

1992

A study of student attrition at a small, rural community college: A test of the Bean and Metzner Model

Alan Michael Harris

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A test of the Bean and Metzner Model**

Harris, Alan Michael, Ed.D.

The College of William and Mary, 1992

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U·M·I

**300 N. Zeeb Rd.
Ann Arbor, MI 48106**

**A STUDY OF STUDENT ATTRITION AT
A SMALL, RURAL COMMUNITY COLLEGE: A
TEST OF THE BEAN AND METZNER MODEL**

**A Dissertation
Presented to
The Faculty of the School of Education
The College of William and Mary in Virginia**

**In Partial Fulfillment
Of the Requirements for the Degree
Doctor of Education**

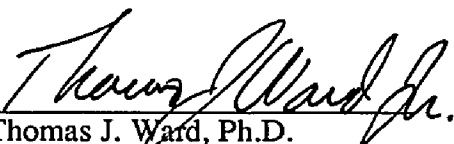
**by
Alan Michael Harris
November 1992**

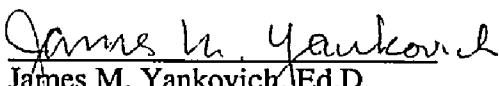
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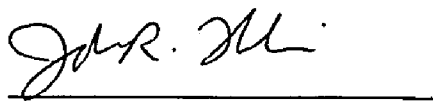
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DEDICATION

To my wife, Wanda, who was by my side throughout this project. Her patience, support, encouragement, and intelligent questions helped to provide me with the inspiration which enabled me to accomplish this task. In addition, she undertook the tremendous challenge of typing and proofreading the document. For this, I am forever grateful.

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ACKNOWLEDGMENTS

A debt of gratitude is felt towards the members of the committee who provided inspiration and encouragement throughout both this study and course work. A special thanks to Dr. Ward who chaired the committee and spent a great deal of time guiding the study. His patience and interest in this study helped keep me going. A heartfelt thanks is extended to Dr. Yankovich and Dr. Thelin for sharing their expertise and serving as evaluators for the project.

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**A STUDY OF STUDENT ATTRITION AT
A SMALL, RURAL COMMUNITY COLLEGE: A
TEST OF THE BEAN AND METZNER MODEL**

ABSTRACT

The purpose of this study was to test the Bean and Metzner Model of Nontraditional Student Attrition (1985) in a small, rural community college environment. The influence of selected sets of background, environmental, and academic variables from the model were tested, in addition to the individual variables contained within each set. The differences between the persister and nonpersister groups were examined by variables.

Data was collected via the Student Entry Questionnaire and the Student Questionnaire. These were modified instruments by the author based upon the Student Attitude and Student Entry Level Questionnaire by Bean. Everyone who came in for placement testing at Paul D. Camp Community College during the fall of 1991 ($n = 148$) completed the Student Entry Questionnaire. Of this group, a total of 118 usable Student Questionnaires were returned after being mailed. To address the major research question, discriminant analysis was used to analyze the data. Based upon a discriminant analysis using all eighteen variables, the model did predict with 92% accuracy.

Multiple regression was used to investigate the first four subsidiary questions. The eighteen predictor variables were: 1) age, 2) enrollment status, 3) educational goals, 4) commitment to attend Paul D. Camp Community College, 5) high school, 6) performance,

7) ethnicity, 8) gender, 9) study habits, 10) academic advising, 11) absenteeism, 12) major certainty, 13) course availability, 14) finances, 15) hours of employment, 16) outside encouragement, 17) family responsibilities, and 18) opportunity to transfer.

The three statistically significant predictor variables of student attrition were commitment to attend Paul D. Camp Community College (PDCCC), opportunity to transfer, and student's educational goals. In the stepwise regression procedure, commitment to attend PDCCC accounted for over 31% of the variance ($R^2 = .3140$). Opportunity to transfer was the next best predictor variable that added over 2% more to the prediction accuracy ($R^2 = .0273$). The third strongest predictor was student's educational goals which added just over 3% to the prediction ($R^2 = .0307$).

The background and defining variable set provided the most powerful prediction value followed by the environmental variable set. None of the academic variables were found to be significant. There was not a significant interactional effect between the academic and environmental variable sets for predicting attrition.

This study reported the differences between the persister and nonpersister groups according to the eighteen variables examined found from using T-tests. This study presented suggestions and strategies for reducing the negative impact of these factors.

Further study is needed to ascertain the difference between student perception in response to the variables and actual behavior. The results of this study are influenced by the subjectivity of the respondents. Follow-up studies of a longitudinal design would increase the efficiency of the model.

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**A STUDY OF STUDENT ATTRITION AT
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CHAPTER 1

INTRODUCTION

Introduction

Student attrition is a topic that has attracted much attention in postsecondary education for many years; still today, about 41% of students leave college prior to degree completion. Of the students who enter two-year colleges, 54% do not obtain either a two-year or four-year degree (Tinto, 1987). This represents a tremendous potential loss of talent for society and loss of financial support for educational institutions. Students who dropout lose the occupational, monetary, and other societal benefits associated with a college degree.

According to Bean (1986), the impact of student attrition can erode at the very fabric of the educational institution. Decreased faculty morale and quality is very likely where attrition rates are high. Institutions with high student attrition rates also have the best students, faculty, staff, and administrators leave. The economic impact of student departure can be devastating to institutions which are becoming increasingly dependent upon student tuition. Across the country, the tuition loss due to full-time freshman attrition alone is three billion dollars (Bean, 1986).

As institutions of higher learning move into the last decade of the 20th century, student populations are becoming increasingly diverse. Older, part-time, and commuter students increasingly compose a larger proportion of undergraduate collegiate student bodies and the trend is predicted to continue as the number of traditional age college

students decreases (Cohen & Brawer, 1989; U.S. Department of Education, 1982). Cross adds that the "new students" to higher education not only include a much greater proportion of ethnic minorities and adults, but more Caucasians from blue-collar families (Cross, 1968). These nontraditional students have a higher rate of attrition from college compared to their traditional counterparts (Astin, 1971; Fetters, 1977; Noel et al., 1986; Tinto, 1987).

The dramatic demographical change in the number of nontraditional students entering college can be traced to political, social, and economic factors that have occurred during the last 30 years. Colleges have opened their doors to more minority students in an effort to provide equal access. Societal norms toward women entering or returning to higher education have significantly changed. Both women and men are enrolling in postsecondary institutions to acquire new skills or enhance their existing skills to meet the rapidly advancing technology of today's work place. With increased realization of the need for continuous or intermittent training, the concept of lifelong learning has become more accepted. All of these factors have influenced the number of nontraditional students attending higher education.

Community colleges were created for the purpose of providing broad access to postsecondary education. These institutions by design are commuter institutions, geographically accessible within short driving distance. With few entry requirements, less academically prepared students are provided an avenue for educational advancement. Community colleges offer a wide variety of courses and programs leading to a two-year or associate degree, diploma or certificate. Given the mission of community colleges, it is no surprise that community colleges enrollment is composed of, as Cross put it, "new students" to higher education.

Research directed towards nontraditional students, especially students who attend community colleges, is not abundant. Due to the relatively recent arrival of the nation's community colleges when compared with four-year colleges, time has not allowed for the development of a rich body of research. Research that has been conducted with traditional students who attend traditional colleges has often been substituted for research that needs to be conducted with nontraditional students.

Of the research that focuses on student attrition at community colleges, the majority is primarily descriptive much like the early studies of traditional college student attrition. Such studies, while not based upon theory, described the phenomenon but did not offer reasons why or how variables relate (Tinto, 1975). Early attrition studies relied heavily on ex post facto methodology. When using this approach, the researcher either selected a sample of students who had already dropped out to attempt to discover, from precollege student records, what factors might have been significant in causing withdrawal. Other researchers sought to discover the reasons for student dropout through the use of post withdrawal interviews or questionnaires (Pantages & Creedon, 1978). Most made empirical generalizations about the characteristics of dropout based upon correlations among variables. Studies of this type lack control groups of persisters and calculations of inferential statistics (Bean & Metzner, 1985).

Attrition research at commuter institutions is characterized by a paucity of studies that contain separate analysis for part-time and older students (Bean & Metzner, 1985). Of the research at commuter institutions, which included part-time and older students, most studies did not report the proportionate representation of part-time and older students in their sample. Research aimed towards two-year college students enrolled in vocational programs is lacking as well (Gates & Creamer, 1984). In particular, research

conducted in small, rural community colleges is scarce although, the numbers of such institutions across the country is significant. Using Virginia as an example, 11 of the 23 community colleges (48%) have less than 1,500 full-time equivalent students.

Statement of the Problem

A clearer understanding of why students leave college is a prerequisite for developing effective institutional policies for student retention. More precisely, for the majority of institutions, the issue is how to retain those who can meet the academic requirements, would like to continue, and would benefit from an education at the institution.

The likelihood of nontraditional students finishing a degree program is much less when compared with traditional students (Bean & Metzner, 1985). Why these students in particular drop out of school is not well understood. Theoretical models developed to explain the attrition process have, for the most part, been geared towards residential colleges. These models emphasize the process of socialization characterized by involvement with faculty and peers within the institution as the factor most likely to affect persistence (Pascarella & Terenzini, 1980; Spady, 1970; Tinto, 1975). However, the nontraditional student who attends a commuter college does not experience the same intense involvement with the institution.

Bean and Metzner (1985) developed a model to focus on nontraditional student attrition. They felt that because interaction with the primary agents of socialization (faculty and peers), then socialization should be less of a significant factor in predicting dropout. Their model is composed of three sets of variables - background variables, academic variables, and environmental variables. These three sets of variables influence both

academic and psychological outcomes which, in turn, affect "intent to leave" (see Figure 5 on page 19). "Intent to leave" is followed by student dropout.

The Bean and Metzner (1985) model is appropriate for explaining attrition for commuting students. When compared to Spady's (1970, 1971), Tinto's (1975), and Pascarella and Terenzini's (1980) conceptual models, the Bean and Metzner model minimizes the role of social integration variables. At commuter institutions, 90 to 98% of contacts by students with the institution occur in the classroom (Noel et al., 1986). Second, the Bean and Metzner (1985) model minimizes the role of institutional commitment when compared to Spady's or Tinto's models. A review of literature indicates that educational goal commitment is much more important than institutional commitment at two-year colleges (which are largely commuting institutions). Third, the Bean and Metzner (1985) model emphasizes the importance of utility by locating it at the top of the psychological outcome subset while the other models lack this factor altogether. Perceived utility is a major factor for educational commitment at two-year colleges. The increased likelihood of two-year college students leaving college for a job offer is an indirect indication of the importance of utility for this student population. Fourth, the academic and environmental variable sets are very parsimonious with the research in terms of comparing the most direct effects for two-year college students.

Although the Bean and Metzner model was developed to explain the attrition process for nontraditional students, the model has received little attention in community college research. This study proposes to investigate whether students who drop out of a small, rural community college do so in a way consistent with the Bean and Metzner Nontraditional Model of Student Attrition (1985).

The Research Question

The following research question was posed for this study: Do students who drop out of a small, rural community college do so in a way consistent with the Bean and Metzner Nontraditional Model of Student Attrition (1985)?

All students bring with them a broad number of prematriculation characteristics. The background and defining variable set represents the prematriculation characteristics of students. As identified by Bean and Metzner (1985), they are quite different from those found in other models of attrition. Bean and Metzner operationalizes this variable set where the most salient variables - age, enrollment status, residence, educational goals, high school background, performance, ethnicity, and gender - can be more easily tested. When contrasted with Pascarella's conceptual model for student-faculty informal contact (1980), the student background characteristics of openness to change, personality, orientations, goals, values, and interests all present idiosyncratic challenges to the researcher. Spady's (1970) and Tinto's (1975) conceptual models both lack specificity.

One variable in the background and defining variable set of Bean and Metzner's (1985), residence, affects the typical community college student in a very different way than the traditional four-year college student. Community colleges are largely commuter institutions where students "visit" campuses rather than live there. Campus life is not central to the lives of the nontraditional student who frequently works and has family responsibilities. For the most part, the student culture at commuter institutions is weaker because students' participation outside the classroom is less. Thus, the lack of intense involvement with the institutional environment is a potent factor in withdrawal decisions at any commuter college.

Likewise, the academic set of variables identified by Bean and Metzner (1985) is

quite different compared with other models of student attrition. Their conceptual model is composed of study habits, academic advising, absenteeism, major certainty, and course availability. Again, the operationalization of this variable set by Bean and Metzner provides a useful foundation for researching this area. Bean and Metzner separates the academic outcome/GPA to test the effect of student grade-point average on persistence. This separation allows for the testing of the influence of behaviors that are considered to contribute to academic success along with the actual measure of it (GPA).

Bean and Metzner define the environmental variables set as finances, hours of employment, outside encouragement, family responsibility, and opportunity to transfer. Community college students have many competing demands on their time. Such students often spend a large portion of their time working in off-campus jobs, commuting from home or work to the campus, and attempting to meet family responsibilities. With limited time to devote to the academic endeavor, time spent for study, after-class discussion, library assignments, and extracurricular activities is simply not available.

Subsidiary Questions

Five subsidiary questions were developed for this study.

- Q1. What influence does the selected sets of background environmental, and academic variables have on the attrition process for rural community college students? When each composite set is examined as an entity, how do they relate as distinct sets of variables?
- Q2. How much influence do individual variables within each set have on predicting students who ultimately leave? Which of the variables will be statistically significant?

- Q3. What is the relative strength of the three sets of variables in predicting attrition?**
- Q4. What is the interactive effect of the background, academic, and environmental variables in predicting attrition? How do prematriculation characteristics of background and defining variables influence the academic and environmental variable sets? What effect do environmental variables have on academic variables and vice versa?**
- Q5. How do the persister and nonpersister groups differ according to the variables examined? Are there germane differences between the two groups?**

CHAPTER 2

REVIEW OF THE LITERATURE

Early studies of traditional college student attrition are numerous and primarily descriptive. While not based on theory, such studies served the purpose of describing the phenomenon but did not offer reasons why or how variables are related (Tinto, 1975).

Models of Student Attrition

Over the last two decades, many models of student attrition have been developed. The majority of these models focused on traditional college students although more recent models now focus on nontraditional students. Several of the most widely cited models are reviewed here as they serve as foundations for the Bean and Metzner (1985) Conceptual Model of Student Attrition.

Spady. Spady (1971) is generally credited with developing the first widely recognized model of student attrition (Bean, 1982). Spady's explanatory sociological model of the dropout process (1970) constitutes the first full-blown theoretical model. His model was selectively borrowed from Durkheim's (1961) idea that shared-group values and friendship support are expected to reduce suicide and, by analogy, dropout. To begin with, Spady specified that dropout decisions are the result of a longitudinal process. Spady (1970) recognized that family and individual background influence the ability of students to accommodate the pressures of new environments (see Figure 1). He described the interaction between the student background of educational environment as

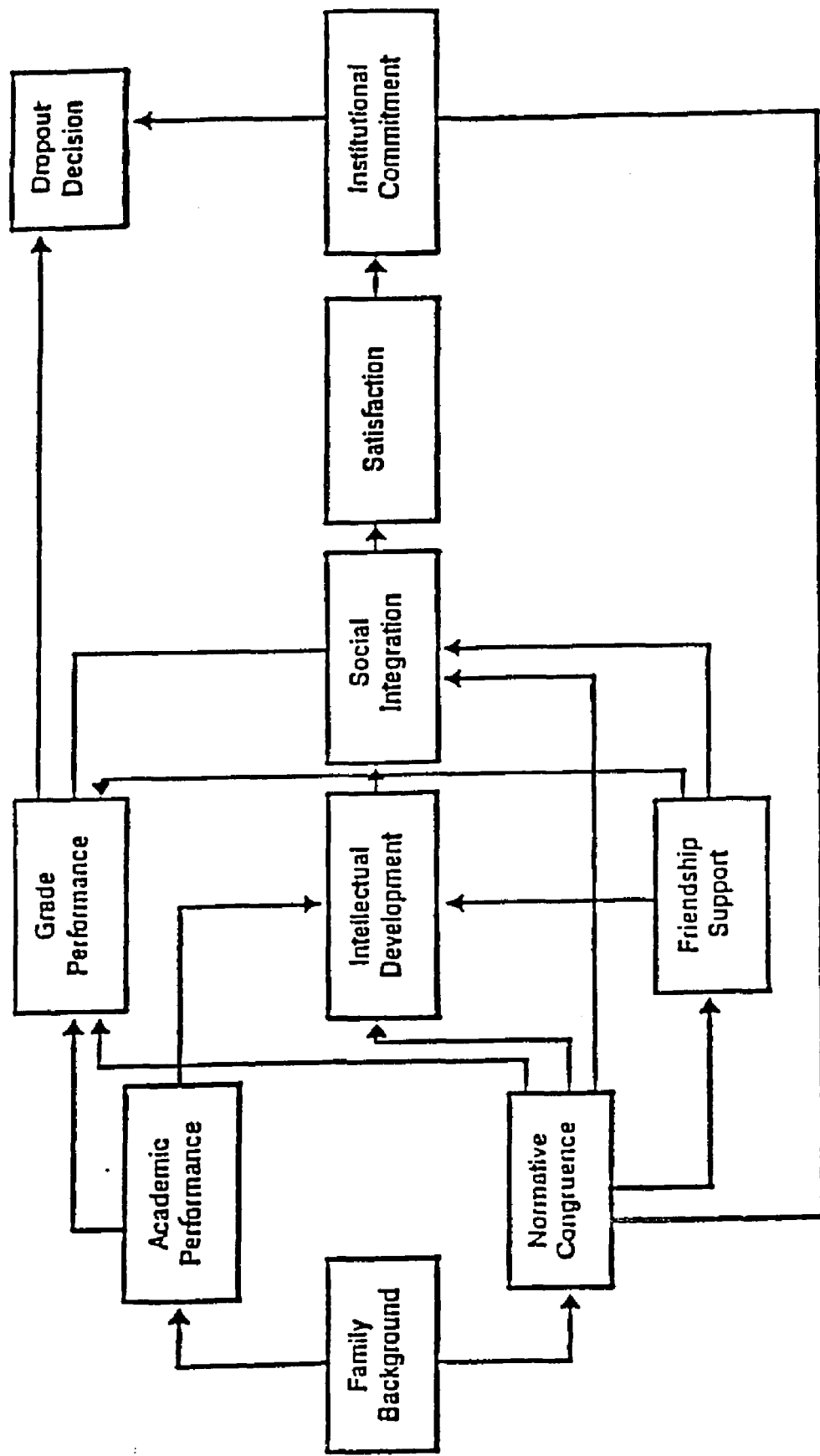


Figure 1 Spady's theoretically based model of the undergraduate dropout process (1970).

normative congruence. He recognized that normative congruence is an important link to building relationships at college, especially in developing friendship support. Friendship support, along with grade performance and intellectual development, all contribute to greater social integration. Social integration was predicted to increase student satisfaction that would consequently increase institutional commitment. Spady concluded that institutional commitment and grade performance are direct antecedents of college dropout.

Spady published a study in 1971 in which he tested his model with longitudinal data at the College of Chicago. In this study, Spady operationalized institutional commitment by asking the extent to which students hoped to graduate. At the conclusion of this study he modified his earlier model because of differences between males and females in dropping out (see Figure 2).

In addition, he repositioned intellectual development from social integration where either variable could lead to direct dropout decisions.

Tinto. Tinto's (1975) model of student attrition was based on Spady's earlier concepts and is the most widely cited model in the literature (Bean, 1980; Bean & Metzner, 1985; Terenzini & Pascarella, 1977, 1978). Tinto purports two factors are the primary causes of individual withdrawal from college. The personal attributes of students which predispose them to given situations and the interactional experiences within the institution following entry both directly influences withdrawal decision of students.

Tinto expanded background characteristics to include family background, individual attributes, and precollege schooling. These background characteristics interact with each other influencing both goal commitment (commitment to the goal of graduation) and institutional commitment (see Figure 3). Intentions and commitments are two categories

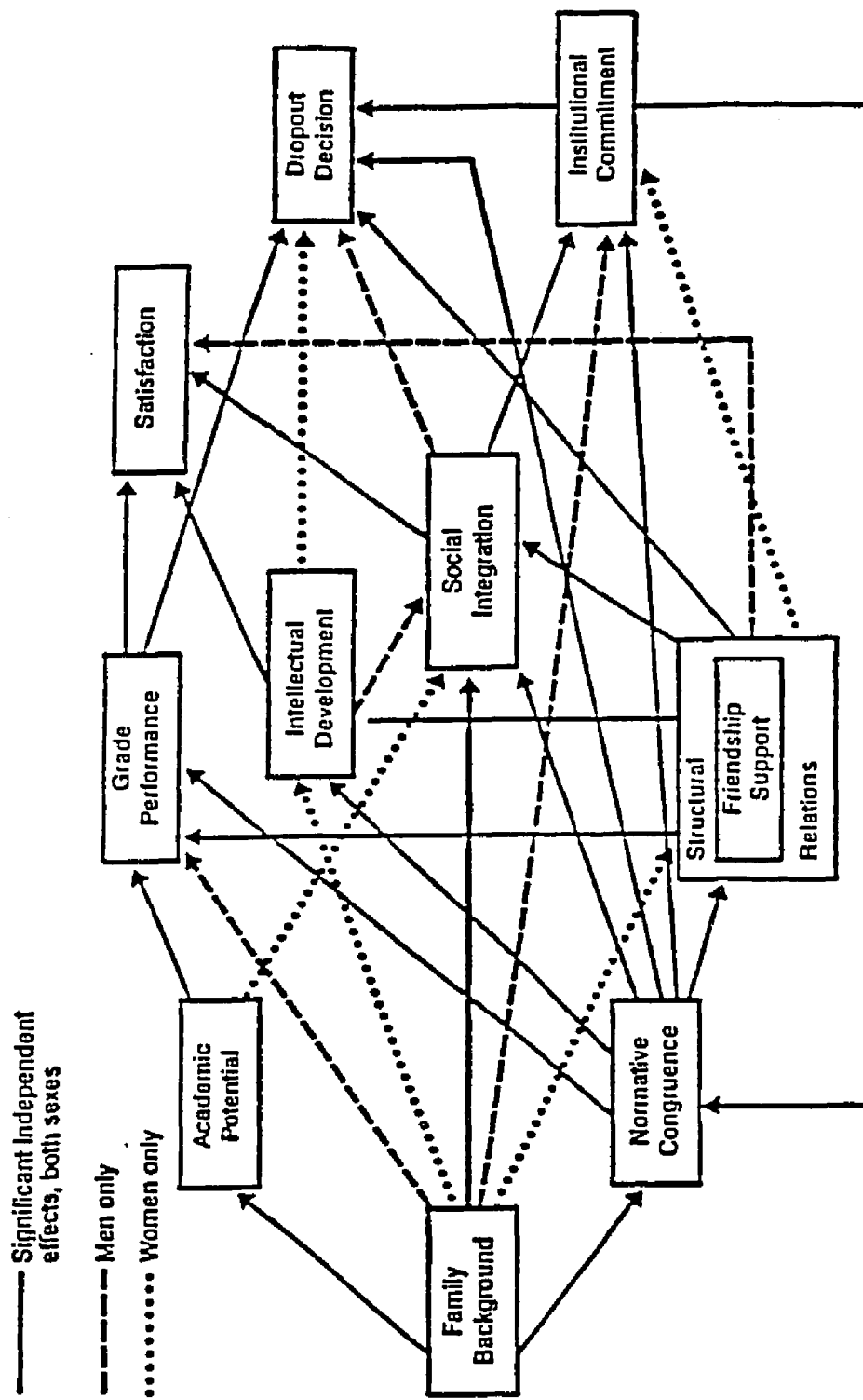


Figure 2 Spady's empirical model of the undergraduate dropout process (1971).

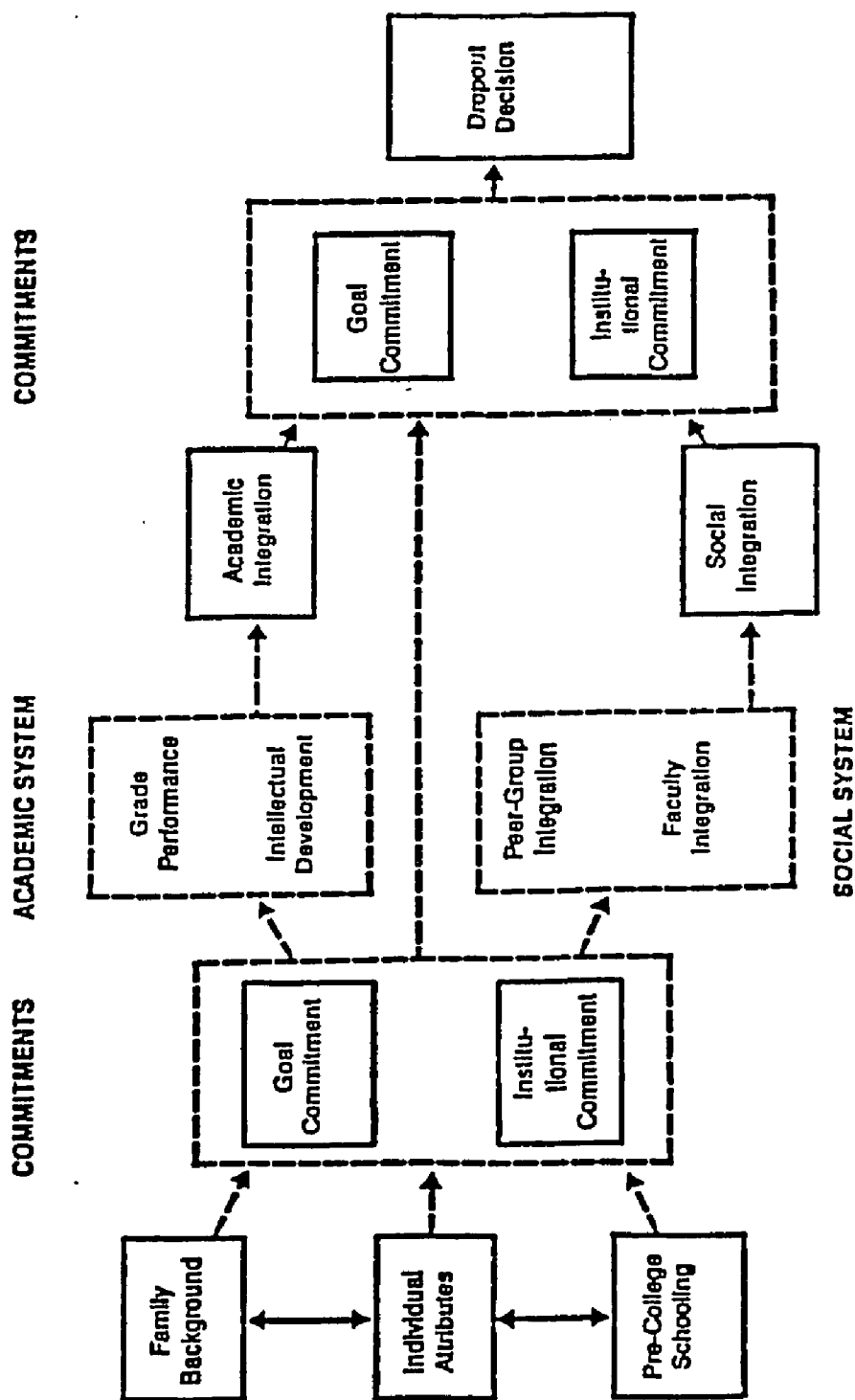


Figure 3 Tinto's conceptual model for dropout from college (1975).

of personal attributes which predispose some students toward dropout. Most often stated in terms of educational and occupational goals, intentions are aspirations toward which student activities are directed. However, commitments represent the inclination for a person to complete tasks once started. According to Tinto, both intentions and commitments are subject to change over time.

In the academic system, goal commitment leads to higher grade performance and intellectual development, which in turn lead to academic integration. In a circular fashion, increased academic integration leads to even greater goal commitment. Goal commitment increases the likelihood of persistence.

In the social system, institutional commitment leads to peer group and faculty interaction, which in turn leads to social integration. Social integration is expected to increase institutional commitment while academic integration is expected to increase goal commitment. Tinto concluded that both increased goal commitment and institutional commitment reduces the likelihood of dropping out.

Pascarella. Based upon a test of Tinto's model (1975), Pascarella, Duby and Iverson (1983) found that while certain parts of Tinto's model (1975) applied to nonresidential institutions, other parts did not. Tinto's central concept of academic integration was found to be consistent in a commuter college setting. The extrinsic reward of grades and the intrinsic reward of intellectual development seemed to predict persistence.

Several pre-college variables (e.g., sex, academic aptitude) had significant direct effects on persistence as well. One might expect that the characteristics which the commuter student brings to college to have a stronger direct impact on persistence since they spend substantially less time in the campus environment.

However, Pascarella, Duby and Iverson (1983) questioned that students attending a commuter college (or commute to a residential school) are a different population to begin with than students residing on-campus. Such initial differences in student selectivity may be a significant determinant of apparent differences in the patterns of variables directly influencing persistence across commuter and residential colleges.

In addition, Pascarella, Duby and Iverson (1983) found that social integration had a negative influence on persistence when applied to commuter institutions which is inconsistent with Tinto's model. They felt that students with high affiliation needs (persons who are group-centered, friendly and participative with others) would be more socially integrated which might be a liability in a non-residential environment. Thus, the socially integrated student may be more likely to transfer to a residential institution where the increased opportunities for social involvement are more consistent with their personality orientations.

A final issue in the applicability of Tinto's model in a non-residential setting concerns the role of the commitment variables. Pascarella, Duby and Iverson (1983) found that neither commitment to the goal of graduation nor commitment to the institution had the direct positive influence on persistence posited by the model. They felt that the effect of institutional commitment on persistence is mediated by the student's intention to persist.

Pascarella (1980) developed his model of the attrition process that emphasized the importance of informal contact between students and faculty (see Figure 4). In his model, background characteristics are expected to interact with institutional image, administrative policies, size, admissions, academic standards, etc. These institutional factors in turn are expected to influence informal contact with the faculty, other college experiences (e.g.,

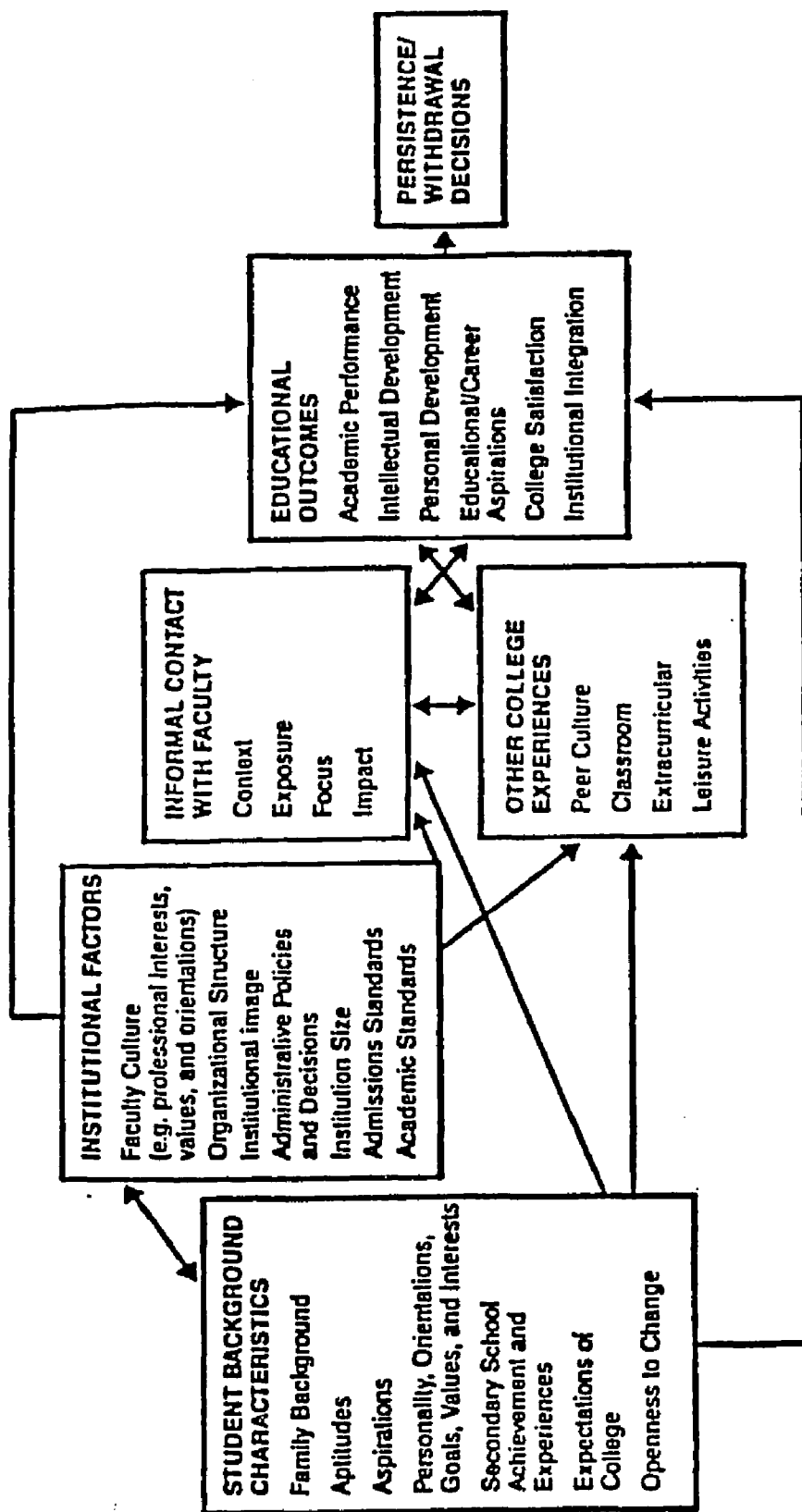


Figure 4 Pascarella's conceptual model for student-faculty informal contact (1980).

peer culture, classroom, cocurricular, and leisure activities) and educational outcomes (e.g., academic performance, intellectual development, personal development, educational and career aspirations, college satisfaction, and institutional integration). Pascarella felt that these educational outcomes have the most direct impact on withdrawal decisions. Pascarella emphasizes informal contact with faculty which is expected to influence educational outcomes, as well as other college experiences, and it is expected to be influenced by both.

Bean and Metzner. Bean and Metzner (1985) developed their model to focus on nontraditional student attrition. Unlike the Spady, Tinto, or Pascarella models, the Bean and Metzner Conceptual Model of Nontraditional Student Attrition (1985) rests on a theoretical framework other than the socialization process. Bean and Metzner (1985) stated that

nontraditional students are distinguished by the lessened intensity and deviation of their interaction with the primary agents of socialization (faculty, peers) at the institutions that they attend. (p. 448)

Bean and Metzner felt that the attrition process for nontraditional college students is different from the traditional college student due to a lack of social integration for nontraditional students. While they recognized this difference in their model, other elements identified in earlier models were refined and included.

The Bean and Metzner (1985) model predicts that dropout decisions will be based primarily on four sets of variables illustrated in Figure 5. Students with poor academic performance are predicted to have higher attrition rates compared with students who perform well. As defined, student GPA was based on past high school performance. The second factor is "intent to leave", which is affected both by psychological outcomes, as well as academic variables. Bean and Metzner factored in "intent to leave" based upon

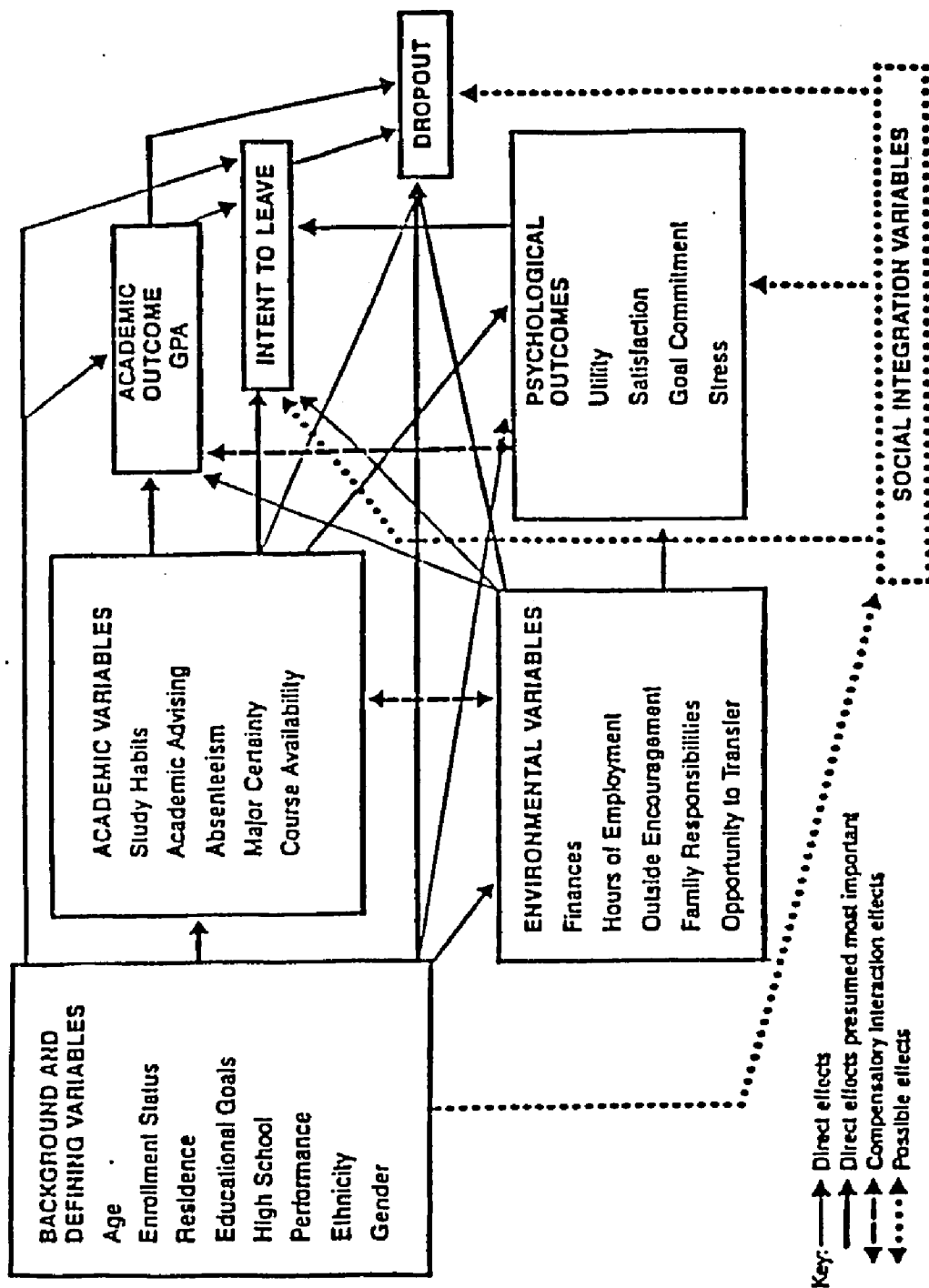


Figure 5 Bean and Metzner's conceptual model of nontraditional student attrition (1985).

the connection made by Fishbein and Ajzen (1975) between attitude, intention and behavior. The third group of variables consist of background and defining variables, performance and education goals in particular. The authors noted that "the effects may be mediated by other endogenous variables in the model" (p. 490). The fourth variable set, environmental variables, were expected to interact with academic variables, as well as to exert a direct effect on withdrawal behavior.

Two compensatory interaction effects are predicted in the model. For nontraditional students, environmental variables are predicted to be more influential than academic variables. Thus, if both academic and environmental variables both favor persistence then students should remain in school. But if academic variables are favorable while the environmental variables are not, students should drop out, and the positive effects of the academic variables will not be apparent. On the other hand, when environmental support is favorable but academic support is not then students would be expected to remain in school. In other words, environmental support will compensate for weak academic support but academic support will not compensate for weak environmental support.

The second compensatory effect relates to the academic outcome (GPA) and psychological outcomes. Students with high scores in both areas should persist while students with low scores in both areas are expected to withdraw. However, if students perceive unfavorable psychological outcomes (low utility, satisfaction, goal commitment, or have high levels of stress), they may drop out even with high GPAs. But, positive psychological outcomes may lead to persistence despite low GPAs. Put another way, high levels of academic achievement results in persistence only when accompanied by positive psychological outcomes from school.

Tests of the Bean and Metzner Model

The results of tests of the Bean and Metzner (1985) model were favorable by Broughton (1986), Farabaugh-Dorkins (1991), Metzner and Bean (1987), Morgareidge (1988), and Whitaker (1987) but unfavorable by Stahl and Pavel (1992). Broughton tested the model with 300 former community college students who had transferred to a nonresidential, urban university. Sixty percent of his sample attended part-time and half were older than 23 years of age. He found that academic outcome had the only direct effect on intent to leave and that no evidence linked environmental variables to psychological outcomes.

Farabaugh-Dorkins (1991) tested the model on 347 freshmen over the age of 22 who attended a large, residential university. She found that the model explained 18% of the variance. Intent to leave had the strongest relationship to attrition (.29) followed by GPA (-.22).

Metzner and Bean (1987) tested the model on a sample of students enrolled in English composition at a large, midwestern commuter university. Fifty-seven percent of the sample attended on a part-time basis. They found that the model accounted for 29% of the variance. The best predictors were GPA (-.36), intent to leave (.28), hours enrolled (-.16) and study skills (.09). Utility was found to have the greatest influence on intent to leave:

Morgareidge (1988) tested the model on 537 students who entered the developmental studies program at a community college. The academic variable set had moderate discriminating power, the environmental set had high discriminating power, and the combination of the two had very high discriminating power in correctly classifying students as persisters or nonpersisters. The percentage of cases correctly identified

using discriminant analysis was 66%.

Whitaker (1987) tested the model from Cooperative Institutional Research Surveys from 1,210 freshmen of which 910 were white and 300 were nonwhite. The model explained 17% of the variance for the white students and 24% for the nonwhite students. College GPA was most influential for both groups followed by utility.

Stahl and Pavel (1992) tested the model on 597 students who were enrolled in beginning reading, English, and math classes at an urban community college. The students in the sample were single and white. They found the model to be an extremely weak predictor of student attrition with a goodness-of-fit measure of .838.

Literature Review

A brief review of the empirical studies of recent citation, as well as more semiole studies that relate to these variables, are included in this review. The studies are organized according to the variable sets from the Bean and Metzner model (1985). The background and defining variables are addressed first which include: age, enrollment status, residence, educational goals, high school, performance, ethnicity, and gender. Next, from the academic variable set are: study habits, academic advising, absenteeism, major certainty, and course availability. Finally, environmental variables are addressed which include: finances, hours of employment, outside encouragement, family responsibilities, and opportunity to transfer.

Background and Defining Variables

All students bring with them certain prematriculation characteristics. The cumulative sum total of all life's experiences contribute to the student's attitudes about

college, educational and occupational goals, and life in general. Background prematriculation characteristics are important both when persistence is studied in a residential setting or in a commuter setting (Moline, 1987). Bean and Metzner (1985) felt that the most critical background variables were age, enrollment status, residence, educational goals, high school, performance, ethnicity, and gender.

Age. Slightly over 50% of students who delayed entrance into college began their studies at two-year colleges (Tinto, 1987). Factors which caused delayed entrance into college may very well continue to play a role for the adult student (Pantages & Creedon, 1978; Summerskill, 1962). For the adult, the student role is almost always secondary to family and occupational roles (Bean & Metzner, 1985; Pantages & Creedon, 1978; Pappas & Loring, 1985). However, older students tend to be highly motivated and more mature which help compensate for the other demands on their time and rusty academic skills. A recent study by Gates and Creamer (1984) found that delayed entrance increased persistence for two-year college students.

Enrollment status. Students who enroll on a part-time basis compared to full-time enrollment are more likely to drop out (Bean & Metzner, 1985; Gates & Creamer, 1984; Head, 1989; Walleri, 1981). In general, part-time students are likely to be older thus, more likely to be occupied with commitments outside of college such as marriage, family, and jobs. The involvement outside of college reduces the opportunities to participate in either social or academic experiences that are available.

Residence. Commuter students appear to differ from residential students on several key retention-related factors. Commuter students spend little time on campus outside of class when compared with residential students (Bean & Metzner, 1985). Less time on campus for commuter students leads to less contact with faculty outside of class,

less participation in extracurricular activities, and fewer friends at college (Nelson, 1982). Commuting students are more likely to be employed compared with residential students, as well as more likely to have family responsibilities.

Educational goals. The impact of students entering college undecided about their educational goals are mixed (Hossler, 1984). However, most of the research suggest that student educational goals, even changing goals, are strongly correlated with student success (Noel et al., 1986; Stennick, 1989; Tinto, 1987). Nearly 75% of entering college freshmen have ambiguous educational goals (Nolan, 1990; Tinto, 1987).

Students with low degree aspirations tend to drop out at a higher rate. Individuals often choose to leave educational institutions prior to degree completion simply because they did not intend to stay until degree completion (Rossmann & Kirk, 1970). These individuals specifically entered college to gain additional skills, learn a specific content area, and/or acquire additional course credits. Often, the motivating force is associated with occupational needs or demands (Tinto, 1987). Other students may expect to dislike college and will leave. Such attitudes tend to become self-fulfilling prophecies (Bean & Metzner, 1985; Lenning, 1982; Pascarella et al., 1983).

For the majority of nontraditional students participating in higher education, the motivation for college does not arise from anticipation of interest in learning the things that they will be learning in college, but from the recognition that education is the way to a better job and a better life than that of their parents (Cross, 1971). The vocational orientation of the twentieth century student is also evident in that students are increasingly becoming workers first and students second (Diener, 1986). Two-year college students, in particular, are more likely to leave college because of a job offer when compared with four-year college students (Fetters, 1977).

High school. High school achievement variables such as secondary school grades, class ranking, subjects and numbers of courses taken are frequently included in the attrition literature. Nationally, high school grades and rank have been found to be some of the best predictors of student persistence in higher education (Romist, 1981). Unfortunately, most of these studies used 18 to 24 year old students for the sample population. The predictive ability of these types of factors erode the further in time the student is from these high school experiences. Most of the research results did not report any significant relationship between size of high school and attrition (Pantages & Creedon, 1978).

For community college students, many did not enroll in college preparatory high school courses. Student persistence is positively related to prior enrollment in college preparatory high school courses (Gates & Creamer, 1984; Lenning, Sauer & Beal, 1981).

Performance. Prematriculation academic performance consistently has a high correlation with college grades (Pantages & Creedon, 1978). Students with lower aptitude test scores and/or lower high school grade point averages drop out at a higher rate compared with students who have high scores and/or high post-secondary GPAs (Gates & Creamer, 1984; Grosset, 1989; Zwerling, 1980). Community college students tend to enter college with both lower aptitude test scores and lower high school grade point averages compared with four-year college students. According to Roueche and Roueche (1982), over half of the entering freshmen class attending community colleges read below the eighth-grade level.

Ethnicity. Ethnic factors have been found to be related to student attrition in numerous studies. Afro-Americans, American Indians, and Hispanic students are more likely to dropout when compared with Caucasian, Asian, and Jewish students. However,

such differences tend to disappear when socioeconomic status, ability test scores, and motivation are controlled (Lenning, 1982; Tinto, 1987). Furthermore, it is fairly well documented that the majority of Hispanic, Afro-American and native American families in the United States are of low socioeconomic status (Cross, 1971). Other research indicates that the educational level of the parent(s) is more influential than parent's income or occupation. However, research findings conflict in this area. A positive relationship between student persistence and parent's level of education was found by Panos and Astin (1968), Kowalski (1977), and Tinto (1987), but no significant difference was found by Rossmann and Kirk (1970) or Pascarella and Terenzini (1980).

Two-year colleges typically attract students who come from less well-to-do families (Tinto, 1987), hence, attract a proportionately higher percentage of minority students when compared with four-year colleges.

Gender. Many researchers think that because men and women still have distinctive roles outside of college that gender does affect enrollment decisions. However, there is little empirical evidence that males and females differ significantly in their persistence patterns. Gender has been reported to interact significantly with other variables in studies of student persistence both for university students (Bean, 1980; Pantages & Creedon, 1978) and two-year college students (Pascarella et al., 1986).

For example, according to a study by Pascarella, Smart, and Ethington (1986), variables related to academic integration, institutional commitment and social integration had significant, positive, direct effects on retention for men. For women, variables related to academic integration, social integration, and socioeconomic status displayed significant, positive, direct effects on degree persistence. Secondary-school achievement had a positive direct effect on degree completion for men while commitment to the initial

institution of enrollment negatively influenced male degree completion. For men, knowing an administrator or faculty member personally had the strongest positive associations with persistence but the associations was nonsignificant for women.

Academic Variables

To be successful as a student, both skills and attitudes appropriate for academic work are needed. If a student develops proper attitudes toward integrity, delayed gratification, and values scholarship then they are likely to perform well academically. High grade-point-averages, or at least rising GPAs, indicate that successful academic integration has taken place and the likelihood of subsequent enrollment is increased. Academic variables are prominent in models of student attrition as indicators of academic integration.

Study habits. Few students are gifted enough to survive academic rigors without good study skills and study habits. Students who admitted that they possess poor study skills and study habits were found to be more likely to drop out of college (Bean & Metzner, 1985; Blustein et al., 1986; Kowalski, 1977). Older students who enter college after a lengthy absence from school often lack confidence in their ability initially and rate their study skills as deficient (Hughes, 1983).

Academic advising. Academic advising is a decision-making process that helps students realize their educational potential through the exchange and communication of information. According to some researchers, the role of academic advising is much more complex than suggested by the research and literature on this topic (Beal and Noel, 1980; Braxton et al., 1988). Most research related to academic advising measured the frequency of student usage or students' evaluation of service versus more extensive assessment.

Other indicators about academic advising such as length of contact, topics discussed, accessibility, number of registration errors, and advisor's knowledge of the institution are lacking.

For the most part, empirical studies have produced inconsistent results. Many studies, however, found that student dropouts were dissatisfied with academic advising or indicated that improved advising services would have assisted them in remaining in college (Bean & Metzner, 1985).

The influence of academic advising on student persistence is two steps removed according to the findings of the study by Braxton, Duster, and Pascarella (1988). The effect of academic advising on persistence is mediated by both academic integration and subsequent institutional commitment. However, since academic advising does exert a direct and positive influence upon academic integration, it does play a role in student retention.

Absenteeism. Absenteeism is one of the first signs that a student is dissatisfied with school, is under stress, or is having difficulty with course work. The effects of absenteeism on attrition, however, is mediated by the student's GPA. For students with high GPAs, absenteeism is not related to dropout (Bean, 1982). No study was located that examined the effect of absenteeism on the persistence of older, part-time, or commuter students.

Major certainty. Students with a major have an identity and can share values and fit in with a particular social group. They also have direction and should be able to correlate course work with subsequent employment. Unfortunately, most college students have had little opportunity to realistically address their adult future. Nearly 75% of entering college freshmen have educational and/or occupational uncertainty (Nolan, 1990; Tinto,

1987). These students enter college with the hope that they will be able to formulate a meaningful answer to this critical question. Of the students who enter college with a declared major, many will change their minds at least once. In a longitudinal, multi-institutional study conducted by Astin (1975), a change of career goals was reported by 19% of the students. However, Gordan (1984) estimates that 75% of students who enter college with a declared major will change their minds. Other studies found that older students were more certain of their academic major than traditional age students (Greer, 1980).

Course availability. This variable involves whether courses desired by students are offered by the college, scheduled at times when they are able to enroll, and have sufficient capacity for student demand. There appears to be a relationship between the students' inability to take desired courses and dropout (Brigman et al., 1982; Gorter, 1978; Johnson, 1982). Beal and Noel (1980) found from their survey of 947 colleges, both two and four-year, that course unavailability was ranked as the second highest among the 17 institutional characteristics that college administrators believed were positively associated with student attrition. Gorter (1978) cited the response "courses not offered" (p. 25) as the major reason for withdrawal by part-time but not full-time students at a community college.

Environmental Variables

These variables include a perceived (or real) lack of finances, working for long hours, lacking encouragement, family responsibilities, and a perceived opportunity to transfer. Environmental variables are factors that the institution has little control but might draw the student away from the institution. These variables are presumed to have direct

effects on attrition decisions, as well as indirect effects on dropout. For two-year institutions in particular, student departure is influenced more by external forces (Chacon, Cohen, & Strover, 1983; Weidman, 1985) and less by social events (Pascarella et al., 1983; Pascarella & Wolfe, 1985).

Finances. Although financial reasons are often given by students as the primary reason for dropping out, the validity of this response has been questioned by many researchers (Bean & Metzner, 1985). Cope and Hannah (1975) found that frequently family income did not correspond with student's listing of inadequate finances as the reason for withdrawal. They feel, along with many other researchers, that finances is a more socially acceptable reason for dropout; thus, is more frequently given.

Financial considerations also play a role in where a student chooses to attend. According to Collison (1991), more students are choosing colleges based on cost. Students who attend relatively low cost public two-year colleges are more likely to make direct departure decisions based upon short-term changes in financial status.

Students are now more sophisticated consumers who weigh the costs of attending college in terms of tuition, housing, transportation, time, forfeited income, and effort against the potential rewards of college (Noel et al., 1986). The impact of financial considerations is mediated by how the college experience is perceived. If college is viewed as irrelevant and/or unrewarding, even the slightest financial pressure may lead to withdrawal. On the other hand, when students see their college experiences as rewarding and/or having direct influence on their future, then considerable financial burdens frequently are overcome.

In terms of financial aid, receiving a scholarship or grant has a positive effect on persistence (Hossler, 1984). On the other hand, Astin (1975) found out that receiving

loans had a negative impact on persistence.

Hours of employment. Most researchers agree that students who work more than 25 hours per week have decreased chances for persistence. Currently, there is a trend for students to be working more hours. According to Diener (1986), students are increasingly becoming workers first and students second. Two-year college students in particular are both more likely to be working while in college (Tinto, 1987) and more likely to leave college because of a job offer (Fetters, 1977). However, students that work on-campus (Martin, 1985) or 20 hours a week or less (Astin, 1975) were found to have a higher persistence rate. It is believed that an on-campus job helps to develop a strong sense of being needed and belonging to the community in addition to providing financial support.

Outside encouragement. This variable relates to the extent of encouragement to remain in college received by a student from influential persons such as the parents, spouse, close friends, or off-campus employer. The degree of parental encouragement was found to be positively related to student persistence in college (Pantages & Creedon, 1978; Tinto, 1975). However, the quality of the relationship between the student and the parent relates to the impact of this variable. The better the relationship between parent and student, the more influence parental aspirations will have. For older students, family reaction to their college attendance was considered to be an important aspect of college satisfaction (Hughes, 1983; Mangano & Corrado, 1981). Several researchers acknowledged that students' close friends affected their decisions about persisting in college (Lenning et al., 1980; Pantages & Creedon, 1978; Spady, 1970). For commuter students and older students, they often retain many friendships with persons in their community who do not attend their college (Flanagan, 1976; Johnson, 1981). Employers

attitudes toward college attendance is a factor especially for older, part-time, and commuter students who are likely to be employed while attending college.

Family responsibilities. Family responsibilities are frequently cited by students who withdraw, especially by older and part-time students. Older, female commuter students with children are most likely to report family responsibilities as a major reason (Reehling, 1980). According to Hunter and Sheldon (1980), family pressures and family obligations were listed as major reasons for withdrawal by community college students. Gorter (1978) corroborated this finding for part-time community college students.

Opportunity to transfer. Many students who enter college have explicit intentions of transferring to another educational institution. In a study by Astin, Hemond, and Richardson (1982), 26% of two-year college freshmen indicated that their current college was not their first choice. Their participation at the current college is a means to an end, namely, transfer to another institution. On the other hand, commitment to the particular college that the student attends is positively related to persistence. But if students perceive that it would be difficult to transfer to another university then they would be more likely to persist (Bean, 1982).

Summary of the Literature Review

From the research just reviewed, several points can be made about the influence of other variables on attrition. A summary of these points follows.

A number of background prematriculation characteristics relate to student attrition. Older students tend to be more motivated and mature which help compensate for competing time demands and rusty academic skills. Older students are more likely to be commuter students who attend a community college on a part-time basis. Both part-

time attendance and commuting to college are associated with increased attrition. Students with low degree aspirations drop out at a higher rate as well as those who did not take college preparatory courses in high school. Ethnic factors had little influence when socioeconomic, ability test scores, and motivation are controlled. Gender does not significantly influence attrition patterns, although gender does produce indirect effects when interacting with other variables.

Academic variables are indicators of academic integration which is related to student attrition. Students with poor study skills and study habits are more likely to drop out. Inconsistent results were found related to the influence of academic advising on student attrition. Absenteeism is associated with attrition for students with low GPAs but not those with high GPAs. The majority of students who enter college are uncertain about their major. Having unclear goals is associated with increased attrition. Course availability is associated with attrition, especially for part-time students.

Environmental variables can potentially draw the student away from the institution. Finances as the reason for drop out is probably overstated. Students who have rewarding college experiences often can overcome financial burdens. Student loans produce a negative impact on persistence while grants and scholarships produce a positive impact on persistence. Students who work 20 hours a week or less, especially on-campus jobs, have reduced attrition. The encouragement to remain in college received by a student from influential persons such as the parents, spouse, close friends, or employer does relate to attrition. Employers' attitudes toward college attendance is especially a factor for older, part-time, and commuter students who are likely to be working while attending college. Older, part-time, and commuter students also report family pressures and family obligations as a major reason for withdrawal. Commitment

to the particular college that the student attends is positively related to persistence. Students who perceive difficulty in transferring to another college are also more likely to persist.

CHAPTER 3

METHODOLOGY

The theoretical framework for this study is based on the Conceptual Model of Nontraditional Student Attrition advanced by Bean and Metzner (1985). This model attempts to explain the process through which nontraditional students proceed to decisions of persistence or withdrawal from an institution of higher learning via path analysis. Basing their research on an earlier study by Fishbein and Ajzen (1975) which held that attitudes lead to intention which in turn leads to behavior, Bean and Metzner designed a model that contains four sets of variables, two outcomes, and two compensatory effects.

Bean and Metzner predicted interactions between the sets of academic and environmental variables and between academic outcomes/GPA and psychological outcomes. Their model was presented as a preliminary one intended to be modified as research efforts are carried out. They suggest that the model be used to both identify variables for study at individual institutions and to specify the relationships among elements within it.

Design

A longitudinal design was employed to allow for comparison of dropouts and nondropouts on the same measures, taken at the same time and under similar conditions. This design allowed for measurement of antecedent attributes and early institutional affect

on the attrition process. Hence, potentially attrition-related experiences and attitudes are measured at the very time that they are presumably exerting their influence (Pantages & Creedon, 1978). By including both students that would persist and those who would subsequently dropout, internal validity is increased.

Population and Sample

For this study the target population was all students who came for placement testing at Paul D. Camp Community College between July and September, 1991. This study focuses on students who start fall semester only since it is estimated that approximately 77% of all first-time college students begin then (Tinto, 1987). Since all new incoming students who enroll in a degree program must take a placement (entrance) test, virtually all new incoming students were included.

In order to obtain permission to administer the survey when students arrived for placement testing, the first step was to seek permission from the person directly in charge of this service, the Director of Student Development. Following his approval, permission was also obtained from the Dean of Instruction and Development and the College President. The Chairperson of the institutional assessment committee was consulted to help integrate this research project with the college's own research efforts.

Although support was easily obtained from the people just mentioned, there were concerns expressed as to how long the survey would take and if the survey would be administered prior to or following the placement test. Because of concerns that administering the survey following the placement test might contaminate the results, permission was obtained for administering the survey prior to placement testing.

However, the survey instrument was to be brief so that the average respondent could complete it within fifteen minutes.

Data Collection Procedures

This study relied on data that was collected both by a survey, Student Entry Questionnaire (see Appendix B), administered when perspective students arrived for placement testing and a questionnaire, Student Questionnaire (see Appendix C), that was mailed eight weeks later. When perspective students arrived to take the placement test, the purpose of the project was explained along with the fact that participation was voluntary and their responses would remain confidential. The groups were also informed about the second survey that would be mailed later.

The second student survey along with a cover letter (see Appendix A), a free coffee packet, and self-addressed stamped envelope were mailed eight weeks following the beginning of classes. The surveys were numbered to allow for identification for nonrespondents for follow-up contacts. Of the 148 volunteers who completed the Student Entry Survey, 62% ($n = 92$) completed the second survey upon first mailing.

One week following the deadline for the return of the questionnaires, an additional copy of the Student Questionnaire with a cover letter, and a self-addressed stamped return envelope were sent to the 56 individuals who had not returned the survey. Attempts were made concurrently to contact students via telephone to ensure that the survey had been received and to solicit support for completing and returning the surveys. In response to the follow-up mailing and telephone contacts, 24 completed surveys were subsequently returned. As a result, the total number of completed questionnaires was 118 (80%).

The quantitative data was coded where the higher the number associated with each individual question then the higher the potential for dropout.

Instrumentation

The survey instrument was a modified version of the Student Attitude and Student Entry Questionnaires developed by Bean (1983). Permission was obtained from the author to both modify and administer the questionnaires (see Appendix D). Questions which were not pertinent to commuter students (such as whether they live on campus) were deleted. The modified questionnaires were piloted on a sample of students who were already attending Paul D. Camp Community College. The respondents were interviewed immediately after completing the questionnaires and asked to report their understanding of the meaning of each question in their own words. A few questions were revised and retested with the sample until they were clearly understood by the members in the pilot sample.

To assess background and defining variables among respondents, questions from the Student Entry Questionnaire and Student Survey addressed age, enrollment status, educational goals, high school, performance, ethnicity, and gender (see Table 3.1). Since information regarding age, ethnicity, enrollment status, and gender was available through the college's Student Information System, that information was obtained from the computer database. Examples of items that focused on the educational goals of students related to attendance at Paul D. Camp Community College in particular were questions such as "Do you expect to be enrolled at this institution during the second semester of this year?" and "Do you expect to be enrolled at this institution one year from this fall?"

The second variable set was academic related variables. To address academic

variables among respondents, questions focused on study habits, academic advising, absenteeism, major certainty, and course availability. For example, in measuring study habits, questions addressed the amount of time involved in attending classes and studying, as well as questions on motivation to study and homework procrastination.

For measuring academic advising, a number of questions were asked that relates to academic advising in a broad sense and whether the advising came from faculty members versus counselors since considerable student attrition research focuses on faculty contact outside the classroom.

The third variable set consists of environmental variables. Included in this set were questions related to finances, hours of employment, outside encouragement, family responsibilities, and opportunity to transfer. As examples of questions in the area of finances were items regarding certainty about having funds to continue your education, need to find a job, and parental financial support for college attendance.

For outside encouragement, questions related to people such as best friends, brothers or sisters, parents, high school teachers, high school staff, the persons who are most important to you right now, and your family who provide encouragement.

Research Questions

This study addresses primarily the following question. Can the patterns of students leaving community colleges be accurately predicted using Bean and Metzner's (1985) model of attrition?

In addition, the following subsidiary questions were investigated.

Q1. What influence does the selected sets of environmental and academic

variables have on the attrition process for rural community college students?

- Q2. How much influence do individual variables within each set have on predicting students who ultimately leave?
- Q3. What is the relative strength of the three sets of variables in predicting attrition?
- Q4. What is the interactive effect of the academic and environmental variables in predicting attrition?
- Q5. How do the persister and nonpersister groups differ according to the variables examined?

Hypotheses

- 1. The environmental set of variables will exert a stronger effect in predicting attrition than the academic set of variables.
- 2. The interactive effect of the academic and environmental variables will not be a significant discriminate function in predicting attrition.

Statistical Treatment

The existence of multiple independent variables suggested that the appropriate statistical procedure for studying the strength of the variables might be a multiple regression analysis or a discriminant analysis. Stepwise multiple regression analysis was used to determine a stratification of predictive value for the variables examined. Discriminate analysis was used to determine the predictive value of the independent variables based upon a single criterion variable, in this case, dropout. T-tests were used

to determine the level of statistical significance between the sample means.

Definition of Terms

For the purpose of this study, the following definitions apply.

Academic variables: The set of variables defined by Bean and Metzner (1985) in their conceptual model of nontraditional student attrition that includes: students' self-rating of study skills and habits, perceptions of quality of academic advising, self-rating of amount of absenteeism, certainty of academic major, and perceptions of course availability.

Dropout: A student who does not enroll the second semester after initial enrollment.

Environmental variables: The set of variables defined by Bean and Metzner (1985) in their conceptual model of nontraditional student attrition that includes: the students' perception of their financial situation, weekly hours employed, amount of encouragement received from significant others (spouse, girlfriend or boyfriend, parents, employer, other friends), family responsibilities, and the perceived opportunity to transfer to another institution.

Persistence: The behavior whereby a student chooses to remain in college and re-enrolls for a subsequent semester.

Nontraditional student: A student who has at least one of the following characteristics: is enrolled on a part-time basis (less than 12 semester credit hours), is employed while attending school, does not reside on campus, or is older than 24 years of age.

Rural community college: A postsecondary educational institution characterized

by an open admission policy, offering general and vocational courses, and concern for meeting the academic and economic needs of a non-urban and farming community.

Summary

In summary, multiple regression was used to determine the predictive value of variables, from the Bean and Metzner (1985) model of nontraditional student attrition, in predicting students whom will drop out at a small, rural community college. It was hypothesized that the environmental set of variables will exert a stronger effect in predicting dropout than the academic set, while the interaction between the two sets will not be a significant effect.

Table 3.1

Individual Variables by Survey Questions

Variables	Student Entry Questionnaire	Student Questionnaire
Background & Defining		
Enrollment Status	2	
Educational Goals	3, 4, 15, 16, 21, 29, 34	
Commitment to PDCCC	25, 26, 27, 28, 35, 36, 69	
High School Prep.	52	
Performance in H.S.	12, 13	
Academic		
Study Habits	5, 6, 8, 54, 57, 67, 68	3, 4, 6, 8, 25, 41, 73, 74
Academic Advising	23	54 – 65
Absenteeism	14	2
Major Certainty	17, 18	16, 17
Course Availability	53	24
Environmental		
Finances	19, 22, 55	18, 35
Hours Employed	7	5
Outside Encouragement	37, 38, 39, 40, 41, 42, 43	34, 40
Family Responsibilities		42
Opportunity to Transfer	20, 30	

CHAPTER 4

ANALYSIS OF RESULTS

As stated previously, the purpose of this study was to learn more about student attrition for students who attend small, rural community colleges. In order to accomplish that goal, information was gathered from people who took the entrance test during fall registration at Paul D. Camp Community College. After completing the Student Entry Questionnaire (SEQ), a follow-up questionnaire named Student Questionnaire (SQ) was mailed eight weeks later. By obtaining information from the same subjects at a later point, information about early college attendance affects could be considered along with prematriculation characteristics.

Everyone who came in for placement testing ($n = 148$) completed the Student Entry Questionnaire. Of this group, 118 Student Questionnaires were returned after being mailed. Two questionnaires were eliminated due to incomplete responses. Therefore, this study yielded 116 usable questionnaires which represented a final usable rate of 78%.

This chapter first presents the findings of the subjects' background and demographic, academic, and environmental variables (see Tables 4.1 through 4.4). Following the discussion of participant characteristics, the results relating to the major research question and the four subsidiary questions are reported and analyzed.

Background and Demographic Variables

Age. The age distribution of the sample very closely resembles national trends

(see Table 4.1). About half of the students who attend community colleges in the United States are older than age 24 (Cohen & Brawer, 1989; National Center for Educational Statistics, 1992; Palmer, 1987). Nationally, the modal age is 19 and the media age is 23 years old. In this study, the 27-31 year old age group had the highest dropout rate (41%) followed by the 22-26 year old group which had almost a 38% dropout rate. The dropout rate was lowest for the 32-36, 42-46, 47-51, and 52-58 year old age groups (0%). With the exception of the 37-41 year old group, the likelihood for dropout decreased with the increase of age for students. The traditional age group (17-21 years old) also had a low dropout rate of approximately 15%.

Number of classes attempted. The number of classes attempted by students was fairly evenly distributed except for those attempting only one class (see Table 4.1). About half of the sample attended school on a part-time basis. Nationally, part-time students outnumber full-time students at community colleges (Cohen & Brawer, 1989; National Center for Educational Statistics, 1992; Palmer, 1987). In Virginia's community colleges, 73% of the students enrolled attended part-time in 1991 (Graham, 1991). The larger the number of classes attempted, the smaller the rate of dropout and vice versa. Consistent with other studies (Hollins & Smith, 1986; Tichenor, 1986), part-time students who attend community colleges are more likely to drop out when compared with full-time students.

Degree aspiration. The next characteristic investigated was degree aspiration (see Table 4.2). A total of 14 questions from the two surveys related to student's educational goal. When asked about the highest degree expected to be received, respondents indicated their educational goal from 1 to 5 where 1 represents "not seeking a degree" and 5 represents "seeking a graduate degree." Respondents indicated their choice both when they came in for placement testing on the SEQ and eight weeks later on the SQ.

According to this study, the most represented category was 4.1 - 4.5 where 4 represents "bachelor degree" and 5 represents "graduate degree." Almost 40% (n = 59) of the respondents reported their degree aspiration in this category. Nineteen percent of the students in this category (n = 11) did not return the subsequent semester. Nationally, 80% of full-time students aspired to at least a bachelor's degree while the percentage drops to around one-third for all entrants (Astin et al., 1988). Montemayor et al. (1985) found that traditional-age community college students tend to have higher educational goals. The second most represented category was 4.6 - 5. Twenty-three percent (n = 34) indicated this category as their aspired degree. Eighteen percent of the students in this category (n = 6) did not re-enroll the following semester. The 3.6 - 4 category closely followed with 22% (n = 33) reported in this category. Eighteen percent (n = 6) of the students in this group did not return the following semester. While 3 represented "associate degree" and 2 represented "certificate/career studies," almost 11% (n = 16) of the respondents reported their degree aspiration in the 3.1 - 3.5 category while only 4% reported in the 2.67 - 3 category. The percentage of respondents not returning was highest for those with lower degree aspirations. The dropout rate was over 30% for the two lower degree aspiration groups. Hollins and Smith (1986) and Rajasekhara (1986) found that students not enrolled in a degree or certificate program were much less likely to return the subsequent semester.

Commitment to attend Paul D. Camp Community College. Seven questions from the Student Entry Survey related to commitment to attend Paul D. Camp Community College (PDCCC) (see Table 4.2). On a scale from 1 to 5, 1 represents "definite plans not to return to PDCCC" and 5 represents "definite plans to return to PDCCC." Just under half (46%) indicated a commitment to return to PDCCC. Almost one-fourth (24%) indicated

uncertainty about their future plans. A surprise findings was that the dropout rate was lowest for those who expressed ambivalence about returning to PDCCC, for those indicating 3.0 - 3.49 the dropout rate was under 9%. The scores on both extremes were associated with the next lowest dropout rate. For those in the 4.0 - 4.5 category the rate was just under 14%; for those in the 1.0 - 1.99 category the rate was just over 14%.

High school preparation. Although widely reported that community college students are poorly prepared for college, it was still somewhat surprising to find out the extent of lack of enrollment in college preparatory classes in high school. By far, the largest percentage of respondents indicated enrolling in only one college preparatory class in high school (see Table 4.3). Forty-four percent ($n = 64$) of the respondents indicated this category. Twenty percent ($n = 13$) of the respondents in this category did not subsequently return. The second most represented category was three college preparatory classes in high school. Almost 23% ($n = 33$) of the respondents reported that they were in this category. Eighteen percent of the respondents in this group ($n = 6$) did not return the following semester. The two college preparatory classes category followed with 13% ($n = 19$) in this category. Twenty-six percent of the respondents in this category ($n = 5$) did not return. Ten percent of the respondents ($n = 15$) had enrolled in four college preparatory classes in high school. Almost 7% ($n = 1$) did not return the following semester. The fewest percentage of respondents indicated enrolling in five college preparatory classes in high school. Ten percent ($n = 14$) of the respondents indicated this category. Very much a surprise, this group had the largest percentage not returning. Twenty-nine percent ($n = 4$) of the respondents did not return.

Performance in high school. According to this study, the vast majority of the respondents indicated earning B's and C's in high school (see Table 4.3). Sixty-three

percent ($n = 92$) of the respondents indicated this category. Twenty-one percent ($n = 19$) of the respondents in this category did not return the subsequent semester. According to Astin et al. (1988), the majority of students entering community colleges indicated making A's or B's in high school. Nationally, 60% of the students indicated making mostly B's in high school while 12% indicated making mostly A's. However, the research findings of El-Khawas (1988) indicated that only 39% indicated making C's or better in high school. The second most represented category indicated making C's and D's in high school. Twenty-two percent ($n = 32$) of the respondents fell into this category. Of this group, 19% did not re-enroll ($n = 6$). The next largest percentage of respondents indicated making A's and B's in high school. Almost 14% ($n = 20$) of the respondents reported that they were in this category. As expected, this group had the fewest number of students who dropped out. Ten percent ($n = 2$) did not re-enroll the subsequent semester. Conversely, the respondents who reported earning primarily D's and F's in high school both represented the fewest respondents and largest dropout rate. Only 2% ($n = 3$) indicated being in this category. Of this group, 67% ($n = 2$) did not return the next semester.

Ethnicity. Seventy percent ($n = 104$) of the respondents were Caucasian. Thirty percent ($n = 44$) of the respondents were Afro-American (see Table 4.4). This is very representative of the enrollment pattern at the college over the last five years. For Virginia in 1986, over 82% of community college students were Caucasian and 12% were Afro-American (National Center for Education Statistics, 1992). The dropout rate for both groups was practically identical. Twenty percent ($n = 21$) of the Caucasian respondents did not re-enroll compared to 21% ($n = 9$) of the Afro-American respondents.

Gender. Fifty-nine percent ($n = 87$) of the respondents were female; 41% ($n = 61$)

were male (see Table 4.4). Nationally, 53% of all community college students were women in 1987 (Palmer, 1987). Again, this is very representative of the enrollment pattern at the college over the last five years. Student attrition was higher for men than the women. Twenty-six percent ($n = 16$) of the men did not return the subsequent semester compared with 16% ($n = 14$) of the women not returning.

Academic Variables

Study habits. The persister group indicated the intention to spend slightly more time attending classes and studying when compared to the nonpersister group. Where 3 represents "6-10 hours" and 4 represents "11-20 hours," the mean for the persister group was 3.31 in response to hours per week attending classes and 3.25 for hours studying. The nonpersister group had a mean of 3.0 for both anticipated hours per week attending classes and hours for studying. Both groups indicated spending actually less time attending classes and studying when surveyed during mid-semester. The mean for the persister group was 3.10 for hours attending classes and 2.90 for hours studying. The nonpersister group had a mean of 2.9 for hours attending classes and 2.40 for hours studying.

Both groups indicated the expectation of spending less time dating or attending parties than attending classes or studying. Where 4 represents "1-5 hours per week" and 5 represents "no hours per week," the persister group had a mean of 4.07 on the initial survey and follow-up survey. The nonpersister group had a mean of 4.10 on the initial survey and 4.18 on the follow-up survey.

In response to completing homework on time, the scores increased for the persister group and decreased for the nonpersister group between taking the first and

second survey. Where 4 represents "to a great extent" and 3 represents "to some extent," the mean for the persister group was 4.03 on the first survey and 4.25 on the second. For the nonpersister group, the mean was 4.10 on the first survey and 3.82 on the second.

The scores also declined in response to being motivated to study for both groups between taking the first and second survey. The mean was 3.75 on the first survey and 3.44 on the second survey for the persister group. The mean was 3.69 on the first survey and 3.18 on the second survey for the nonpersister group.

Both groups indicated spending more time studying in college when compared with high school. Where 3 represents "about the same" and 4 represents "more," the mean was 3.87 for the persister group and 3.73 for the nonpersister group.

Academic advising. Students from both groups indicated that they had received academic advising from counselors and faculty members during the first eight weeks of the semester. Students tended to see faculty members more frequently than counselors. Where 1 represents "1 contact" and 2 represents "2-3 contacts," the persister group averaged 1.98 and 1.84 respectively, in response to meeting with faculty and counselors for academic advice. The nonpersister group averaged 1.81 with faculty and 1.44 with counselors. For career discussion, the persister group averaged 1.85 for meeting with faculty and 1.79 for meeting with counselors. The nonpersisters average response was 1.81 with faculty and 1.63 with counselors. Students also met with faculty members more frequently than counselors to discuss personal problems. The persister group averaged 1.46 and 1.33 respectively, in response to meeting with faculty and counselors to discuss personal problems. The nonpersister group averaged 1.09 with both faculty and counselors.

Absenteeism. In regards to absenteeism, the persister group reported fewer

absences than the nonpersister group. Where 5 represents "no absences" and 4 represents "about one absence a week," the persister group reported 4.53 absences while the nonpersister group averaged 4.1.

Major certainty. Both groups were pretty certain about their major certainty. In fact, there was not even one "very uncertain" response for the persister group. Where 4 represents "fairly certain" and 5 represents "very certain," the persister group averaged 4.39 prior to enrollment and 4.24 after eight weeks. So, certainty about major choice actually declined a little after taking classes eight weeks. The nonpersister group averaged 4.1 prior to enrollment and 4.09 after eight weeks.

Course availability. Little difference was found between the groups in regards to course availability rating. The persister group averaged 3.91 compared with 3.90 for the nonpersister group. Three corresponds with "to some extent" and 4 corresponds "to a great extent" of desired courses being available.

Environmental Variables

Finances. Financial concerns were more evident for the nonpersister group although moderate financial concerns were found for both groups. Where 2 indicates "fairly uncertain," 3 indicates "neither certain nor uncertain," and 4 indicates "fairly certain," the persister group averaged 3.92 compared with 3.63 for the nonpersister group in response to how certain they were that funds would be sufficient to continue education. The nonpersister group was fairly uncertain about financial support from parents to attend college. In response to a question about the willingness of parents to pay the costs of attending college, the persister group averaged 2.70 while the nonpersister group averaged 2.20. The results concerning receiving financial aid were mixed. Although the

results were close to mid-range (2.85 for the persisters and 2.90 for the nonpersisters) for both groups, the standard deviation was 1.81 for the persister group and 1.92 for the nonpersister group. So, students were likely to have indicated being either very uncertain or very certain about receiving financial aid.

Hours of employment. The persister group was either more likely to be employed or tended to work more hours while in school. Where 2 indicates working "1-10 hours a week" and 3 indicates "11-20 hours a week," the persister group averaged 2.80 while the nonpersister group averaged 2.40.

Outside encouragement. Students received the most encouragement from their family for attending college. Both the persister and nonpersister groups received the greatest extent of encouragement from their family. Where 1 represents "not at all or does not apply," 2 represents "to a small extent," 3 represents "to some extent," 4 represents "to a great extent," and 5 represents "to a very great extent," the following results were found. In response to the question, "Does your family approve of your attending this school?", the persister group averaged 4.16 and the nonpersister group 4.17. The person(s) who is(are) most important right now to the respondent provided the second most encouragement to students. In response to this question, the persister group averaged 3.27 compared with 3.75 for the nonpersister group. When responding to the encouragement of parents, the persister group averaged 3.05 while the nonpersister group averaged 2.68.

Best friends, brothers or sisters, and high school teachers provided less encouragement. Using the same scale, best friends were rated at 2.41 for the persister group and 2.58 for the nonpersister group. Brothers or sisters were rated at 2.24 for the persister group and 1.62 for the nonpersister group. High school teachers were rated at

2.05 for the persister group and 1.79 for the nonpersister group.

Family responsibilities. Outside responsibilities, such as family responsibilities, were found to interfere very little with the education of students. Where 1 represents "not at all or does not apply" and 2 represents "to a small extent," the persister group averaged 1.45 and the nonpersister group averaged 1.40.

Opportunity to transfer. Somewhat of a surprise, the nonpersister group indicated that it might be more difficult to transfer to another college compared to the persister group. The nonpersister group averaged 3.63 while the persister group averaged 2.54 where 2 indicates "fairly easy to transfer," 3 indicates "neither easy nor difficult," and 4 indicates "fairly difficult to transfer."

Research Question #1

The first major research question examined the extent that students who drop out of a small, rural community college do so in a way consistent with the Bean and Metzner Model of Nontraditional Student Attrition (1985). Based upon a discriminant analysis using all eighteen variables, the model did predict with 92% accuracy (see Table 4.5). The likelihood of correct prediction is greater when persistence, as opposed to attrition, is predicted. When persistence was predicted, the model was accurate 111 times and incorrect 5 times. However, when attrition was predicted, the model was correct 21 times and incorrect 7 times.

Subsidiary Question #1

The first subsidiary question examines the relationship between the background, environmental, and academic variable sets on the attrition process. Stepwise multiple

regression analysis was used to determine which variables were significant at the .05 level for predicting student attrition (see Table 4.6). Of the eighteen variables entered into the multiple regression equation, only three variables met the .05 significance level for entry into the model. Two of the variables found significant came from the background and defining variable set and both related to educational goals. The other variable found significant came from the environmental variable set and related to opportunity to transfer. None of the variables in the academic variable set were found to be significant.

The strongest predictor of student attrition in this sample was commitment to attend Paul D. Camp Community College (PDCCC). In step 1 of the stepwise regression procedure, commitment to attend PDCCC accounted for over 31% prediction where partial $R^2 = .3140$. The next best predictor variable was perceived opportunity to transfer. Opportunity to transfer added over 2% more to the prediction accuracy where partial $R^2 = .0273$. These two variables combined provide over 34% predictability where $R^2 = .3413$. The third strongest predictor was student's educational goals. The educational goal variable added just over 3% to the prediction where partial $R^2 = .0307$. These three variables combined provide for over 37% prediction where $R^2 = .3719$.

Subsidiary Question #2

The second subsidiary question addresses the influence of individual variables within each set in terms of prediction of students who ultimately leave. As previously noted, only three variables met the .05 level of significance. The strongest predictor for student re-enrollment was commitment to enrollment at Paul D. Camp Community College (see Table 4.7). It was significantly and positively correlated with student retention. Educational goals of students other than commitment to attend PDCCC were also

significantly related to attrition. Both of these variables are located within the background and defining variable set.

The second best predictor variable was perceived opportunity to transfer. This was the only significant variable found within the environmental variable set. None of the academic variables were found to be significant.

Subsidiary Question #3

The third subsidiary question addresses the relative strength of the three variable sets examined in predicting attrition. None of the variables in the academic variable set were found to be significant. Variables related the student's educational goals from the background and defining variable set were found to be the best predictors of student attrition. Commitment to attend Paul D. Camp Community College accounted for over 31% of the variability in re-enrollment (partial $R^2 = .3140$). The student's educational goals variable added over 3% to the prediction where partial $R^2 = .0307$. Combined, these two variables from the background and defining variable set account for .3447 prediction. On the other hand, perceived opportunity to transfer added over 2% to the prediction accuracy where partial $R^2 = .0273$. Thus, the background and defining variable set provided the most powerful prediction value. The environmental variable set provided the next best prediction value. None of the academic variables were found to be significant.

Subsidiary Question #4

The fourth subsidiary question examines the interactive effect of the academic and environmental variables for predicting attrition. As mentioned earlier, none of the variables in the academic variable set were found to be significant. Thus, according to this study,

the variables within the academic variable set does not significantly affect the variables within the environmental variable set. The opportunity to transfer variable was the only variable in the environmental variable set found to be significant.

Subsidiary Question #5

The fifth subsidiary question relates to the differences between the persister and nonpersister groups according to the eighteen variables examined. Comparisons between the two groups were made using T-tests.

Background and Defining Variables

Age group. The largest group was 17-21 years of age for both the persister and nonpersister groups. Everyone in the 32-36, 42-46, 47-51, and 52-58 age groups persisted. Thus, it appears that as students get older then they are more likely to persist. The largest group of nonpersisters was the 27-31 age group followed by the 22-26 age group. Students in these groups are more likely to have recently become financially independent of their parents, be working full-time in relatively new jobs, and be involved in serious relationships or new marriages.

Number of classes attempted. There was an inverse relationship between the number of classes attempted and the rate of attrition. The greater the number of classes attempted, the better the chance for persistence. The fewer the number of classes attempted, the greater the chance for nonpersistence.

Educational goals. The persister groups did have a slightly higher mean score related to their highest degree expected to be received when compared with the nonpersister group. The mean score for the persister group was 4.197 where 4

represents "expectation of earning a bachelors degree" and 5 represents "expectation of earning a graduate degree." The mean score for the nonpersister group on this scale was 4.061. The standard deviation was slightly higher for the nonpersister group when compared to the persister group with the values being 0.59 and 0.51 respectively. The range of score was the same, 2.67 - 5.00, for both groups.

Educational goals related to intention to attend Paul D. Camp Community College in particular were examined separately. The mean score for the persister group was found to be much higher compared with the nonpersister group according to this variable. On a scale where 5 represents "definite expectation to continue at PDCCC" and 1 represents "expectation not to continue at PDCCC," the mean score of the persister group was 4.889. Thus, the persister group had very definite intentions of continued enrollment at PDCCC. The mean score for the nonpersister group was 3.281. Where 3 represents "uncertainty about expectation to continue at PDCCC," the mean score for this group indicates a very ambivalent attitude (from the onset) towards attending the college. The standard deviation scores for the nonpersister group was smaller, 0.70, compared with 0.96 for the persister group. The range of scores for the persister group was 2.86 to 6.57. The range of scores for the nonpersister group was 1.57 - 4.29.

High school. Over half of the students (57%) in the sample reported taking only one or two college preparatory classes in high school. Twenty percent of those who only took one high school preparatory class did not re-enroll the following term while 26% of those who took two college preparatory classes did not return. The dropout rate remained fairly high for those who took three college preparatory classes in high school but dropped substantially for those who took four preparatory classes. Of those who took four college preparatory classes in high school, only 7% did not return the subsequent

semester. This group had just under 7% not re-enroll. However, those that took five college preparatory classes in high school had the highest attrition rate. Almost 29% of this group did not return. Perhaps students who are best prepared in high school to attend college are more likely to transfer from a community college early. Or, perhaps this group felt more incongruence with the other students.

High school performance. Students that reported making mostly A's and B's in high school tended to re-enroll the subsequent semester. The dropout rate for this group was only 10%. On the other hand, students that reported making mostly D's and F's in high school tended not to re-enroll the subsequent semester. The group had the largest dropout rate (67%).

Ethnicity. Seventy percent of the sample was Caucasian and 30% was Afro-American. The dropout rate was the same for both groups (20%).

Gender. Forty-one percent of the sample was male and 59% was female. Men had a higher dropout rate when compared to the women. The dropout rate for men was 26% while the dropout rate for women was 16%.

Academic Variables

Study habits. Little difference was found between persisters and nonpersisters on measures of study habits. The mean value was 2.91 for the persisters and 2.81 for the nonpersisters.

Academic advising. The students in the sample tended to see faculty slightly more frequently than counselors. The persister group also met more frequently for academic advice. Of those who saw faculty members for academic advising, the mean score was 1.70 for those who re-enrolled compared with 1.48 for those that did not re-enroll. Of

those who saw counselors for academic advice, the mean score was 1.47 for those who re-enrolled but was 1.21 for those who did not re-enroll.

Absenteeism. The persister group was absent from class less often than the nonpersister group. Where 5 represents "not missing any classes" and 4 represents "missing only one class," the mean was 4.49 for the persister group compared to 4.20 for the nonpersister group.

Major certainty. The persister group was slightly more certain about their major choice compared to the nonpersister group.

Course availability. There was no difference indicated between the persister and nonpersister groups in terms of courses being available that they desired to take. The mean score was 3.91 for the persister group and 3.93 for the nonpersister group.

Environmental Variables

Finances. The persister group was less uncertain about having the funds to continue in school compared with the nonpersister group. Where 3 represents "neither certainty nor uncertainty" and 2 represents "fairly uncertain," the mean for the persister group was 3.21 compared to 2.32 for the nonpersister group.

Hours of employment. The persister group was slightly more likely to work or work more hours compared to the nonpersister group. Where 2 represents "working 1-10 hours" and 3 represents "working 11-20 hours," the persister group mean score was 2.8 compared to 2.4 for the nonpersister group.

Outside encouragement. The persister group received more encouragement than the nonpersister group from siblings, parents, high school teachers, and high school staff while the nonpersister group received more encouragement than the persister group from

best friends and significant others. Both groups indicated their family as the major source of encouragement. The mean score was almost identical for both groups on this measure, 4.16 for the persisters and 4.17 for the nonpersisters.

Family responsibilities. Both groups indicated about the same amount of interference from outside responsibilities such as families. The mean was 1.46 for the persister group and 1.40 for the nonpersister group.

Opportunity to transfer. Somewhat of a surprise, the nonpersister group indicated the perceived difficulty to transfer to a greater extent than the persister group. On a scale of 1 to 5, 1 represents "college transfer as being very easy," 2 represents "fairly easy," 3 represents "neither easy nor difficult," 4 represents "fairly difficult," and 5 represents "very difficult." The mean score of the nonpersister group was found to be slightly higher compared with the persister group. The mean score for the nonpersister group was 2.57 while the mean score for the persister group was 2.55. The standard deviation for the nonpersister group was 1.17; the standard deviation for the persister group was 1.06. The range of scores for the two groups were identical, 1.00 - 5.00 for both.

Table 4.1

Background and Defining Variables

Characteristic	Frequency	Percent	Re-enrolled	Didn't Re-enroll	Dropout %
Age Group					
17 – 21	76	51.4	65	11	14.5
22 – 26	24	16.2	15	9	37.5
27 – 31	17	11.5	10	7	41.2
32 – 36	12	8.1	12	0	0
37 – 41	9	6.0	6	3	33.3
42 – 46	6	4.1	6	0	0
47 – 51	3	2.0	3	0	0
52 – 58	1	0.7	1	0	0
Number of Classes Attempted					
1	8	5.41	5	3	37.5
2	35	23.65	23	12	34.3
3	27	18.24	22	5	18.6
4	39	26.35	33	6	15.4
5	39	26.35	35	4	15.4

Table 4.2

Background and Defining Variables

Characteristic	Frequency	Percent	Re- enrolled	Didn't Re-enroll	Dropout %
Degree Aspiration					
2.67 – 3	6	4.0	4	2	33.3
3.1 – 3.5	16	10.8	11	5	31.3
3.6 – 4	33	22.3	27	6	18.2
4.1 – 4.5	59	39.9	48	11	18.6
4.6 – 5	34	23.0	28	6	17.6
Commitment to Attend Paul D. Camp Community College					
1.0 – 1.99	7	4.7	6	1	14.3
2.0 – 2.49	16	10.8	12	4	25.0
2.5 – 2.99	21	14.3	13	8	38.0
3.0 – 3.49	35	23.6	32	3	8.6
3.5 – 3.99	32	21.6	23	9	28.1
4.0 – 4.5	37	25.0	32	5	13.5

Table 4.3
Background and Defining Variables

Characteristic	Frequency	Percent	Re- enrolled	Didn't Re-enroll	Dropout %
College Preparatory Classes in High School					
1	64	44.1	51	13	20.3
2	19	13.1	14	5	26.3
3	33	22.8	27	6	18.2
4	15	10.3	14	1	6.7
5	14	9.7	10	4	28.6
Grades Earned in High School					
1 (D's & F's)	3	2.0	1	2	66.7
2 (C's & D's)	32	21.8	26	6	18.8
3 (B's & C's)	92	62.6	73	19	20.7
4 (A's & B's)	20	13.6	18	2	10.0

Table 4.4

Background and Defining Variables

Characteristic	Frequency	Percent	Re— enrolled	Didn't Re—enroll	Dropout %
Ethnicity					
Caucasian	104	70.3	83	21	20.2
Afro—American	44	29.7	35	9	20.5
Gender					
Male	61	41.2	45	16	26.2
Female	87	58.8	73	14	16.1

Table 4.5
Prediction of Student Dropout
(Research Question #1)

	Re-enroll	Percent	Dropout	Percent
Predicted	118	100.0	26	100.0
Actual	111	94.1	21	80.8
Error	7	5.9	5	19.2

Table 4.6

**Predictors of
Student Attrition in a Community College Environment
(Subsidiary Question #1)**

Variables Entered	B Value	STD Error	Type II SS	F	Prob > F
Commitment to Paul D. Camp Community College	-0.2262	0.0256	7.9242	78.31	0.0001
Educational Goals	0.1468	0.0562	0.6916	6.83	0.0099
Opportunity to Transfer	-0.0621	0.0200	0.9736	9.62	0.0023

Table 4.7
 Predictors of
 Community College Student Attrition
 (Subsidiary Question #2)

Variable Entered	Partial R ²	Model R ²
Step 1		
Commltment to Attend Paul D. Camp Community College	0.3140	0.3140
Step 2		
Opportunity to Transfer	0.0273	0.3413
Step 3		
Educational Goals	0.0307	0.3719

Table 4.8

Comparison Between Persister & Nonpersister Groups

Variable	Persister			Nonpersister		
	Mean	S.D.	Range	Mean	S.D.	Range
Educational Goals	4.197	0.51	2.67–5.00	4.061	0.59	2.67–5.00
Commitment to Paul D. Camp Community College	4.889	0.96	2.86–6.57	3.281	0.7	1.57–4.29
Opportunity to Transfer	2.547	1.06	1.00–5.00	2.571	1.17	1.00–5.00

Table 4.9
Mean Values of Persister & Nonpersister Groups
(Subsidiary Question #5)

	Re- enrolled	Didn't Re-enroll
Academic Variables		
Study Habits	2.91	2.81
Faculty advising	1.70	1.48
Counselor advising	1.47	1.21
Absenteeism	4.49	4.20
Major certainty	4.24	4.09
Course availability	3.91	3.93
Academic Variable		
Finances	3.21	2.32
Hours of Employment	2.80	2.40
Outside Encouragement		
Best Friends	2.42	2.59
Sibling(s)	2.25	1.62
Parents	3.06	2.69
H.S. Teachers	2.05	1.79
H.S. Staff	1.89	1.59
Significant Other	3.28	3.76
Family	4.16	4.17
Family Responsibilities	1.46	1.40
Opportunity to Transfer	2.54	2.57

CHAPTER 5

SUMMARY AND CONCLUSIONS

Summary

A clear understanding of why students chose to leave college prior to degree completion is paramount for institutions to develop strategies to address this situation. The question extends beyond just simply how to retain students. The real challenge is how to retain students who can meet the academic challenge, would like to continue studies, and would benefit from an education at a particular institution. And, of all the many factors that contribute to student withdrawal, which aspects of the student's experience that the institution has some control promote retention.

The intent of this project was to learn more about student departure in a little-researched area, namely, small, rural community colleges. Such colleges frequently lack the resources that allow for in-depth institutional research. The Bean and Metzner Model of Nontraditional Student Attrition (1985) seemed to have potential for guiding the study, although no research could be located where this model had been tested in a small, rural community college environment.

In addition to testing the Bean and Metzner Model (1985) in this environment, this study investigated five subsidiary questions. The first examined the influence of selected sets of background, environmental, and academic variables on the attrition process for rural community college students. The second question examined the individual variables within each of the above sets in terms of influence for predicting students who will

ultimately leave. The third question examined the strength of prediction for each of the three sets when compared with each other. The fourth question examined the interactive effect of the background, academic, and environmental variables in predicting attrition. The fifth question examined the difference between the persister and nonpersister groups according to the variables examined.

To address these questions, a longitudinal design was employed. Multiple regression was used to determine the predictive value of variables from the Bean and Metzner Model of Nontraditional Student Attrition (1985). The step-wise regression procedure entered each of the predictor variables in order of strength, re-evaluating each variable at each stage to determine the extent of reduction in the unexplained variance. A discriminant analysis was used as well to confirm the findings.

Based on the responses from 148 volunteers who completed the Student Entry Survey during the fall of 1991 at Paul D. Camp Community College, the following findings are made.

First and foremost, this study revealed that the Bean and Metzner Model of Nontraditional Student Attrition (1985) does have value for predicting student attrition in a small, rural community college setting. In this investigation, it was found that the model did predict with 92% accuracy.

The five subsidiary questions also yielded interesting results. The strongest predictor of student attrition in this sample was commitment to attend the institution where enrolled. The next best predictor variable was perceived opportunity to transfer. The third strongest predictor was student's educational goals. Of all the variables examined, these three variables were the only variables that met the .05 level of significance. The background and defining variable set provided the most predictive value while the

environmental variable set provided the next best predictive value. None of the variables within the academic variable set were found to be statistically significant. Since none of the variables within the academic set were significant, it follows that the variables within the academic variable set do not significantly effect the variables within the environmental set.

There were differences found between the persister and nonpersister groups according to the variables examined. The persister group had higher mean scores related to their educational goals and intention to attend Paul D. Camp Community College. However, somewhat of a surprise, the mean score of the nonpersister group was found to be slightly higher in perceived difficulty in transferring to another college.

Limitations of the Study

1. This study was carried out at one institution that was not randomly selected for only one semester. Follow-up studies of a longitudinal design at this institution as well as other institutions would increase the efficiency of the model. Longitudinal studies would be of particular importance, as the process of attrition of nontraditional students may be significantly influenced by time alone.
2. The generalizability of the present study to other institutions should be limited to similar small, rural community colleges that have similar circumstances.
3. The reliability and validity of the two instruments employed may be questionable due to the revisions made to the questionnaires, and the difficulty in examining precisely and accurately the numerous variables

involved in student attrition. Some of the variables examined received disproportionate attention while other variables received little attention in the surveys.

4. Although the selected variables were studied according to student response to the instruments, the bulk of the present research centers around student perception. This type of investigation is subjective on the part of the responder and thus, the results of the present study are influenced by this subjectivity.
5. The finding that the nonpersister group perceived more difficulty to transfer than the persister group was not expected. This finding should be explored further, both with community colleges and four-year educational institutions.
6. The definition of dropout used in this study does not account for students who transfer to other institutions nor does the definition in this study account for those who only intended to enroll for one semester as their educational goal. Further follow-up is needed to determine what happened to the nonpersister group.

Discussion

The purpose of this study was to test the effectiveness of the Bean and Metzner (1985) model and the variables within using a sample population of rural community college students. The measure of the importance of selected background, academic and environmental variables in the attrition process provided a better understanding of the reasons why students leave institutions of higher education.

Background and Defining Variables

Bean and Metzner (1985) posited that the effect of background variables was a significant factor in the process of nontraditional student attrition. The findings of this study supported their contention. The background and defining variable set exerted a stronger effect in the statistical analysis than did the academic or environmental variable sets. Older, part-time, and commuter students increasingly compose a larger proportion of the community college student body. In this sample, the average student age was 25 years old, 47% were enrolled in three classes or less, and all were commuter students.

The dropout rate was lowest for students between 32-36 years of age and 42-58 years of age. The maturity and motivation of older students may compensate for competing demands on their time and rusty academic skills. Similar findings were found by Gates & Creamer (1984) that delayed entrance increased persistence for two-year college students. The tradition age group, from 17-21 years old, had the next lowest dropout rate. This group is likely to be influenced by familial and societal norms to attend college and they enter college accustomed to the daily routine of student life.

The highest dropout rate was with students whose ages ranged from 22-31 years old. These students probably experience the most pressures of young adult life coupled with the concurrent challenge of being a student. This group is more likely to be involved in a new marriage, new job, or have young children, as well as, more likely to have recently become financially independent of their parents.

The number of classes attempted in this sample was fairly evenly distributed except for fewer students enrolling in only one class. Consistent with other research findings, students who were enrolled on a part-time basis were more likely to drop out when compared to students enrolled full-time. The greatest rate of attrition was for those

enrolled in only one class followed by students who enrolled in only two classes. Many of these students may have been enrolled in classes for upgrading skills versus seeking a degree. Studies by Baker (1980), Hollins and Smith (1986), and Cotnam and Ison (1988) suggest that almost half of the part-time students who do not re-enroll leave because they have met their educational objectives.

The educational goals of the students in this sample were much higher when compared with the finding by the Center for the Study of Community Colleges (1986). In this sample almost 63% of the respondents indicated aspiring to earn a bachelor's degree or higher compared with about 33% found by the 1986 survey. However, the 1986 survey reported that when examining full-time two-year students alone, about 80% desired a bachelor's degree or higher (Center for the Study of Community Colleges, 1986). So, perhaps this sample had a higher rate of full-time students compared with the 1986 sample. Consistent with other research findings, students with lower degree aspirations tend to drop out at a higher rate. There was an inverse relationship found between degree aspiration and dropout rate. In other words, the higher the degree aspiration then the lower the chances for dropout and vice versa.

Over 57% of the students in this sample reported taking only one or two college preparatory classes in high school. This group accounted for over 46% of the total student attrition. Studies by Gates and Creamer (1984) and Lenning, Sauer and Beal (1981) indicate a positive relationship between persistence and enrollment in college preparatory courses. However, the group with the largest percent of attrition was those who had completed five or more college preparatory classes in high school. Over 28% of students in this group did not return the subsequent semester.

Perhaps this group felt more incongruity between college expectations and their

actual college experience. Another plausible reason is that this group would be more likely to be among those who transferred. It is estimated that 12 to 36% of community college students leave to transfer to other institutions (Cohen & Brawer, 1989).

Community college students tend to enter college with lower high school grade point averages compared with four-year college students. Students in this sample reported lower grades earned in high school compared with the findings of Astin et al. (1988). As expected, students who earned lower grades in high school tended to withdraw at a higher rate especially those who reported making mostly D's and F's in high school. These students are more likely to lack basic skills necessary to succeed at a post-secondary level as well as self-confidence in their own academic abilities.

The attrition rate for both the Caucasian and Afro-American groups was almost identical with the dropout rate being 20%. However, there were some difference found in terms of gender. Males were more likely to dropout compared with female students. Twenty-six percent of the males did not return while only 16% of the females did not.

Academic Variables

The findings showed little difference between the student's self-rating measures related to study habits. In measures related to academic advising, little difference between the groups were found as well. Both groups reported seeing faculty members more frequently than counselors for academic advice, career discussion, or personal problems. However, many students were found to confuse counselors with faculty members as indicated by discussions with students and empirical evidence of academic advising. For instance, more counselors than faculty advisors signed students registration forms.

Although the persister group reported fewer absences than the nonpersister group,

the difference between the groups was not much. Both groups were found to be pretty certain about their major. The persister group did not have even one "very uncertain" response to the questions about major certainty. Likewise, little difference was found between the groups in regards to the availability of courses.

Environmental Variables

Both the persister and nonpersister groups had moderate concerns about finances. The persister group indicated more certainty about financial support from their parents. The results concerning financial aid were mixed. The responses tended to be towards the extremes, either very certain or very uncertain about receiving financial aid. Overall, financial concerns did not correspond directly with subsequent dropout. However, the persister group was more likely to be employed or tended to work more hours while in school compared with the nonpersister group.

Both groups indicated a great deal of encouragement from their family. Encouragement from families was found by Hughes (1983) and Mangano and Corrado (1981) to be an important aspect of college satisfaction. Siblings and former high school teachers provided little encouragement for college attendance.

Students in the sample indicated little interference from family responsibilities, although family responsibilities are frequently cited by older and part-time students as a reason for dropout (Gorter, 1978; Hunter & Sheldon, 1980; Reehling, 1980). The timing of the students responses to this question may have influenced the results. The students in the sample were predominantly "new" students in college who responded eight weeks after the beginning of classes. If asked this question closer to the end of the semester, the response might be different.

A surprise finding was that the nonpersister group perceived more difficulty in transferring to another college than the persister group. Prior studies by Bean (1982) indicated that perceived difficulty to transfer is positively related to persistence. One explanation is that the nonpersister group may be more marginal in terms of being academically or financially prepared for college when compared with the persister group. Thus, college attendance elsewhere may not have been an option in their own minds.

Implications for Policy and Practice

At first glance, these findings may present some discouraging news for higher education. For educational institutions threatened economically and otherwise from the impact of high student attrition, many of the factors that contribute to student departure are beyond the control of the institution. However, the most salient finding of this study is the importance of commitment to the institution for promoting retention. Another important and related finding of the study is the relationship between the educational goals of students and retention.

As expressed by Cross (1971), the motivation for the majority of nontraditional students to attend college stems from the recognition that education is the way to a better job and a better life. By strengthening the vocational connection between the student and the educational institution, both the student's institutional commitment and his/her educational goal commitment can be increased.

Therefore, the challenge for educational institutions concerned about retention is to provide an education which leads to better jobs and better lives for students, to assist students with preparation for employment, and to communicate effectively the success of its graduates. These challenges relate to how well the institution does in some of its most

fundamental business across the entire institution. Some suggestions are as follows:

1. To establish an institutional research office to identify the strengths and weaknesses of various institutional factors. Many small, rural community colleges do not have an institutional research office. The institutional research office should focus on the wants and needs of matriculated students, as well as the wants and needs in the service area. Students need to be assessed prior to enrollment, during enrollment, on leaving, and graduation in both cognitive and affective areas. In particular, the areas of student's educational goals, motivation to attend, and institutional commitment need to be assessed. One easy way of finding out what students want is by having student forums. Such activity can be very effective in getting students to critically analyze their educational experience. Conducting an effective market analysis that identifies areas with high training needs and shortages of workers is of paramount importance in assessing the wants and needs of the service area.
2. To provide a comprehensive and coordinated retention effort with college-wide input. Ideally, such efforts should have high top administrative support and broad commitment across the entire campus. These efforts should focus on meeting the needs of the students and the needs of the service area. Today's students are much more consumer oriented who "buy" services one semester at a time. Therefore, throughout their college experience, students should be helped to recognize that their investment of time and money is paying off by the benefits gained from a given course, contacts made at the college, supportive services, and activities

that prepare them for the "real world." In other words, an essential part of the educational process entails explaining the reasons why what is being done is important and how it relates to something tangible in the working world. A proactive stance that indicates the willingness to take the initiative should be taken.

3. To promote excellence in instruction and support services. These areas need to be recognized as core and essential business and treated as such when compared with peripheral functions. Strong consideration needs to be given for teaching and academic excellence in promotional decisions. Meaningful academic support services should be provided with such services as: a) early alert systems for identifying those experiencing problems, b) effective orientation or freshman seminar programs that address campus culture and academic survival skills, (c) strong career decision-making services that facilitates student goal-directness, and (d) cooperative educational experiences that help generalize knowledge from the classroom to the work environment. In addition, efforts need to be made to provide a meaningful social environment. School loyalty is developed by helping students to fit in. Meaningful socially supportive strategies might include: a) provide nice informal meeting places, b) place faculty mailboxes close to the student lounge, (c) establish a mentoring and/or a big brother/big sister program, and (d) provide intramural sports activities.
4. Effectively utilize available resources. In these times of financial austerity, it is imperative to commit scarce resources wisely. In terms of student

retention, students likely to dropout should be targeted for special services. Such target populations would be students who have low educational goals or little institutional commitment.

5. To establish a strong public relations campaign to enhance the institution's reputation for excellence through visible achievements of students, faculty, alumni and staff.

On the other hand, many of the other variables studied were not significantly related to student dropout. Educational institutions may be able to reduce services and programs in these areas without greatly increasing student attrition. Some potentially cost-cutting suggestions are as follows:

1. To limit resource allocations for special programs or services that attempt to improve student study skills or study habits. An exception would be for revenue-producing credit classes.
2. To limit resource allocations for special programs or services that provide academic advising. Academic advising specialists in addition to faculty advisors/counselors may not be needed. Educational institutions may want to consider letting students advise themselves as a cost-cutting measure. This would also eliminate the hassle for students to get someone to sign their registration form.
3. To limit resource allocations for special programs or services that focus on students that miss classes. The use of paid work-study students, peer counselors or other related paraprofessionals may not be needed as an effort to reduce student attrition.
4. To limit resource allocations for special programs or services that focus on

Improving student's certainty about their major choice. Additional academic counselors, computerized software, and other diagnostic instruments may not be necessary.

5. To limit resource allocations for attempting to make courses widely available at a convenient time for everyone. Since the students in this study did not indicate that course availability was a problem for them, institutions might offer fewer classes so that the ones that are offered have more students and, thus, would be more cost effective.

Implications for Future Research

More research needs to be conducted at small, rural community colleges. Studies of a longitudinal design need to be conducted in these types of environments. Attrition research has often been criticized for the failure to examine multiple institutions of higher education. Studies need to be conducted utilizing numerous small, rural community colleges as the sample.

This study was limited to testing only parts of the model. This study focused on the background and defining variable set, the academic set, and the environmental set, in addition to, the individual variables within each set. This study did not test the premise of the model that intent to leave is a direct antecedent of student attrition. The model merits more comprehensive testing.

Finally, further research is needed that utilizes instruments that have undergone thorough questions of reliability and validity. This is a promising area of attrition research in that more quality instruments are becoming available on the market.

APPENDICES A - D

Appendix A

Letter to Students Who Had Completed The Student Entry Questionnaire

Dear :

The attached survey addresses your experiences at Paul D. Camp Community College. This is a part of a study being conducted at the college. This project is concerned specifically with identifying areas that will enable students to be successful. The results of the study will help provide information to be used for developing and improving college programs.

We are particularly interested in obtaining your responses because your experience will contribute significantly toward solving some of the challenges we face. The enclosed instrument has been tested with a sampling of students, and we have revised it in order that we might obtain all necessary data while requiring a minimum of your time. The average time required for completing the survey instrument is 21 minutes. Enclosed is a packet containing fresh ground coffee so that you might enjoy a coffee break while filling out the survey.

Please complete the enclosed form prior to November 11 and return it in the stamped, self-addressed envelope. Other phases of this research cannot be carried out until we complete analysis of the survey data. We welcome any comments that you may have concerning any aspect of the college. Your responses will be held in strictest confidence.

We will be pleased to send you a summary of the survey results if you desire. Thank you for your cooperation.

Sincerely,

Jerry J. Standahl
Director Student Development

JJS/be

enclosures

Appendix B
Student Entry Questionnaire

PLEASE NOTE

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Appendix C
Student Questionnaire

Appendix D

**Permission Letter from John Bean
to Use Modified Student Attitude and
Student Entry Level Questionnaires**

STUDENT ATTITUDE OR STUDENT ENTRY LEVEL QUESTIONNAIRE USE

Individuals who wish to use the SAQ or SEL-Q as is or as modified for use at their institution may do so at no charge if the information gathered is used in a dissertation or scholarly publication.

If the SAQ and/or SEL-Q as is or as modified are used to gather data for institutional purposes, such as institutional research or policy making, the fee for use is \$25.00.

Please make the check payable to:

John P. Bean

and mail it to him at:

HESA/School of Education

236 Education Building

Third and Jordan

Indiana University

Bloomington, IN 47405

11/5/90

Myzner and I used a similar instrument and published an article on non-traditional students in Research in Higher Education in 1987.

Good luck.

J. P. Bean

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A STUDY OF STUDENT ATTRITION AT A SMALL, RURAL COMMUNITY COLLEGE: A TEST OF THE BEAN AND METZNER MODEL

Harris, Alan Michael, Ed.D. The College of William and Mary in Virginia, 1992. 118 pp.
Chair: Professor Thomas J. Ward

The purpose of this study was to test the Bean and Metzner Model of Nontraditional Student Attrition (1985) in a small, rural community college environment. The influence of selected sets of background, environmental, and academic variables from the model were tested, in addition to, the individual variables contained within each set. The differences between the persister and nonpersister groups were examined by variables.

Data was collected via the Student Entry Questionnaire and the Student Questionnaire. Everyone who came in for placement testing at Paul D. Camp Community College during the fall of 1991 ($n = 148$) completed the Student Entry Questionnaire. Based upon a discriminant analysis using all eighteen variables, the model did predict with 92% accuracy. Multiple regression was used to investigate the first four subsidiary questions.

The three statistically significant predictor variables of student attrition were commitment to attend Paul D. Camp Community College (PDCCC), opportunity to transfer, and student's educational goals. In the stepwise regression procedure, commitment to attend PDCCC accounted for over 31% of the variance ($R^2 = .3140$). Opportunity to transfer was the next best predictor variable that added over 2% more to the prediction accuracy ($R^2 = .0273$). The third strongest predictor was student's educational goals which added just over 3% to the prediction ($R^2 = .0307$).

The background and defining variable set provided the most powerful prediction value followed by the environmental variable set. None of the academic variables were found to be significant. There was not a significant interactional effect between the academic and environmental variable sets for predicting attrition.

This study reported the differences between the persister and nonpersister groups according to the eighteen variables examined found from using T-tests. This study presented suggestions and strategies for reducing the negative impact of these factors.

Further study is needed to ascertain the difference between student perception in response to the variables and actual behavior. Follow-up studies of a longitudinal design would increase the efficiency of the model.