status			
	Single, never married	268	88.4
	Married	18	5.9
	Divorced	14	4.6
	Widowed	3	1.0
Race			
	American Indian/Alaskan Native	7	2.3
	Black/African American (Non Hispanic)	53	17.5
	Asian/Pacific Islander	18	5.9
	Hispanic	18	5.9
	White	207	68.3
Number of Children			
	0	258	85.1
	1	21	6.9
	2	12	4.0
	3	5	1.7
	4	5	1.7
	5	2	0.7
Father's Education			
	Less than high school	21	6.9
	High School/GED	117	38.6
	Some college	61	20.1
	2-Year college degree	27	8.9
	4-Year college degree	53	17.5
	Advanced degree	24	7.9

Table 5 – *Student Demographic Characteristics (continued)*

		N	Percentage
Father's Job			
	Unskilled/unemployed	79	26.1
	Farm-related	2	0.7
	Semi skilled	32	10.6
	Skilled	48	15.8
	Clerical/sales	57	18.8
	Small Business owner	11	3.6
	Minor professional	60	19.8
	Major professional	14	4.6
Mother's Education			
	Less than high school	12	4.0
	High school/GED	113	37.3
	Some college	58	19.1
	2-Year college degree	40	13.2
	4-Year college degree	59	19.5
	Advanced degree	21	6.9
Mother's Job			
	Unskilled/unemployed	91	30.0
	Semi skilled	48	15.8
	Skilled	17	5.6
	Clerical/sales	58	19.1
	Small business owner	6	2.0
	Minor professional	77	25.4
	Major professional	6	2.0
Family Household Income			
	Less than $15,000	27	8.9
	$15,000-$24,999	42	13.9
	$25,000-$34,999	42	13.9
	$35,000-$49,999	47	15.5
	$50,000-74,999	77	25.4
	$75,000-$99,999	38	12.5
	$100,000-$149,999	19	6.3
	More than $150,000	11	3.6

Table 5 – *Student Demographic Characteristics (continued)*

		N	Percentage
Employment Status			
	10 hours or less	37	12.2
	11-20 hours	84	27.7
	21-30 hours	59	19.5
	More than 30 hours	36	11.9
	Not employed	85	28.1
	Retired	2	0.7
Class Time			
	Days	210	69.3
	Nights	17	5.6
	Combination	76	25.1
Academic Division			
	Undecided/General Studies	52	17.2
	Business	64	21.1
	Social Sciences	97	32.0
	Health and Sciences	90	29.7
Educational Goal			
	Complete associate and transfer	166	54.8
	Complete Associate and enter job market	59	19.5
	Complete courses without degree and transfer	73	24.1
	Complete courses without degree for specific career/skills	2	0.7
	Complete courses without degree for enrichment/personal reasons	3	1.0
Expectation of Meeting Goal			
	No	7	2.3
	Yes	296	97.7
Likelihood of Meeting Goal			
	Very unlikely	5	1.7
	Unlikely	3	1.0
	Somewhat unlikely	1	0.3
	Unsure	13	4.3
	Somewhat likely	41	13.5
	Likely	34	11.2
	Very likely	206	68.0

Table 5 – *Student Demographic Characteristics (continued)*

	N	Percentage
Grouped Enrollment Status		
0-6 credit hours	52	17.2
7-11 credit hours	42	13.9
12-19 credit hours	209	69.0
Number of Previous Colleges Attended		
0	227	74.9
1	51	16.8
2	16	5.3
3	4	1.3
4	4	1.3
5	1	0.3
Continuing Student Status		
Continuing	165	54.5
New	138	45.5

selected choices one or two, indicating they had a goal of earning a degree at SCPCC, accounted for 74.3%. Almost another quarter (24.1%) intend to continue their educations but without graduating from the community college before transferring to another institution. Only five students (1.7) were taking classes for personal reasons.

When asked if students expected to meet their educational goal, almost all responded in the affirmative (97.7%). Two-thirds (67.7%) felt very likely to reach their goal, a quarter (25.0%) felt likely to reach their goal, and 7.3% felt unsure or unlikely to reach their goal.

Almost three-fourths (74.9%) of students had not attended any college other than SCPCC while 25.1% had attended at least one other. Lastly, the number of first

semester students and returning students was almost equal, with a slightly higher percentage of the latter: 45.5% and 54.5% respectively.

Comparison of Study Population to SCPCC's Student Body

Slightly more than half of the surveyed students were female (52.5%). This proportion was lower than the college-wide population of 58.5% for the fall 2009 semester. Almost two-thirds (64%) of the overall college population was enrolled full time. Of the students who participated on the survey, 69% were considered to have full-time status.

When combining minority racial groups, approximately 32% of those surveyed were minority individuals. College wide, the proportion of minorities was approximately 25%. The average age of students who completed the survey was 22.4 years. This was younger the average age of SCPCC's student body, which is 26.6 years.

Employing gender, enrollment status, and minority status, the survey sample was a fairly accurate reflection of the entire college population for the fall 2009 term. Although younger students were over sampled, the convenience sample is somewhat representative of SCPCC's student body.

Student Use of Advising Services

The majority of students surveyed met with a counselor or advisor to discuss the fall 2009 term, the term during which the survey was administered. As Table 6 shows, over two-thirds (71.3%) met with an advisor. Of those that did, slightly more than half (51.2%) reported meeting with their assigned advisor. The remaining

students either did not meet with their assigned advisor or were unsure whether they did or not.

Most students had no difficulty obtaining an appointment (84.7%). The majority (83.4%) reported that if their advisor was unavailable when contact was attempted, he or she responded in a timely manner.

Of those who did not meet with an advisor to discuss the fall 2009 semester, the most commonly reported reason was that the student did not need help (64.8%). The remainder could not get an appointment (7.7%), were too busy (12.1%), or had found their advisor unhelpful in the past (12.1%).

When asked about the method used most often to obtain advising services, almost four-fifths (79.2%) preferred in-person contact, either as a walk-in or by appointment. The remaining fifth (20.1%) most frequently used email or phone assistance.

Table 6 – *Student Use of Advising Services*

	N	Percentage
Met with Advisor to discuss fall 2009 term		
No	87	28.7
Yes	216	71.3
Reason for Not Meeting with Advisor		
Couldn't secure appointment that fit schedule	7	2.3
Didn't need help	59	19.5
Too busy	13	4.3
Counselor/advisor previously unhelpful	11	3.6
Other	0	0.0
Met with Assigned Advisor		
No	74	24.4
Yes	130	42.9
Experienced Difficulty Obtaining an Appointment		
No	216	71.3
Yes	39	12.9
Preferred Advising Method		
Walk in	140	46.2
Appointment	100	33.0
Phone call	15	5.0
Email	48	15.8

Student Satisfaction with Advising Services

This section examined student perceptions of advising services through two sets of questions. The first set, questions 24a through 24e, explored satisfaction with the meeting itself. The second set, questions 25a through 25f, explored satisfaction with the services provided at that meeting. The results are presented in Table 7.

Satisfaction with Meeting

When asked about the amount of time allowed to address concerns and questions, five out of six students (84.5%) expressed satisfaction. A similar number (86.1%) were satisfied with the amount of privacy afforded them during their meeting.

Students reported almost equal amounts of satisfaction with the advisor or counselor's desire to listen and help (82.3%) and that person's ability to address questions or concerns (82.2%). Four-fifths (80.5%) were satisfied with the accuracy of the information they received.

Satisfaction with Services

Satisfaction scores were lower for this set of questions. Approximately two-thirds of students were satisfied with their counselor or advisor's interpretation of placement test results (67.7%), with counseling related to academic difficulties (67.2%) and with career information (66.7%). Over three-quarters (76.9%) were satisfied with course selection and scheduling.

Over three-fifths (62.7%) of students were satisfied with services related to graduation or program completion requirements. A slightly higher amount (65.0%) expressed satisfaction with services related to transfer requirements or transfer program information.

Table 7 – *Satisfaction with Advising Survey Results*

Question Number	Question Description	Average Score		Very Satisified	Satisified	Somewhat Satisified	Neutral	Somewhat Unsatisified	Unsatisified	Very Unsatisified	Not Applicable
24a-e	Level of satisfaction at most recent meeting with counselor or advisor	5.95	n	819	178	262	176	46	20	14	0
			%	54.1	11.7	17.3	11.6	3.0	1.3	0.9	0.0
24a.	Time allowed to address questions and concerns	5.92	n	157	36	63	33	7	5	2	0
			%	51.8	11.9	20.8	10.9	2.3	1.7	0.7	0.0
24b.	Amount of privacy during meeting	6.10	n	180	30	51	31	7	3	1	0
			%	59.4	9.9	16.8	10.2	2.3	1.0	0.3	0.0
24c.	Advisor's desire to listen and address concerns and questions	5.93	n	165	35	49	35	11	6	2	0
			%	54.5	11.6	16.2	11.6	3.6	2.0	0.7	0.0
24d.	Advisor's ability to address concerns and questions	5.91	n	159	42	48	36	11	3	4	0
			%	52.5	13.9	15.8	11.9	3.6	1.0	1.3	0.0
24e.	Accuracy of information provided	5.86	n	158	35	51	41	10	3	5	0
			%	52.1	11.6	16.8	13.5	3.3	1.0	1.7	0.0
25a-f	Level of satisfaction with services provided by counselor or advisor	5.18	n	673	241	307	347	80	26	38	106
			%	37.0	13.3	16.9	19.1	4.4	1.4	2.1	5.8
25a.	Interpretation of placement test results	5.08	n	98	51	55	53	14	3	11	18
			%	32.3	16.8	18.2	17.5	4.6	1.0	3.6	5.9
25b.	Counseling related to academic difficulties	5.13	n	109	39	54	63	7	5	4	22
			%	36.0	12.9	17.8	20.8	2.3	1.7	1.3	7.3
25c.	Career information	5.08	n	105	36	59	58	16	3	6	20
			%	34.7	11.9	19.5	19.1	5.3	1.0	2.0	6.6
25d.	Course selection and scheduling	5.60	n	135	46	51	41	14	5	5	6
			%	44.6	15.2	16.8	13.5	4.6	1.7	1.7	2.0
25e.	Graduation/program completion requirements	5.04	n	112	34	42	69	13	4	5	24
			%	37.0	11.2	13.9	22.8	4.3	1.3	1.7	7.9
25f.	Transfer requirements or program information	5.14	n	114	35	46	63	16	6	7	16
			%	37.6	11.6	15.2	20.8	5.3	2.0	2.3	5.3
	Overall Satisfaction	5.53	n	1492	419	569	523	126	46	52	106
			%	44.8	12.6	17.1	15.7	3.8	1.4	1.6	3.2

[a] These scores are for purposes of comparison and do not equal response codings.

Dependent Variables

Approximately five out of six students (83.2%) were retained from the fall semester. Only 51 students did not reenroll in the spring 2010 semester. The average GPA was 2.51, and the majority of students (76.2%) had a GPA of 2.0 or higher.

Table 8 – *Retention and GPA*

		N	Percentage
Retained			
	No	51	16.8
	Yes	252	83.2
Grouped GPA			
	0.000 - 0.999	26	8.6
	1.000 - 1.999	46	15.2
	2.000 - 2.999	114	37.6
	3.000 - 4.000	117	38.6

Factor Analysis

Reducing satisfaction scores to an overall average or average for each set of questions would aid in assessing the survey results. Use of a single scale score cannot be determined as acceptable without first examining the dimensionality of the questions and sub questions.

I used maximum likelihood extraction and list-wise deletion of data for the exploratory factor analysis of the eleven satisfaction items. The number of factors to rotate was based on the scree plot and the factor solution. There are several methods for determining the number of factors to extract. A common rule is to ignore principal components with eigenvalues lower than one (Hamilton, 1992). A more subjective method is to visually examine the scree plot to look for a position where the eigenvalues level off and include the values before that point (Green, 2005). In this case, both methods were used.

Based on the scree plot shown in Figure 7, one factor was rotated obliquely using the promax method. This method selected because of the correlations between satisfaction questions, as shown in Table 9.

Table 9 - *Satisfaction Question Correlations*

	24a	24b	24c	24d	24e	25a	25b	25c	25d	25e	25f
24a	1.000	.701	.771	.749	.685	.320	.612	.568	.605	.569	.588
24b	.701	1.000	.728	.689	.656	.354	.557	.499	.579	.478	.455
24c	.771	.728	1.000	.840	.727	.373	.618	.515	.674	.605	.601
24d	.749	.689	.840	1.000	.830	.372	.616	.552	.721	.586	.609
24e	.685	.656	.727	.830	1.000	.387	.583	.585	.677	.616	.632
25a	.320	.354	.373	.372	.387	1.000	.660	.538	.436	.507	.516
25b	.612	.557	.618	.616	.583	.660	1.000	.698	.594	.627	.669
25c	.568	.499	.515	.552	.585	.538	.698	1.000	.644	.675	.666
25d	.605	.579	.674	.721	.677	.436	.594	.644	1.000	.683	.660
25e	.569	.478	.605	.586	.616	.507	.627	.675	.683	1.000	.829
25f	.588	.455	.601	.609	.632	.516	.669	.666	.660	.829	1.000

An inspection of the scree plot, shown in Figure 7, indicates a clear break after the first component.

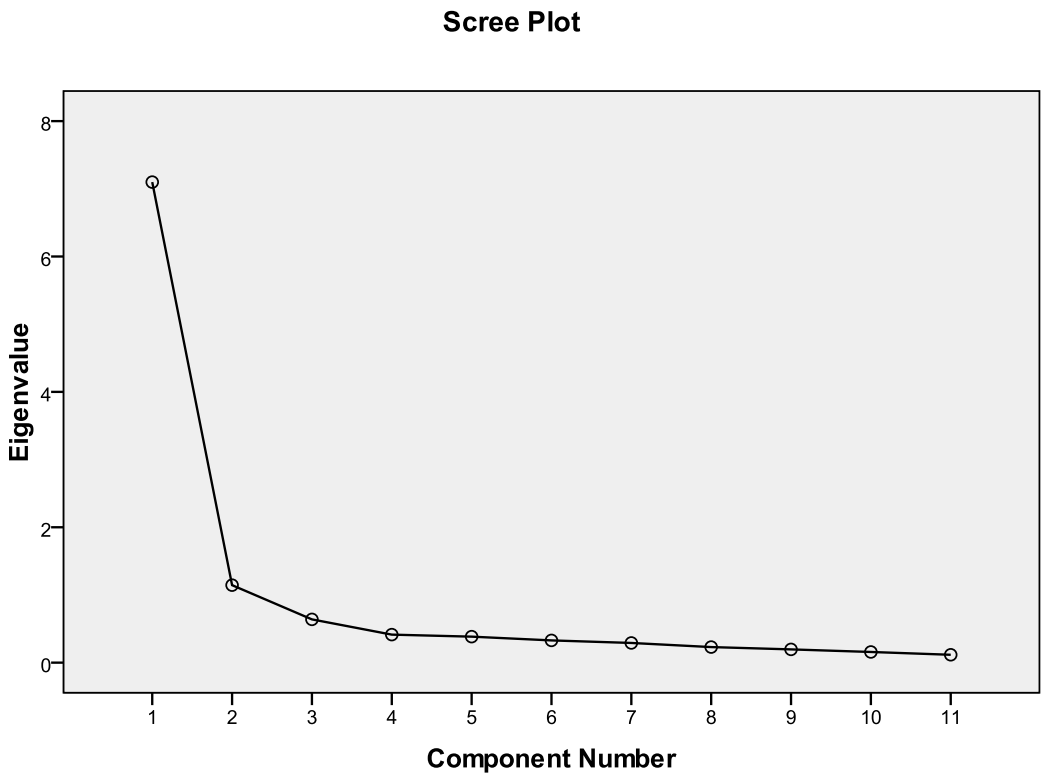

Figure 7 – Factor analysis scree plot.

The first two components had eigenvalues higher than one (7.099, 1.145). However, the component matrix shown in Table 10 indicates most items load quite strongly on the first factor. Fewer items load on the second and most of those load weakly. This suggests a one-factor solution is most appropriate.

Table 10 – *Component Matrix for the Satisfaction with Advising Items*

	Component	
	1	2
24d	.867	-.322
24c	.853	-.327
24e	.844	
25d	.829	
24a	.820	-.305
25f	.820	
25b	.815	
25e	.814	
25c	.783	.314
24b	.761	-.353
25a	.599	.576

Based on the results of the factor analysis, the measure is unidimensional. It also confirms that there are no additional overlooked underlying dimensions. Therefore, a single average satisfaction score was created.

Cronbach's Alpha

Item analyses were conducted on the 11 items used to measure student satisfaction with advising services. Cronbach's alpha was calculated as a measure of internal consistency to decide which items to exclude. Selecting a set of questions that yield a summed score related to satisfaction is the objective.

The alpha was 0.95, which is very high and indicates very good reliability. Scales intended for individual diagnostic purposes should have reliabilities over 0.90 (DeVellis, 2003). Table 11 shows the initial results.

Table 11 – *Reliability Analysis for All Satisfaction with Advising Items, Alpha = .95*

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
24a	47.04	138.931	.768	.696	.941
24b	46.92	141.828	.714	.655	.943
24c	47.02	137.395	.805	.796	.940
24d	47.04	136.919	.820	.835	.939
24e	47.07	136.577	.815	.759	.939
25a	47.63	140.867	.564	.504	.950
25b	47.45	136.786	.787	.693	.940
25c	47.52	136.883	.737	.639	.942
25d	47.22	135.556	.815	.700	.939
25e	47.45	134.786	.796	.735	.940
25f	47.52	133.033	.802	.745	.940

Question 25a had the lowest correlated item – total correlation and indicated potential elimination. The reliability analysis was repeated without that question. The results, shown in Table 12, indicate no further revision is necessary.

Table 12 – *Reliability Analysis for Satisfaction with Advising without Question 25a.*

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
24a	42.57	116.791	.795	.697	.944
24b	42.45	119.673	.728	.659	.946
24c	42.54	115.533	.826	.801	.942
24d	42.56	115.111	.842	.836	.942
24e	42.59	114.890	.833	.765	.942
25b	42.97	116.509	.756	.624	.945
25c	43.04	116.209	.720	.632	.947
25d	42.72	115.035	.808	.685	.943
25e	42.97	114.595	.775	.726	.945
25f	43.03	112.980	.783	.741	.944

The eliminated question asks about student satisfaction with the counselor or advisor's interpretation of placement test results. It is doubtful that students are able to assess accurately their satisfaction with the interpretation of the results because the process is complicated. The advisor must use several different charts to evaluate student scores in multi-sectioned results.

Students really have no way of knowing if the advisor does this correctly or not. The only way they would ever find out if a mistake was made would be if another advisor reinterprets them later. This is unlikely to happen because once a student is placed in English and math classes, he will continue to advance to the next level upon successful completion of the first courses.

It is more likely that students are expressing their satisfaction with how they did on the placement exam than their satisfaction with the advisor's interpretation.

Students who place into remedial classes are rarely happy that they must take them whereas students that test into college-level sections are satisfied to place in them.

Analysis of GPA and Satisfaction Scores

To address the research questions about how satisfaction with advising impacts GPA, hierarchical ordinary least squares (OLS) multiple regression was used as the statistical test because it allows the researcher to control for a number of additional variables. All of the control variables were entered together in one block and then the independent variable was entered in a separate block.

By entering variables in a predetermined order, the control variables are forced into the analysis. This removes the possible effects of those variables, allowing for examination of the independent variable's ability to explain unique variance in the dependent variable, net of controls. The variables listed in Table 4 are those for which the analysis was statistically controlled.

Initial regression results appeared heteroscedastic. To counter this problem, a power transformation was conducted on the dependent variable. Squaring GPA resulted in a more normal distribution. There were no missing data values so there was no reduction in sample size.

First, the adjusted R square values shown in Table 13 were examined. The adjusted R square is referenced because it takes the complexity of the model into consideration. When just the control variables were entered, the overall model (model 1) explained 7.2% of the variance. After the independent variable was entered, the full model (model 2) explained 7.0% of the variance.

The difference in the adjusted R square change from model 1 to model 2 indicates the overall variance explained by the independent variable after removing the effects of the control variables. This value equals -0.002, meaning that student satisfaction with their most recent meeting with their advisor explains 0.2% less variance in GPA when statistically controlling for the demographic variables. This is not a statistically significant or substantively important contribution.

Table 13 – *Adjusted R Square Values for GPA Squared and Satisfaction*

					Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.380[a]	.144	.072	4.03083483	.144	2.003	19	226	.009
2	.382[b]	.146	.070	4.03562502	.002	.464	1	225	.497

Table 14 – *GPA Squared Regressed on Control Variables and Satisfaction with Advising Scale (n= 303)*

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	Sig.	VIF
1	(Constant)	2.474	2.777		0.374	
	Gender	0.95	0.56	0.114	0.091	1.187
	Age	0.061	0.055	0.1	0.274	2.198
	Credits	0.049	0.082	0.04	0.55	1.165
	Father's Education	0.013	0.246	0.004	0.958	1.902
	Father's Occupation	0.163	0.152	0.092	0.286	1.935
	Mother's Education	-0.339	0.247	-0.111	0.171	1.727
	Mother's Occupation	-0.058	0.141	-0.033	0.682	1.725
	Family Income	-0.072	0.174	-0.031	0.68	1.473
	Employment Status	-0.16	0.188	-0.054	0.394	1.071
	Class Time	0.135	0.207	0.042	0.514	1.073
	Division Code	0.175	0.266	0.045	0.51	1.207
	Educational Goal	-0.089	0.291	-0.019	0.76	1.043
	Intention of Meeting Educational Goal	2.343	1.731	0.087	0.177	1.079
	Likelihood of Meeting Goal	0.243	0.228	0.069	0.287	1.11
	Continuing Student Status	0.199	0.56	0.024	0.723	1.164
	# of Previously Attended Colleges	-0.698	0.659	-0.072	0.291	1.213
	Children	-0.599	0.997	-0.05	0.548	1.836
	Minority Status	-1.719	0.584	-0.192	0.004	1.119
	Marital Status	2.13	1.115	0.157	0.057	1.778

Table 14 – *GPA Squared Regressed on Control Variables and Satisfaction with Advising Scale (n= 303) (continued)*

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	Sig.	VIF
2	(Constant)	2.805	2.823		0.321	
	Gender	0.962	0.561	0.115	0.088	1.188
	Age	0.064	0.056	0.105	0.253	2.212
	Credits	0.05	0.082	0.041	0.541	1.166
	Father's Education	0.022	0.247	0.008	0.93	1.907
	Father's Occupation	0.172	0.153	0.097	0.262	1.95
	Mother's Education	-0.355	0.248	-0.117	0.154	1.744
	Mother's Occupation	-0.053	0.141	-0.03	0.709	1.729
	Family Income	-0.069	0.174	-0.03	0.692	1.474
	Employment Status	-0.154	0.188	-0.052	0.414	1.074
	Class Time	0.12	0.209	0.037	0.564	1.085
	Division Code	0.182	0.266	0.046	0.495	1.209
	Educational Goal	-0.091	0.291	-0.02	0.754	1.043
	Intention of Meeting Educational Goal	2.535	1.756	0.094	0.15	1.108
	Likelihood of Meeting Goal	0.254	0.229	0.072	0.268	1.115
	Continuing Student Status	0.287	0.575	0.034	0.619	1.226
	# of Previously Attended Colleges	-0.718	0.661	-0.074	0.278	1.216
	Children	-0.661	1.002	-0.055	0.51	1.851
	Minority Status	-1.684	0.587	-0.188	0.005	1.128
	Marital Status	2.172	1.118	0.16	0.053	1.784
	Average Satisfaction	-0.159	0.234	-0.045	0.497	1.164

Analyses were conducted to assess normality, linearity, multicollinearity, and the presence of outliers. As shown in Figure 8, the normal curve over the residual distribution in the histogram appears unskewed. In the Normal P – P Plot shown in Figure 9, the points lie in a reasonably straight line from bottom left to top right suggesting no major deviations from normality. In the scatterplot shown in Figure 10, the distribution is roughly rectangular and the points are approximately centered on the zero line as it moves from left to right.

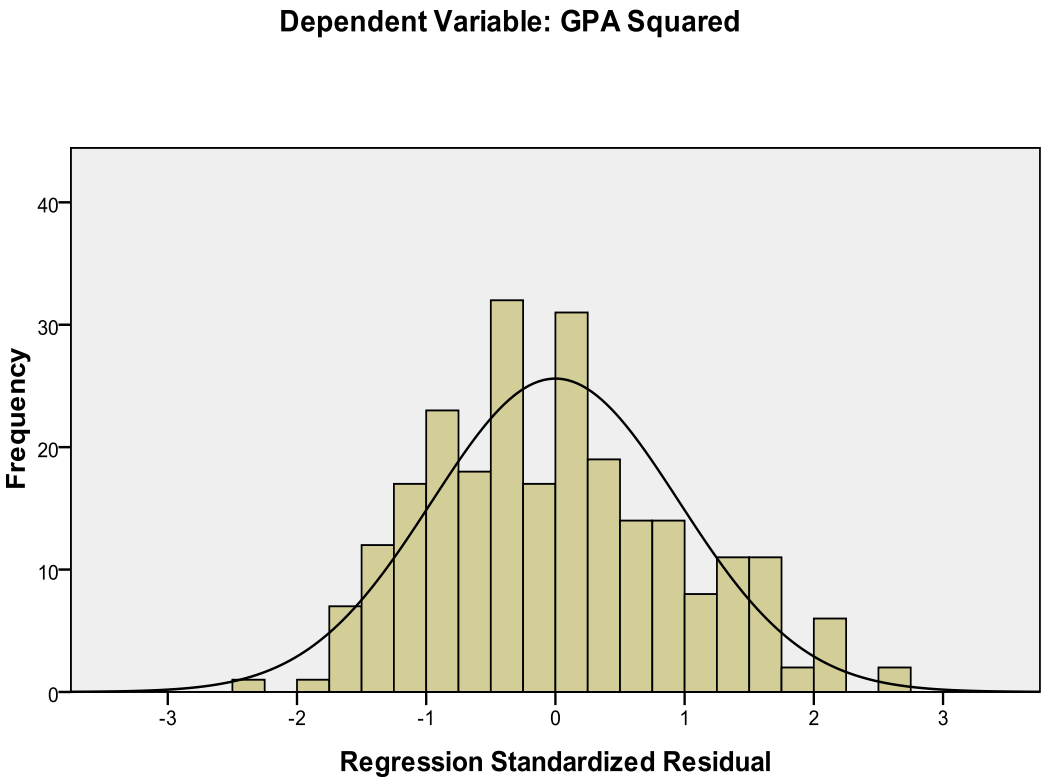

Figure 8 – Histogram of regression standardized residuals for GPA Squared and Satisfaction.

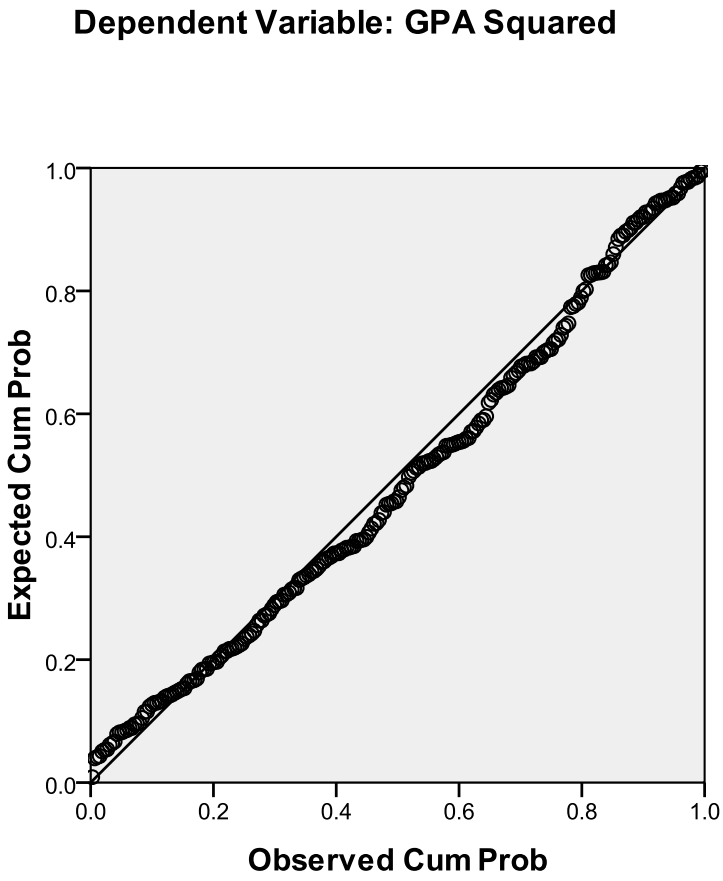

Figure 9 – Normal probability plot (P-P) of regression-standardized residuals for GPA Squared and Satisfaction.

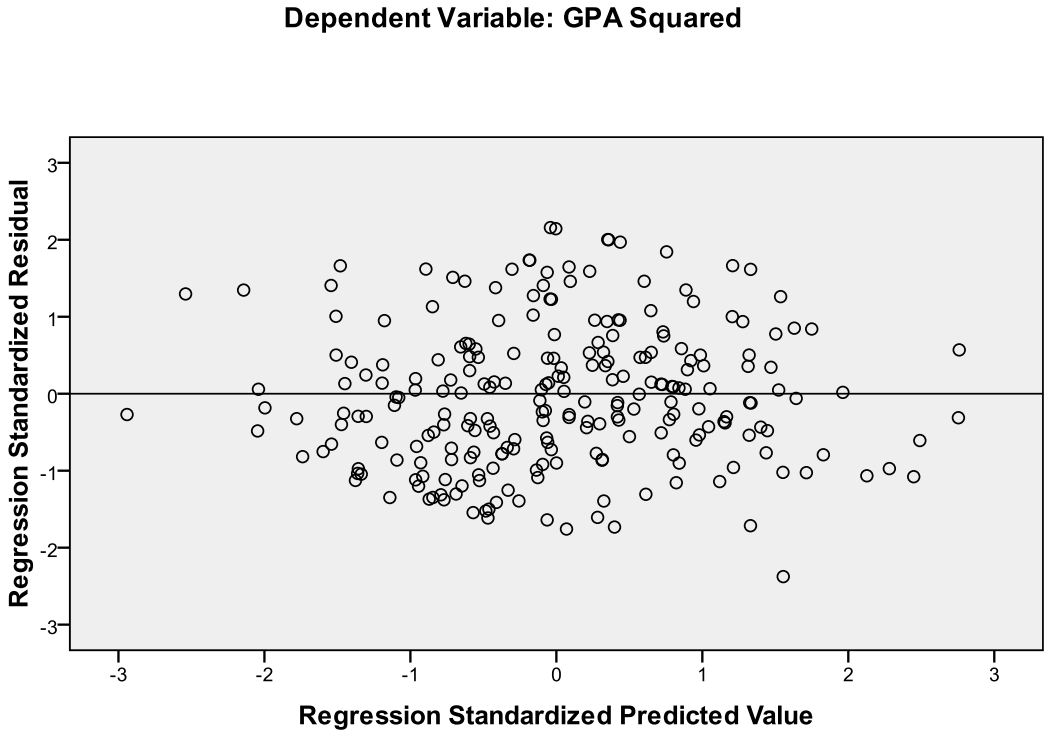

Figure 10 – Scatterplot of standardized residuals for GPA Squared and Satisfaction.

To determine the presence of multicollinearity, the variance inflation factors (VIF) were examined. VIF values higher than 10 indicate multicollinearity (Pallant, 2007). As shown in Table 14, all VIFs are less than 10 with the highest being 2.212. The VIFs are all within the recommended tolerances. Therefore, this suggests that the multicollinearity assumption has not been violated.

The scatterplot can be used to detect the presence of outliers. Standard residuals of more than 3.3 or less than -3.3 may be classified as outliers (Tabachnick & Fidell, 2007). As shown in shown in Figure 10, none of the residuals are more than 3.0 or less than -3.0.

Table 15 – *Residuals Statistics for GPA Squared Regressed on Controls and Satisfaction with Advising*

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.65	11.76	7.35	1.60	246
Std. Predicted Value	-2.94	2.76	0.00	1.00	246
Standard Error of Predicted Value	0.71	2.14	1.15	0.26	246
Adjusted Predicted Value	2.53	12.02	7.34	1.64	246
Residual	-9.59	10.60	0.00	3.87	246
Std. Residual	-2.38	2.63	0.00	0.96	246
Stud. Residual	-2.48	2.71	0.00	1.00	246
Deleted Residual	-10.43	11.28	0.02	4.22	246
Stud. Deleted Residual	-2.51	2.75	0.00	1.01	246
Mahal. Distance	6.67	67.74	19.92	10.33	246
Cook's Distance	0.00	0.06	0.00	0.01	246
Centered Leverage Value	0.03	0.28	0.08	0.04	246

In summary, the whole model explained 7.0% of the variance. The adjusted R square change indicates the overall variance explained by the independent variable after removing the effects of the control variables. This value equals -0.002, meaning that student satisfaction with their most recent meeting with their advisor explains

0.2% less variance in GPA when statistically controlling for the demographic variables. This is not a statistically significant contribution.

Analysis of Retention and Satisfaction Scores

For analyzing how satisfaction with advising relates to retention, binary logistic regression is the most appropriate statistical method. This approach assumes that the relationship between the independent and dependent variables is non-linear.

Variables were entered in two blocks to explore the predictive ability of each set. All of the control variables were entered together in one block and then the independent variable was entered in a separate block. The variables listed in Table 4 are those for which the analyses were statistically controlled.

SPSS output first provides results without any independent variables included in the model. This served as the basis with which to compare the model with the control and predictor variables included. To interpret the analyses, statistical significance, logistic coefficients, and odds ratios are used to examine the impact of control and independent variables on retention.

After running the binary logistic regression, the outliers were examined. Cases reported by SPSS with ZResid values less than -2.5 or higher than 2.5 may be classified as outliers (Pallant, 2007). In this analysis, ten such cases existed. The regression was rerun with those outliers excluded.

After rerunning the analysis, the new baseline was compared to the original. Prior to removing them, the accuracy rate of the model was 82.2%. After removing them, the accuracy rate was 83.3%. Removing the outliers improved the accuracy by less than 2.0%. Therefore, the model that includes all cases will be discussed.

To check for multicollinearity, the standard errors for the b values were examined. Since large standard errors may indicate problems in this area, values less than two are desirable. In this case, none were higher than 1.266.

The presence of a relationship between the dependent variable and the independent variable, after adding the control variables, is based on the statistical significance of the block chi-square for the second block of variables, which contains the independent variable. The overall model was not statistically significant (χ^2 = 3.238, d.f. = 1, p = 0.072). It only explained between 14.5% (Cob and Snell pseudo R square) and 23.8% (Nagelkerke pseudo R square) of the variance.

Although the model correctly classified 83.3% of cases, it should be noted that the baseline, without any predictor variables, correctly classified 82.2% of the cases. The model's sensitivity was much greater than its specificity. It correctly classified 97.6% of retained students but only 23.9% of those who were not retained were accurately classified.

Because the new theoretical model proposed in this paper suggests GPA relates to retention, I tested for an interaction between satisfaction and GPA. The effect was not significant (0.933). This indicates there is no significant difference in the effect of satisfaction on retention based on GPA.

In summary, the overall model was not significant and demonstrated low predictive ability. It was much better at classifying retained students than dropouts. The baseline prediction had an accuracy of 82.2% with no predictor variables included, an accuracy of 82.6% with the control variables included, and an accuracy

of 83.3% with the independent variable included. Therefore, the model was not sufficiently accurate to be useful.

Table 16 – *Logistic Regression Predicting Likelihood of Retention with Satisfaction*

	B	S.E.	df	Sig.	Exp(B)
Gender	.628	.397	1	.114	1.874
Age	.107	.056	1	.055	1.113
Credits	.155	.056	1	.005	1.168
Father's Education	-.087	.176	1	.620	.917
Father's Occupation	.044	.108	1	.682	1.045
Mother's Education	.050	.169	1	.770	1.051
Mother's Occupation	-.027	.097	1	.784	.974
Family Income	-.192	.124	1	.123	.825
Employment Status	-.164	.136	1	.226	.849
Class Time	.209	.167	1	.209	1.233
Division Code	-.042	.187	1	.824	.959
Educational Goal	-.301	.195	1	.123	.740
Intention of Meeting Educational Goal	1.068	1.266	1	.399	2.909
Likelihood of Meeting Goal	.042	.151	1	.783	1.042
Continuing Student Status	-.376	.409	1	.358	.687
# of Previously Attended Colleges	-1.051	.450	1	.019	.350
Children	.789	.820	1	.335	2.202
Minority Status	-.110	.399	1	.784	.896
Marital Status	-2.165	.848	1	.011	.115
Average Satisfaction	-.322	.185	1	.082	.725
Constant	-.519	2.231	1	.816	.595

Summary of Findings

The purpose of the research is to examine whether subjective measures of satisfaction with advising are predictive of more objective measures of academic performance, GPA and retention. The main hypotheses in this dissertation is if students perceive that they have high-quality advising services, they will have higher GPAs and retention rates. These hypotheses were not supported.

This research employed a quantitative methodological framework. I used SPSS to compute descriptive statistics. The demographics and student characteristics indicate a range of students were surveyed but the population more closely represents traditional college students.

Trying to draw conclusions by evaluating each individual satisfaction question proved difficult. Factor analysis examined underlying dimensions within the satisfaction questions, and Cronbach's alpha measured internal consistency.

Based on the results of the factor analysis, the satisfaction measure is unidimensional. It also confirms that there are no additional overlooked underlying dimensions that would necessitate reorganization of the questions when grouping them. A single average satisfaction score was created.

In support of the measure's validity, items always were more highly correlated with their own scale than with the other scale. Coefficient alphas represent internal consistency estimates of reliability for the scale (Green & Salkind, 2005). After removing question 25a based on the analysis, the Cronbach's alpha was repeated. No additional revisions were indicated.

Since GPA is a continuous variable, hierarchical OLS multiple regression is the most appropriate statistical analysis. Based on adjusted R square, the full model explained 7.0% of the variance. The adjusted R square change indicates the overall variance explained by the independent variable after removing the effects of the control variables. This value equals 0.002, meaning that student satisfaction with their most recent meeting with their advisor explains 0.2% less variance in GPA when statistically controlling for the demographic variables. This is not a statistically significant contribution. Therefore, hypothesis one is not supported.

Retention is a dichotomous variable so binary logistic regression was selected as the method for analysis. The overall model was not significant. It demonstrated low predictive ability and was much better at classifying retained students than dropouts. The baseline prediction had an accuracy of 82.2% with no predictor variables included, an accuracy of 82.6% with the control variables included, and an accuracy of 83.3% with the independent variable included. Therefore, the model was not sufficiently accurate to be useful. In addition, comfort with advisor was not a statistically significant predictor. Thus, the second hypothesis is not supported.

CHAPTER V

DISCUSSION

This study examined how satisfaction with advising services affected GPA and retention at the community college level. Prior research from the literature was used to support the connection that academic advising impacts those objective measures.

Hierarchical OLS regression and binary logistic regression were used to estimate the impact of the satisfaction variables on GPA and retention while controlling for the demographic variables. Although the hypotheses presented in this study were rejected, the research results were as expected. The relationship between perceptions of advising and GPA and retention do not support the findings in the literature when subjective measures of advising are used.

This chapter presents a review of the hypotheses for the impact of satisfaction with advising services on GPA and retention at the community college level. A discussion of how the results compare to prior research is included, along with practical implications. Finally, the chapter will review the limitations of this study and offer suggestions for future research.

Review of the Hypotheses

Because SCPCC uses student perceptions to evaluate the quality of academic advising, this study attempted to determine if that method could accurately assess what it intends to measure. This research explored more than frequency and perceptions by tying in two objective measures: retention rate and GPA. It purported

that if there is a relationship, one should find that if students are satisfied with advising services they will have higher GPAs and retention rates as suggested in the literature.

The main hypothesis leading to this paper is if students receive high-quality advising services, they will have higher GPAs and retention rates as suggested in the literature. Previous studies that measured only perceptions may not provide information about the quality component of this issue or be capable of measuring it. This research sought to determine what effect, if any, does satisfaction with advising had on GPA and retention.

Two specific hypotheses were proposed earlier in this paper:

H1: Satisfaction with advising services will positively affect GPA.

H2: Satisfaction with advising services will positively affect retention.

Although these hypotheses are written in support of the existence of a relationship between perceptions of satisfaction and the objective measures of GPA and retention, I did not anticipate being able to reject either null hypothesis. These were posed with the expectation that no relationship exists because perceptions of advising services do not measure the quality of services.

Based on the results of the factor analysis, the measure is one dimensional. It also confirms that there are no additional overlooked underlying dimensions that would necessitate reorganization of the questions when grouping them. A single average satisfaction score was created.

A reliability analysis indicated that removing the sub-question about placement test results. This made sense because it is doubtful that students are able to

assess accurately their satisfaction with the interpretation of the results. Because the process is complicated, students really have no way of knowing if the advisor does this correctly or not. The only way a student would ever find out if an error was made would be if another advisor reinterprets them later. This is unlikely to happen because once a student is placed in English and math classes, he will continue to advance to the next level upon successful completion of the first courses.

It is more likely that students are expressing their satisfaction with their performance on the placement exam than their satisfaction with the advisor's interpretation. Students who place into remedial classes are rarely happy that they must take them whereas students that test into college-level sections are satisfied to place in them.

For the first hypothesis, the null could not be rejected. Satisfaction with advising services did not affect GPA. Student satisfaction explains 0.2% less variance in GPA when statistically controlling for the demographic variables. These was not a statistically significant contribution.

Analyses of the second hypothesis show no statistical significance for the model assessing how satisfaction with advising services affected retention. The overall model demonstrated low predictive ability and was much better at classifying retained students than dropouts. The baseline prediction had an accuracy of 82.2% with no predictor variables included, an accuracy of 82.6% with the control variables included, and an accuracy of 83.3% with the independent variable included. The null could not be rejected for this hypothesis either.

Study Limitations

Although this exploratory study provides support for further exploration of how the quality of academic advising affects GPA and retention, it has several significant limitations. These include the size of the study, the time span of the study, lack of generalizability, and lack of causality.

The survey was conducted in the fall of 2009. GPA and retention data were collected in the spring of 2010. This means the GPA for new students was only for one semester. It is unknown how much impact an advisor can have on new students, although all are required to see an advisor. Continuing students are not required to see their advisor every semester.

This also means retention data was only collected for one semester subsequent to the survey completion. Successful retention may not be analyzable until several semesters of coursework have been completed or graduation has occurred.

Another limitation is the lack of generalizability. This research measured survey results from one community college. It did not attempt to be representative of SCPSS's student body because the purpose was to study the evaluation method, not the success of the institutions provision of services. Therefore, it is of limited value for other purposes at this institution of any others. Employing gender, enrollment status, and minority status, the survey sample was a fairly accurate reflection of the entire college population for the fall 2009 term. Although younger students were over sampled, the convenience sample is somewhat representative of SCPCC's student body.

This study lacks the ability to determine causality. It is purely exploratory and pre-experimental. Even if regression results had been statistically significant and had explained large percentages of variance, they would not be able to determine if high satisfaction with advising services causes high GPA and retention or if students with high GPAs and retention have a high satisfaction with advising services.

Practical Applications and Future Research

Although the hypotheses presented in this study were rejected, the research results were as expected. The relationship between perceptions of advising and GPA and retention did not support the findings in the literature. In this paper, I argued that students are not able to assess the quality of services they receive. They evaluate their satisfaction with advising services based on how pleased they are with the information they receive, whether it is accurate or not.

This study was exploratory in nature. It was inspired by current methods of measuring student services, which one may argue, contain fundamental flaws. If the current method is not flawed, but instead accurate, this study may have shown convergent validity. Although these hypotheses are written in support of the existence of a relationship between perceptions of satisfaction and the objective measures of GPA and retention, I did not expect to find one. These were posed with the expectation that no relationship exists because perceptions of advising services do not measure the quality of services.

Also, I found no studies in the literature that use objective measures to evaluate the quality of advising or how it impacts students and institutions. Most prior

studies used students' feelings or perceptions and were not conducted at the community college level.

The results of this study suggest initial support for further exploration. More research is needed before any conclusions can be made. However, my initial results may indicate two possibilities:

1. the current method of assessing the effectiveness of advising quality is not accurate.
2. the current method is accurate but academic advising does not have an impact on GPA or retention.

Either one could have implications at the institutional level for evaluation methods or policymaking.

Possibility 1 – Current Method is Inaccurate

Despite the limitations of this study, the most glaring finding to suggest the current method is not adequate is that the more satisfied students are with the competence of advising services, the less likely they were to be retained. I believe that this supports the assertion that students are not able to accurately assess the services they receive, rather than indicate increased satisfaction relates to increased dropouts.

Future research can help to clarify. An easy study would be to collect GPA and retention information for the students who participated in this study again after more time has elapsed. This would allow the data to reflect a longer-term picture of how advising may affect GPA and retention.

A more effective practice may involve incorporating a quality-control approach to assessing academic advising. The new method should objectively measure quality of advising and compare with satisfaction, retention and GPA information. It may involve researchers conducting interviews when students complete advising sessions. The interviews would include aspects such as length of visit; specific questions about why student went to see advisor; topics covered; placement test results interpretation; what students were told about graduation or program completion requirements; what students were told about transfer requirements. The student could complete a satisfaction survey similar to the currently used questionnaire.

The researchers could incorporate the quality-control component by confirming the accuracy of the information the students received. Placement tests results, graduation or program completion results, and transfer requirement could be confirmed or refuted to evaluate the accuracy of information.

No experimental research has been suggested yet. As mentioned earlier, the only experiment that measured some effects of advising and did not involve student perceptions took place over 40 years ago. Morehead and Johnson (1964) exposed a group of male freshmen engineering students to a different academic advising program and then compared GPA and retention to the control group, which experienced the traditional advising program. They found that the experimental group, which received increased informal advising contact, had a significantly higher GPA than the control group. The former had a smaller dropout rate than the latter, but the difference was not significant.

The Morehead and Johnson (1964) study was the only one located that did not measure perceptions, but instead used more objective means to measure the impact of advising. However, it did not measure the quality of advising and the effect that had on the higher GPA of the experimental group, nor was it at the community college level.

Although this research does not directly apply, the concept of the study may provide an idea for future study. An experimental group of students at SCPCC could be assigned to advisors or counselors who are pre determined to be highly competent. A control group with similar pre-experiment characteristics would be advised using the current system. Both groups would be followed for a minimum of two years to allow for degree completion. Of course, adaptations of the 1964 study would be required but it may provide results significant enough to support an affect of academic advising on GPA and retention.

Possibility 2 – Academic Advising is Ineffective

The other possibility runs counterintuitive to what most educational administrators and the literature suggest. That is, academic advising is not related to student success or is as important as purported.

Although I could not produce a study that quantitatively indicates that advising services affect GPA and retention, no other studies were found either. To be objective, instead of dismissing the evaluation method as flawed, the prospect that there is no relationship should be considered. If it was possible to produce quantitative research that suggests there is no link between quality advising services

and GPA or retention, academic advising as it exists today at SCPCC and other institutions could be totally restructured.

Substantial time and money savings may be possible for the institution by reducing the amount of advising and counseling provided. The need to establish an advisor-advisee relationship would be unnecessary as well. This could free colleges to restructure the provision of services

New students and those with poor academic performance are required to get an advising code before they can register for classes. This effectively forces them to meet with their advisor. If advising does not help students with retention or grades, this requirement could be eliminated. Advising could be made purely optional and students could see anyone available to advise rather than wait to secure an appointment with the advisor or faculty member to whom they are assigned.
The possibility that academic advising does not affect students is not in accordance with what one assumes or expects. The whole concept of advising as it exists today is based purely on student perceptions. Although it is highly unlikely schools would stop providing advising services, no quantitative evidence supports how it benefits students.

Conclusion

Scholars and administrators alike profess the need for quality advising services. Although there is a dearth of quantitative evidence, academics persist in providing advising services and students continue to partake of them. Rarely do logical people engage in actions with which the effectiveness is unsubstantiated, yet

this seems to be the case with academic advising. It seems to be valuable but no data supports that.

As one may imagine, the task of advising students from a vast number of different majors is difficult enough without the additional complications of determining when a student is ready to take certain courses due to placement tests, course prerequisites, remedial classes, and the basic order in which several classes that build on each other should be taken. If knowledge about transfer requirements to four-year schools, specific program requirements, and constantly-changing requirements are factored in, then the task becomes truly daunting. The amount of knowledge required seems overwhelming.

Problems for the student arise when the advice obtained is not competent. The primary outcome is that students may not graduate in a timely manner. Because they are told to take the wrong courses, students may have to take additional classes to fulfill degree requirements. This causes students to be attending classes for additional semesters to graduate. The improper sequencing may cause students to perform poorly, thus reducing their grade point averages.

Complications for the institution also arise when incompetent advice is given to students. The cost effectiveness of advising decreases because extra visits are required. Appointments are more time consuming when an advisor or counselor must attempt to undo previous damage. Also, time spent keeping current on degree requirements is costly because it takes time away from student appointments.

The advisor's ability to provide quality services may not be assessed in one existing method of evaluating advising services. It measured students' perceptions

and feelings about advising. While some evidence in literature suggests satisfaction plays a role in increased use of services, it is not necessarily a measure of the effectiveness of those services. No objective data suggests student perceptions of satisfaction correlate with the quality of advising services.

While the literature indicates a link between advising and retention, almost all previous research has measured perceptions or satisfaction with advising. Because of this, it seems that there is a gap in the methodology used to assess the efficacy of advising services. Even though investigators may be able to locate studies that assert increased use of services based on satisfaction, they still have not adequately measured service quality. This distinction was the crux of the research.

The outcome of this study was as expected. No relationship was found between satisfaction with advising and GPA and retention. Although there are limitations and it was exploratory in nature, this research provides initial support for further qualitative research. If institutions plan to continue to advising programs, they should seek to substantiate the effectiveness. That may lead to restructuring the provision of advising services in an effective and efficient means that meets the needs of both the college and the student.

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APPENDIX A – Counseling & Advising Services Survey

Student Characteristics - Please tell us about yourself:

1. HACC ID# H _____

2. Gender ☐ Female ☐ Male

3. Current Age (specify): _____

4. Race/Ethnicity ☐ American Indian/Alaskan Native ☐ Black/African American (Non-Hispanic)
   ☐ Asian/Pacific Islander ☐ Hispanic ☐ White (Non-Hispanic)

5. Number of credits enrolled this current semester (specify): _____

6. Marital Status ☐ Single, Never Married ☐ Married ☐ Divorced ☐ Widowed

7. How many children do you have? (specify) _____

8. What is the highest level of education your **father** completed?
   ☐ Less than High School ☐ High School/GED ☐ Some College
   ☐ 2-Year College Degree (Associates) ☐ 4-Year College Degree (Bachelors) ☐ Advanced Degree

9. What is your **father's** occupation? (specify) _____

10. What is the highest level of education your **mother** completed?
    ☐ Less than High School ☐ High School/GED ☐ Some College
    ☐ 2-Year College Degree (Associates) ☐ 4-Year College Degree (Bachelors) ☐ Advanced Degree

11. What is your **mother's** occupation? (specify) _____

12. What is your family income?
    ☐ Less than $15,000 ☐ $15,000 - $24,999 ☐ $25,000 - $34,999 ☐ $35,000 - $49,999
    ☐ $50,000 - $74,999 ☐ $75,000 - $99,999 ☐ $100,000 – $149,999 ☐ More than $150,000

13. Current employment status (total hours per week for all of your jobs):
    ☐ 10 hours or less ☐ 11-20 hours ☐ 21-30 hours
    ☐ More than 30 hours ☐Not employed ☐ Retired

14. What time do you generally come to class? ☐ Days (before 5 pm) ☐ Nights ☐ Weekends
    ☐ Combination of day, night, and/or weekends

15. What is your current major? (specify) _____

16. What is your educational goal at HACC?
    ☐ Complete an associate degree and transfer
    ☐ Complete an associate degree, certificate, or diploma and enter job market
    ☐ Complete course(s) without degree and transfer
    ☐ Complete course(s) without a degree for specific career or trade skills
    ☐ Complete course(s) for enrichment or other personal reasons.

17. Do you expect to meet your educational goal? ☐ Yes ☐ No (**go to question 19**)

18. If you answered yes, how likely are you to meet your educational goal?

Very Likely	Likely	Somewhat Likely	Somewhat Unsure	Unlikely	Very Unlikely	Unlikely
☐	☐	☐	☐	☐	☐	☐

19. What is your grade point average (GPA)? (specify) _____

20. Number of colleges previously attended (specify) _____

21. Is this your first semester at HACC? ☐ Yes ☐ No

Counseling/Advising – Please tell us about your experiences:

22. a. Did you meet with a counselor/advisor to discuss the Fall 2009 term? ☐ Yes (**go to part c**) ☐ No

b. If no, please indicate why you did not (**then go to question 24**):

- ☐ Couldn't secure an appointment that fit my schedule
- ☐ I didn't need help
- ☐ I was too busy
- ☐ Counselor/advisor was not helpful in past appointments
- ☐ Other (please specify): _____

c. Was this your assigned counselor/advisor? ☐ Yes ☐ No ☐ Not sure

d. Did you experience any difficulty obtaining an appointment? ☐ Yes ☐ No (**go to question 23**)

e. If yes, please describe: _____

23. If you attempted to personally contact your counselor/advisor and he/she was unavailable, did he/she respond in a timely manner? ☐ Yes ☐ No

24. Please rate your level of satisfaction regarding your most recent meeting with your counselor/advisor:

	Very Satisfied	Satisfied	Somewhat Satisfied	Neutral	Somewhat Unsatisfied	Unsatisfied	Very Unsatisfied
a. Time allowed to address questions and concerns	☐	☐	☐	☐	☐	☐	☐
b. Amount of privacy offered during your meeting	☐	☐	☐	☐	☐	☐	☐
c. Counselor/advisor's desire to listen and work with you to address your questions, concerns, and needs	☐	☐	☐	☐	☐	☐	☐
d. Counselor/advisor's ability to address your questions and concerns	☐	☐	☐	☐	☐	☐	☐
e. Accuracy of information provided	☐	☐	☐	☐	☐	☐	☐

25. Please rate your level of satisfaction with the following services provided by your counselor/advisor:

	Very Satisfied	Satisfied	Somewhat Satisfied	Neutral	Somewhat Unsatisfied	Unsatisfied	Very Unsatisfied	Not Applicable
a. Interpretation of placement test results	☐	☐	☐	☐	☐	☐	☐	☐
b. Counseling related to academic difficulties	☐	☐	☐	☐	☐	☐	☐	☐
c. Career information		☐☐	☐	☐	☐	☐	☐	☐
d. Course selection and scheduling	☐	☐	☐	☐	☐	☐	☐	☐
e. Graduation/program completion requirements	☐	☐	☐	☐	☐	☐	☐	☐
f. Transfer requirements/program information	☐	☐	☐	☐	☐	☐	☐	☐

26. If necessary, did your counselor/advisor follow up with additional information or answers to your questions?
☐ Yes ☐ No ☐ I did not require additional contact

27. Which of the following methods of contacting your counselor/advisor do you use most often?
☐ Walk-in ☐ Appointment ☐ Phone call ☐ E-mail

Thank you for completing this survey!

APPENDIX B - Informed Consent Form

You are invited to participate in this research study. The following information is provided in order to help you to make an informed decision whether or not to participate. If you have any questions please do not hesitate to ask. You are eligible to participate because you are a student at Harrisburg Area Community College.

The purpose of this study is to explore whether the perceptions of advising services correlate with measures that are more objective, such as GPA and retention rates. This study may provide information that can assist decision makers regarding the structuring of advising services. The findings may be used to direct further research regarding the optimal means of assessing the quality of advising services to maximize students' GPA and retention.

Your survey responses will be correlated with your GPA. Therefore, we ask your permission to obtain your GPA from HACC Web. The survey may also be completed anonymously. There are no known risks or discomforts associated with this research.

Your participation in this study is voluntary. You are free to decide not to participate in this study or to withdraw at any time without adversely affecting your relationship with the investigators or HACC. Your decision will not result in any loss of benefits to which you are otherwise entitled. If you choose to participate, you may withdraw at any time by notifying the Project Director or informing the person administering the test. Upon your request to withdraw, all information pertaining to you will be destroyed. If you choose to participate, all information will be held in strict confidence and will have no bearing on your academic standing or services you receive. Your response will be considered only in combination with those from other participants. The information obtained in the study may be published in scientific journals or presented at scientific meetings but your identity will be kept strictly confidential.

If you are willing to participate in this study, please sign the statement below and deposit in the designated box. Take the extra unsigned copy with you. If you choose not to participate, deposit the unsigned copies in the designated box. When you complete the survey, you will be given an information sheet that will provide contact information if you wish to receive results of the study.

_____ _____

Participant Name Date

_____

Participant Signature

Student Researcher:
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This project has been approved by the Indiana University of Pennsylvania Institutional Review Board for the Protection of Human Subjects (Phone: 724/357-7730).

Indiana University of Pennsylvania
Department of Sociology
Administration and Leadership Studies Program

The following information is provided to you so that you will know the purpose of the research study.

You have just completed questionnaire designed to gather information about the relationship between academic advising, grade point averages (GPAs), and retention. The purpose of this study is to explore whether the perceptions of advising services correlate with measures that are more objective, such as GPA and retention rates. By utilizing survey and GPA data, this project may help confirm or refute the validity of using perceptions to measure the effectiveness of advising services. The main hypothesis leading to this question is if students receive high-quality advising services, they will have high GPAs and retention rates as suggested in the literature.

The research project is sponsored by the Indiana University of Pennsylvania Department of Sociology. The primary investigator is Stacey Pietras and the faculty sponsor is Thomas Nowak, Ph.D. If you would like to receive the results of this research when it is completed, contact Stacey Pietras at s.a.pietras@iup.edu.