MULTIVARIATE CORRELATIONS OF COMMUNITY COLLEGE ENVIRONMENT AND COURSE ATTRITION TO RETENTION IN A SELECTED COMMUNITY COLLEGE

DISSERTATION

Presented to the Graduate Council of the North Texas State University in Partial Fulfillment of the Requirements

For the Degree of

DOCTOR OF PHILOSOPHY

By

James F. Horton, Jr., M.Ed.

Denton, Texas

December, 1982

Horton, James F., Jr., Multivariate Correlations of Community College Environment and Course Attrition to Retention in a Selected Community College. Doctor of Philosophy (Higher Education), December, 1981, 183 pp., 43 tables, bibliography, 85 titles.

The problem with which this study is concerned is the methodology that is used to assess the relationship between student perceptions of the college environment and student attrition. The population of the study was 329 students from a metropolitan community college who took the Student Opinion Survey, a publication of the American College Testing Service. Data on course withdrawals and non-return in a subsequent long semester were collected for the student population.

The data results were analyzed statistically using analyses of variance, Pearson product moment correlation, multiple regression analysis using step-wise procedures, and factor analysis. Data were considered statistically significant at the .05 level in relation to seven hypotheses on combinations of variables that include areas of student satisfaction with the college environment, student background data, course withdrawal, and non-return in a subsequent long semester.

Based on the data findings, the following conclusions appear to be warranted.

1. The Student Opinion Survey provides information that is useful in attrition research.

2. Multivariate correlations appear to aid in the prediction of student attrition, and it appears that analysis of variance is the most useful statistical procedure.

3. Older students appear to be more satisfied with the college environment and have a lower attrition rate than younger students.

4. The quality of the relationships between students and faculty and students and the college's nonteaching staff appears to be related to student satisfaction and attrition.

5. The student's age, race, and number of hours employed per week appear to impact the amount and quality of the student's interaction with various elements of the college environment and particularly the quality of relationships with faculty and staff.

6. It appears that the probability of students returning in a subsequent regular semester decreases as the number of within-semester course withdrawals increases.

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CHAPTER I

INTRODUCTION

Efforts to reduce student attrition have recently gained national prominence as the economic health of higher education has declined. Attrition, and the attention given it by concerned educators, is not a new phenomenon. A paper entitled "The Early Withdrawal of Pupils from School: Its Causes and Its Remedies" was presented to the annual convention of the National Education Association as early as 1872 (7).

The majority of research in the area of student attrition has been focused on the student. Specifically, the focus has been to identify the student characteristics that are correlated with attrition. While this approach has provided a valuable body of descriptive information, it has rarely acknowledged the potential impact of the college environment. Attrition research that is concentrated solely on students may diminish a feeling of responsibility. It is not unusual to hear faculty and staff discuss the futility of retention efforts since <u>those</u> students are predestined to drop out. Probably, the attempts to provide a therapeutic prescription for every student deficit is impossible and equally inappropriate. A more balanced approach is needed.

One area of attrition research has expanded the focus by analyzing the interactions between student characteristics and college environment. What happens to students is viewed as a function of the interactions between the student and various elements of the college environment. More recent theorists have created models in an attempt to graphically illustrate causal relationships. Spady's (23, p. 39) model, for example, demonstrates the process of student assimilation within the academic and social systems of the college. Spady believes that successful assimilation leads to satisfaction, which in turn affects the student's commitment to that institution; poor assimilation leads to low commitment and a high probability of drop out.

From a practical standpoint, this research promises to be very productive since the goal is to identify areas wherein students have problems fitting into the college environment. These problems, once identified, will make it possible to change elements within the college environment that have a positive correlation with attrition. An example might be insufficient office hours for faculty, which alone can dramatically reduce faculty-student interactions and thereby lessen student assimilation (24).

In order to study these interactions, a randomly selected group of community college students was surveyed to assess the level of satisfaction with various elements of a college environment. The attrition experience of this group was

tabulated for a regular (excluding summer) semester and the subsequent regular semester. The relationship between the level of satisfaction and attrition was statistically analyzed.

Definition of Terms

The following terms are defined as they relate to this study:

Academic environment is the total expectation for students to complete successfully assignments, earn grades, and perform intellectual tasks within a given institution. No distinction is made in this study between technical-occupational students and students who are pursuing a transfer program.

Attrition is the partial or total withdrawal from school by a student. Specifically, (a) within-semester attrition is the percentage of total hours enrolled for which a W grade is assigned, and (b) attrition in a subsequent regular semester means the student did not re-enroll in the community college under study for the following regular semester (e.g., student enrolls Spring, 1981, but does not re-enroll in Fall, 1981).

College services are the formal programs that a college may offer to assist students. The specific services used in this study are listed in section II of the Student Opinion Survey.

Interaction is the point of contact between a student's background and unique combination of personal characteristics with the unique characteristics of the college environment.

Intervention strategies--are programs that are designed to help a student overcome specific problems which may limit that student's performance within the college environment.

The level of satisfaction with the variables is categorized on the Student Opinion Survey as very satisfied, satisfied, neutral, dissatisfied, and very dissatisfied.

Satisfaction is the student's positive feeling about the college environment as measured by a response of satisfied or very satisfied on the Student Opinion Survey.

Social environment is the total opportunities and expectations for students to interact with other students and faculty and participate in student activities.

Student assimilation or student integration within the social and academic environments of the college means that a student feels enough acceptance and identification with the college to perform successfully within the social and academic expectations of the college. These terms are used interchangeably in the literature.

Subsequent regular semester is the following long-term semester, excluding both six-week summer sessions.

A W grade at the community college under study is assigned when (a) a student voluntarily withdraws from the course or (b) the student accumulates excessive absences and is dropped from the course by the instructor.

Statement of the Problem

The problem with which this study was concerned is the methodology that is used to assess the relationship between student perceptions of the college environment and student attrition.

Purposes of the Study

The purpose of this study was to construct a practical methodology for analyzing the complex relationship between student perceptions about the college environment and student attrition in a selected community college. Specifically, the study will attempt to demonstrate how the Student Opinion Survey, which is published by the American College Testing Program (1), can be used to answer the following research questions as measured, where applicable (questions 1, 3, 4, and 5), by the percentage of W grades received by students:

1. Is there a significant relationship between the number of courses a student drops in a selected semester and student satisfaction with the college environment?

2. Are there significant differences in student satisfaction with the college environment by age, sex, race, freshmen or sophomore status, employment status, full-time or part-time status, purpose for attending college, major, and occupational choices?

3. Is there a significant relationship between the number of courses a student drops in a selected semester and age, sex, race, freshmen or sophomore status, employment status, full-time or part-time status, major choice, and purpose for attending college?

4. Is there a relationship between the number of courses a student drops in a selected semester and non-return in a subsequent regular semester?

5. Will the combination of student background variables and student satisfaction variables explain a larger percentage of the variance for course withdrawal than either set of variables examined separately?

6. Will the combination of student background variables and student satisfaction variables explain a larger percentage of the variance for students not returning in a subsequent regular semester than either set of variables examined separately?

7. Will the satisfaction variables on the Student Opinion Survey group to form statistically significant factors?

Hypotheses

The following hypotheses were developed to reflect the purposes of the study:

Hypothesis I.--There will be a statistically significant relationship at the .05 level between the number of courses a student drops in a selected semester and student satisfaction with the college environment.

Hypothesis II.--There will be a statistically significant relationship at the .05 level between student satisfaction with the college environment and age, sex, race, freshmen or sophomore status, employment status, full-time or part-time status, purpose for attending college, major, and occupational choices.

Hypothesis III.--There will be a statistically significant relationship at the .05 level between the number of courses a student drops in a selected semester and age, sex, race, freshmen or sophomore status, employment status, full-time or part-time status, major choice, and purpose for attending college.

Hypothesis IV.--There will be a statistically significant positive relationship at the .05 level between the number of courses a student drops in a selected semester and non-return in a subsequent regular semester.

Hypothesis V.--The combination of student background variables and student satisfaction variables will explain a larger percentage of the variance for course withdrawal than either set of variables examined separately.

Hypothesis VI.--The combination of student background variables and student satisfaction variables will explain a larger percentage of the variance for students not returning in a subsequent regular semester than either set of variables examined separately.

Hypothesis VII.--Satisfaction variables on the Student Opinion Survey will group to form statistically significant (loading of $\pm$ .40) factors.

Background and Significance of the Study

A review of the literature indicates that there was litlte change in the overall student attrition rate from 1913 to 1957 (14, 17). When attrition is defined as not completing a degree from the institution of original matriculation, the median figure has remained agonizingly consistent at about 50 per cent (15). The only significant change came from community and junior colleges; if the graduation criteria were applied, it was projected in 1975 that over 65 per cent of the entering freshmen in a community college would become a dropout

statistic (3). These unchanging figures should require educators to consider the efficacy of attrition research and the resultant intervention programs. One possible explanation is that nothing can be done to prevent students from dropping out. The problem may be immutable.

Another explanation may lie with fundamental problems in research methodology and the consequent fallacious conclusions. Gehoski and Schwartz (13) state that one of the major deficits of dropout research is that the studies typically focus on only one or two factors at a time. They also suggest that it is reasonable to assume that multiple factors operate concurrently to produce attrition. This position is supported by a variety of researchers (8, 9, 10, 17). Spady's position on this issue is unequivocal, he says, "We recommend, however, that with the more advanced multivariate statistical techniques and standardized computer programs now available, further theoretical, bivariate research on the 'correlation' of dropping out should be abandoned, NOW!" (23, p. 77).

Most areas of this bivariate research are well known. Academic preparation, for example, has received tremendous attention. In a variety of community college studies (11, 12, 15) the correlation between high school grades, high school rank, and admission test scores to attrition has been demonstrated. Several national studies (3, 4, 6, 19) verify these findings. In these studies, it is not unusual to see

correlations of .50 or greater. Demitroff (9) asserts that academic factors are the most reliable predictor of attrition. While academic preparation is certainly an important predictor, it obscures the complex nature of the interaction between the academic climate of the institution and the student's academic preparation. Astin's (5, p. 14) latest research identifies the primary reason for withdrawal, given by both men and women, as boredom with their courses. A logical but over-simplified explanation may be that these students are using a scapegoat excuse for their academic failure. More careful analyses, however, reveal that many students, upon withdrawal, have a grade-point average well above the average for graduates(14). A very capable student who is enrolled in courses that are not challenging may become disillusioned and drop out.

The literature is filled with examples of single factor correlations. Certain religious preferences (18) and even smoking (21) have been significantly linked with the tendency to drop out. All studies provide a useful body of descriptive information. They provide little guidance, however, for a community college educator who is faced with educating students who have every conceivable combination of dropout-prone characteristics. This task is made even more arduous by the difficulty in defining a community college dropout. The nature of the community college virtually mandates the application of multivariate research, which analyzes the

complex problems that are associated with accepting students who have extremely diverse backgrounds. This research will help the community college educator (a) to decide when a withdrawal is a result of some failure of the institution and when it is not, (b) to help identify points of interaction wherein intervention strategies may help students adjust to the college environment, and (c) to identify points of interaction wherein the college should adjust to accommodate the needs of certain students.

Examples of this multivariate approach include studies by Spady (22, 23) and Tinto (25). Their research emphasizes a process of social and academic integration as critical influences on student persistence. Their models view persistence-withdrawal decisions largely as a result of a longitudinal process of associations between the student and the academic and social systems of the institution. Each student brings to the college a given set of background characteristics that partially determine how the student will relate to the institution's academic and social systems. The nature and quality of the student's associations within these systems leads to a decision to persist or drop out.

Pascarella and Terenzini (20) state, based on studies reviewed, that relatively little attention has been given to investigations of interaction effects. As a result, numerous important sociological and educational issues, vis-à-vis college student attrition, have yet to be addressed. For

example, do certain aspects of social and academic integration only accentuate pre-college characteristics, or can the quality of integration also compensate for initial defects in the student's background? While many limitations must be applied to the studies conducted by Spady (22, 23) and Tinto (25), Pascarella and Terenzini state that the

> findings suggest that, in terms of main effect's influence on persistence, what happens during the freshman year may be more important than the particular commitments, background, characteritics, aspirations, or aptitudes which the student brings to college; a finding generally consistent with earlier research on voluntary withdrawals. Thus, there may be important determinants of freshman-year persistence which are not merely the result of the kinds of students enrolled, but rather are subject to the influence of institutional policies and programs which affect the student after he or she arrives on campus (20, p. 208).

One of the deficiencies of the reviewed studies is their limited application to single four-year institutions. A practical problem is the complexity and expense of the methodology used by Spady (22, 23) and Tinto (25). If a standardized, inexpensive, easily-scored instrument could be used to identify interactions that negatively effect student integration within the academic and social systems of the college, this area of research would have practical applications for community college educators. This study will be significant in that it will (a) determine if a practical methodology can be developed for studying student attrition in community colleges; (b) determine if the interaction effects identified in studies by Spady (22, 23), Tinto (25) and

Pascarella and Terenzini (20, 24) can be identified within a community college; (c) determine if the Student Opinion Survey published by the American College Testing Program (1) can be used to identify areas where student opinion indicates lack of satisfaction with the social and academic environment of the college; and (d) determine if there is a multivariate correlation among student demographic characteristics, student opinions about college environment, and percentage of W grades a student receives within a semester, and student attrition in a subsequent regular semester.

Limitations of the Study

The results of this study were limited by the subjectivity of the expressed perceptions of the respondents; therefore, the levels of satisfaction are subject to the degree of validity of the perceptions given.

Delimitations of the Study

The specific relationships of student demographic characteristics, student opinions about college environment, the percentage of W grades a student receives within a semester, and student attrition in a subsequent regular semester was delimited to one community college in a large metropolitan area of Texas.

Basic Assumptions

It is assumed that the respondents were objective in their reactions to the questionnaire, and that their

perceptions of satisfaction relative to the environment at the community college reflect their personal knowledge and understanding. It is further assumed that the collective perceptions of satisfaction with the specific community college environment enhances the value of existing data obtained from corresponding or related literature.

Organization of the Study

Chapter I provides an introduction to the study that includes the statement of the problem, purpose of the study, the hypotheses, the background and significance of the study, the limitations of the study, the basic assumptions underlying the study, and definitions of key terms. Chapter II presents a review of the literature related to each dimension of the study. The review includes student characteristics and attrition, methodological problems in attrition research, development of the student-college interaction theory, models of attrition that are based on student-college interaction, student-faculty relationships, and satisfaction and attrition. Chapter III describes the methods and procedures of the study and details what the study encompasses in terms of subjects, measures, experimental design, and procedures. Chapter IV provides a detailed presentation of the statistical results of the study and a discussion of the results as they relate to research hypotheses and to prior research. Chapter V includes the conclusions that are drawn from the data

findings and a summary of the contribution of this research to knowledge. The chapter also offers recommendations relative to applications and to additional research.

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CHAPTER II

REVIEW OF RELATED LITERATURE

Community colleges present a particularly difficult arena in which to study the phenomena of attrition. The role of the community college as a smorgasbord--where students stop in and out--has been well publicized. While this may be a viable metaphor, it also tends to obscure a precise definition of the problem. Specifically, the extent of the problem is often minimized by placing too much emphasis on the expectation that many students simply stop-out; while this phenomenon does exist, Astin (3) found the characteristics of the stop-out and drop-out so similar that he treats both groups as one.

Community colleges have the highest drop-out rate of all institutions of higher education with a national mean of 59 per cent. Rates are somewhat higher--about 65 per cent--at two-year colleges that are located in the West and Southwest (3, p. 111). Often, these figures are explained by pointing to the open-admissions policies of most community colleges that allow the matriculation of many students who have poor academic preparations and come from low socioeconomic levels. Astin (3, p. 112), however, discovered that even after controling for pre-enrollment differences, students who attend

community colleges have a 16 per cent higher probability of dropping out.

The ultimate development of models that attempt to explain attrition (by studying the unique interactions between individual students in a specific institution) grew out of research in the two areas of student characteristics and institutional characteristics. This literature review covers the areas of student characteristics and attrition, methodological problems in attrition research, development of the student-college interaction theory, models of attrition that are based on student-college interaction, student-faculty relationships, and satisfaction and attrition.

Student Characteristics and Attrition

The large-scale democratization of American higher education has spawned a large amount of research into the relationship of family background and attrition. Sewell and Shah (58), while controling for student IQ, show that family status has a major independent influence on graduation rates (about 18 per cent); men who fall in the lowest quartile on both variables have only a 4.4 per cent chance of completing a degree program within seven years, compared to a 70.6 per cent chance for their counterparts in the upper quartile in both variables. Using a large student sample from the University of Michigan, Gurin, Newcomb, and Cope (22) identified a large number of significant variables. From these findings, they

created the two indices of a cosmopolitanism (which encompasses parents' religious affiliation and level of education, rural-urban background, and size of high school) and academic preparation (which encompasses students' high school class rank and score on the Scholastic Aptitude Test). When these two indices are controlled simultaneously, however, cosmopolitanism has a slightly greater independent influence on attrition than academic preparation, particularly among men.

Summerksill (62) also found that students from large central cities are less likely than others to drop out at any point during their college career. Other studies, however, fail to support these findings (15, 30, 33). In fact, Iffert (30, p. 74) was forced to conclude that the weight of the evidence points to the conclusion that the location of a student's home in relation to college has no significant bearing on his chances of graduation. It should be pointed out that these conclusions pertain only to four-year institutions; the impact of junior and community colleges on this variable is an area that needs further study.

The impact of the student's socioeconomic background and family income is equivocal. Some of the studies reviewed [for example, Astin (2)] indicate that four economic indicators of socioeconomic level (mother's education, father's education, father's occupation, and number of peers attending college) significantly correlate with dropping out for both sexes. Eckland's (12) study suggests very strongly that family

income-socioeconomic level is not a direct factor of attrition. Morrisey (1971) found that social status differentiates between dropouts and non-dropouts, but not in the expected direction. His results indicate that students whose families have low social status have higher retention rates. He suggests that this may be related to social mobility factors, i.e., students from lower social classes have more motivation to achieve (and graduate) because a college education is a means of improving one's social position. Primarily, socioeconomic status appears to influence a student's decision to attend college instead of his chances of finishing (44, 71).

While socioeconomic background is of questionable influence on attrition, it does appear that the influence of the family is significant. Congdon (10), for example, shows that students who are succeeding enjoy more casual, accepting, and open relationships with their parents, while parents of failing students are disproportionately more demanding and overprotective. Trent and Ruyle (70) found that graduates, more so than dropouts, are likely to turn to their parents for advice, receive praise from them, and have parents who show an interest in their college success.

When race is used as a variable in attrition research, the results are conflicting. Astin (3, p. 25) found that blacks who attend predominantly white colleges have a substantially higher dropout rate than whites. Hall's (24) study at El Paso Community College in Texas demonstrated that

race has a significant correlation with attrition. Other studies, however, conclude the opposite. MacDougall found that race does not have any significant relationship to attrition. This finding is corroborated by Packwood and Bruner's (52) study of attrition at Delta Community College in Michigan.

Generally, age has not been found to be a primary factor in causing attrition (18, 59, 64). More recent research in community colleges, however, does not support this position. Packwood and Bruner's (52) study found a negative correlation between age and retention; the older the student, the less apt he is to return. Nickens (49) also found a negative correlation between age and goal achievement; older students are less likely to accomplish their goals. This finding is consistent with a research finding by Newman (48), who reports a positive association between age and dropping out.

Several studies show that sex does not correlate significantly with a tendency to drop out (6, 33, 58, 66). Other studies, however, indicate that there is significant relationship between a student's sex and the tendency to drop out; Nelson (47) found that men drop out at significantly higher rates, while Panos and Astin (53) found that women are more likely to drop out.

A variety of additional student characteristics are investigated in Astin's (3) massive study of 243,156 students.

Marriage is one of the most important determinants for women who drop out, but it is of little or no importance for men (3, p. 15). The influence of type of residence for men and women is also dramatic (3, p. 93); living in a private room or apartment as opposed to living at home is beneficial for men who attend a community college but such accommodations are detrimental for women (3, pp. 92-93). Working full time has a consistently negative effect on persistence for all groups, and the differences are considerable. Working full-time (rather than, say fifteen to nineteen hours per week) is associated with a 15 per cent increase in dropout rates among women and a 13 per cent increase among men (3, p. 77). These findings are consistent with those of Cohen and others (8) and Kosher and Bellamy (36), who report a negative relationship between persistence and the number of hours per week that students are employed. The receipt of financial aid generally accounts for a slight increase in persistence (3, p. 57). This is particularly true if the student's financial aid support is from a work-study program (3, p. 63). These benefits, however, are reduced if the student receives a package of financial aid assistance (3, p. 68).

The most important characteristics of students who persist is commitment to a college education and commitment to specific vocational goals. In their study of commitment to college, Hackman and Dysinger state,

> A reason for skepticism, which is central to the research reported, is simply that almost all of the problems reported as reasons for withdrawal by students who leave college are shared by large numbers of students who do not withdraw. Thus, "financial difficulties" are endured by many students who persist in the traditional condition of student poverty. "Academic problems" which lead some to drop out spur others to new effort. The same is true for "family trouble," "social problems," "uninteresting classes" and so on.
>
> What factors differentiate those students who let their problems get the better of them from those who persist in the face of difficulty? It is proposed here that the level of commitment that a student and his family have toward the goal of obtaining a college education may be of considerable importance. If commitment to college is sufficiently strong, students may be able to persevere through all but the most severe difficulties; if commitment is low, the problems often encountered by students early in their college careers may provide sufficient reason--or even a convenient excuse--for withdrawal (23, p. 312).

To test their hypothesis, Hackman and Dysinger (23) determined a student's commitment from the results of questionnaires administered to students and their parents. In addition to this information, they determined the students' academic competence by combining SAT scores and high school rank. The results indicate that persisters have the highest level of commitment, that academic dismissals and transfers-returnees are second, and that voluntary withdrawals are lowest in measured commitment. Combining students' competence with commitment yielded the following results:

> 1. Students with poor academic qualifications but moderately low commitment tend to withdraw from college--but to transfer to another institution or to re-enroll at the same school later;
> 2. Students with poor academic qualifications but moderately high commitment tend to persist in college until they finally are forced to leave because of

> poor academic performance;
> 3. Students with both low commitment and moderately low academic competence tend to withdraw from college and non re-enroll in the same school or elsewhere (23, p. 321).

Astin (3, p. 38) found that one of the simplest ways to measure students' commitment to college is by asking students to state their degree aspirations. Aspiring to a bachelor's degree adds about 7 per cent to the probability of persisting; aspiring to a doctorate increases students' retention by 24 per cent. As suggested by a number of researchers, once the individual's ability is taken into account, it is his commitment to the goal of college completion that is most influential in determining college persistence. Whether measured in terms of educational plans, educational expectations, or career expectations, the higher the level of plans, the more likely the individual is to remain in college (7, 9, 38, 61, 74).

The specific role of vocational goals is contested. Some investigators emphasize that having a vocational goal is conducive to persistence because it provides a motivation for undertaking a particular academic program (16, 17, 26). The Delta College study (52, p. 7) indicates that there is significant difference between persisting community college students who have a goal (82 per cent) and persisting students who do not have a goal (54 per cent). Other research, however, has uncovered no significant effect of vocational goals on attrition (5, 57).

Methodological Problems of Attrition Research

Many of the inconsistent conclusions that are reached by researchers who have examined the relationships of student characteristics and attrition may be explained by the inadequacy of the research methodology. The following section explores this problem.

Most of the attrition studies that have been conducted by community college educators are ex post facto. Examples include studies by Andersen (1), Gell (20), Hall (24), Knoell (35), Medsker (44), Stine (63), Wetzel (73). Primarily, these studies are based on mailings of follow-up questionnaires to students who have dropped out of their respective institutions. These questionnaires require students to identify the reason(s) for not returning. The typical responses include financial problems, work conflict, transportation difficulties, illness, and family problems. The resulting conclusion is typified by a statement of Kessman's (34), who says that most withdrawals are for stated reasons over which the college has little or no control. Astin (3, p. 14) believes that to accept such post hoc interpretations at face value is a questionable practice when the complexity of the dropout phenomenon is considered in conjunction with the natural tendency for persons to rationalize behavior that might be regarded by others as evidence of failure.

Gehoski and Schwartz (19) indicate that many studies tend to focus on factors that are related to academic achievement

on the assumption that college achievement is positively related to persistence. Therefore, it has been supposed that factors such as aptitude, which is known to affect scholastic achievement, also affect college retention rates. Although such correlations do exist, other research demonstrates that this is not the only variable to affect attrition because there is a higher than predicted attrition rate for scholastically high-achieving students (27, 41). Huber (29) supports this position by pointing out that while greater numbers of low-ability students have been admitted to colleges, national attrition rates have essentially remained the same. An additional problem identified by Gehoski and Schwartz is that many studies focus on either the characteristics of persisting students or those who drop out. Without a comparison group, such conclusions must be viewed as suspect.

Additional criticisms of ex-post facto research have been leveled by a variety of other researchers that includes Jex and Merrill (32) and Marks (40). Eckland (12) favors a long-term study of attrition from a particular institution. Kowalski (37) also believes that each college and university should be considered as a unique entity because the factors that lead to students' dropping out may well be unique to any given institution.

Development of the Student-College Interaction Theory

Iffert's study of college student retention and withdrawal (30), which was initiated jointly by a committee of the American Association of Collegiate Registrars and Admissions Officers and the United States Office of Education, is an early plea for greater consideration of the impact of the college environment. One of his conclusions demonstrates this shift. Iffert says,

> The problem is to match the interests and expectations of students with the attitudes and policies of the highly individualized educational institution. One of the intentions of this study is to point the way toward the compatible union of student and institution. Happiness will not be the lot of the bookworm who is maneuvered into registering at an institution where football is king. On the other hand, the student who wants, and can afford, the luxury of a straight liberal arts education would probably be a misfit in most institutes of technology (30, p. 411).

Based on Murray's (46) dual concept of personal needs and environmental press, Pace and Stern (51) developed two instruments for assessing the psychological needs of a student and the characteristics of the college culture. The Activities Index consists of 300 statements of commonplace, socially acceptable activities to which like or dislike responses are given. The student is scored on his responses to bi-polar needs (e.g., succorance-autonomy, impulsion-deliberation, etc.). The College Characteristics Index, which also consists of 300 items, was designed to ascertain the characteristic pressures, stresses, rewards, and conformity-demanding influences of the college culture.

Pace and Stern (51) operationally define press as the characteristic demands or features that are perceived by those who live in the particular environment. As a result of administrations to 1,200 students at five universities, the authors demonstrated the usefulness of their instruments in identifying points where the implicit press is not congruent with the explicit objectives of the institution or the needs of certain groups of students.

Using the College Characteristics Index (CCI), Thistlewhaite (68) attempted to measure the relationship between type of institutional press at a given institution, and productivity as measured by the number of doctorates ultimately awarded to students who entered college as National Merit Scholars. The results indicate that productivity, as measured by the number of doctorates in a given field, could be predicted by the type of environmental press. Harvard and Radcliff, for example, with an environmental press of humanism, produced the highest number of doctorates in the humanities. An interesting unanticipated element of this research was the impact of faculty. Thistlewaite says,

> The scale called Informality and Warmth of Student-Faculty Contacts is of special interest, since it seems to predict achievement in all areas. The most representative items of this scale tell us something about the behavior of the teacher who stimulates graduate study; he does not see students only during office hours, or by appointment; open displays of emotion are not likely to embarrass him; students need not wait to be called upon before speaking in class; in talking with students, he frequently refers to his colleagues by their first names; students do

> not feel obliged to address him as "Professor" or "Doctor." In other words, the stimulating teacher is considerate, and does not encourage deference or abasement in his students (68, p. 188).

McConnell and Heist (42) largely replicated Thistlewaite's study with similar results; the major difference, they state, is their use of the Omnibus Personality Inventory and the Allport-Vernon-Lindzey survey of values to determine student personality characteristics which were then compared to the College Characteristics Index.

The next generation of research in the analysis of college environment was introduced by Astin and Holland (4). They state that this study is based on Holland's theory of vocational choice, which provided the theoretical basis for a new assessment instrument, the Environmental Assessment Test (EAT). Holland's theory includes a typology based on six orientations that are termed realistic, intellectual, social, conventional, enterprising, and artistic. By configuring questions on the EAT within these classifications, Astin and Holland also were able to classify the predominant environmental press of a given college or university. These classifications were validated by comparison with measures of productivity in specific disciplines.

The College and University Environment Scales (CUES) developed by Pace (51) provides for measures on five factors of the college and university environment. Pace defines these factors as practicality, community, awareness,

propriety, and scholarship. The CUES, a hybrid of CCI and EAT, is easier to administer and has greater reliability than either the CCI or EAT.

Models of Attrition Based on Student-College Interaction

Following the development of the preceding instruments, theoretical models of student attrition began to emerge. These models, which are based on the theory that attrition is a result of the interactions between student characteristics and college environments, attempted to explain some of the contradictions mentioned earlier. These models can be classified into the following four categories: (a) the transactional approach, which was developed by Pervin and Rubin (55); (b) the congruency model (person-role fit), which was developed by Feldman and Newcomb (14); (c) the correspondence concept, which was developed by Starr, Betz, and Nenne (62); and (d) the integration models, which were developed by Spady (60) and Tinto (69).

The Transactional Approach

Pervin and Rubin's (55) transactional approach is based on their belief that often many students are forced to choose a college that is not their first choice, or they have a distorted image of their preferred college, or they have an unrealistic image of their own needs. Such actions result in a lack of fit between the needs of the individual and the

press (or sources of reward) and frustration in the college environment. A lack of fit between student and college characteristics could also lead to some feelings of dissatisfaction with the college experience that ultimately may lead to dropping out of college. The hypothesis used to test the transactional approach is

> that the greater discrepancy between the way a student sees himself and his image of the college, the more he will be dissatisfied with the college and consider dropping out. Furthermore, since self-college discrepancies should be tied more to nonacademic than academic reasons, it was predicted that the above relationship would hold more for academic dissatisfaction, and more for dropping out for nonacademic (personal) reasons than for academic reasons (55, p. 285).

Pervin and Rubin (55) developed the Instrument for the Transactional Analysis of Personality and Environment (ITAPE). The ITAPE, which they state is based on the semantic differential techniques of Osgood, asks students to rate a number of concepts on the set of polar adjective scales. Scores were calculated for pairs of concepts that include self-college, self-students, college-ideal college. The results indicate that when compared to the group that had low perceived discrepancy and low dissatisfaction, those in the high discrepancy and high dissatisfaction group rated the college as higher on the following items: dull, boring, uncreative, competitive, tense, ritualistic, conventional, repressive, conforming, coercive, detached, and intolerant.

The Congruency Model

Feldman and Newcomb (14) originally hypothesized a simple congruency model--the student came to college with a given set of characteristics that interacted with the given characteristics of the college environment. Congruency was simply measured by the extent of the match. Freshmen were viewed as entering college on a continuum extending from those students to whom their college presented no adaptational problems whatsoever, to the opposite extreme in which nearly everything experienced by such students required radical reorientations in thought and behavior. The greater the incongruence, the greater the students' probability of dropping out.

Since studies that had been conducted by other researchers to examine this simple congruency model were inconclusive, Feldman and Newcomb concluded that their simple discontinuity and incongruence hypotheses were just that: "too simple" (14, p. 238). They decided that it was imperative to incorporate consideration of the specifics of the backgrounds of the particular students as well as the specifics of the particular college environment. The result of this line of reasoning was the development of a curvilinear model in which moderate incompatibilities are viewed as being stressful enough to induce change but not so stressful as to produce strong negative reactions. Consequently, the researchers concluded that

it would be more productive to build hypotheses around the fact that a given student may be highly incongruent with the college environment in certain areas, moderately so in other areas, and not especially incongruent in still others. Given the heterogeneity of students and the heterogeneity of the subenvironments of a college, it was probably most meaningful to think in terms of multidimensional complexes of continuities and discontinuities, of congruencies and incongruencies, and of environmental forces for change and for stability. In summary, Gurin and Newcomb state that

> Development and change depend on being presented with a disequilibrium-inducing challenge great enough to shake old patterns and beliefs, without at the same time being provoked to reactions (withdrawal, clinging to the familiar, encapsulation) that are counter to the direction of the desired change. Learning processes, therefore, are viewed as deriving from the complex interaction of disequilibrium-inducing experiences with the predispositional characteristics and environmental supports that enable the disequilibrium to be integrated and utilized (21, pp. 14-15).

Rootman (56) further developed the congruency model in a study commissioned by the United States Coast Guard Academy to determine the cause of the extremely high attrition rate at the academy. After using a battery of fourteen instruments, Rootman concludes that voluntary withdrawal from a military academy perhaps can best be understood in terms of a model based on the concept of stress, which is defined as the existence of an unresolved problem for the individual. Thus, stress is conceived of as a force pressing on the individual,

a force which may or may not be recognized, that leads to a reaction which may be called strain. One effective way of coping with strain is to withdraw from the field. The individual who is not willing or able to conform, the one who does not fit the role of cadet or does not fit into the group has a problem. If he cannot resolve it either by modifying his personal characteristics or by making himself more attractive to his peers, he is likely to experience strain. Rootman concludes that a rational way to eliminate this strain would be by voluntarily withdrawing from the academy.

The Correspondence Concept

Dawis, Lofquist, and Weiss (11) propose a theory of work adjustment that incorporates two factors--satisfactoriness and satisfaction--which has proved useful to vocational counselors. This theory is based on the principle that an individual will seek to achieve and maintain correspondence with his environment. An individual is viewed as bringing certain skills to a work environment that enable him to respond to the requirements of that environment (the satisfactoriness dimension). Similarly, the rewards of the work environment serve as a response to the needs of the individual (the satisfaction dimension). When both of these requirements are mutually fulfilled, the individual and his environment are correspondent.

Starr, Betz, and Menne (62) applied the correspondence theory to a study of student adjustment. Like an employee, the college student must interact effectively with his study (work) environment. For the student, correspondence [as described by Dawis, Lofquist, and Weiss (11)] can be stated in terms of the individual's fulfilling the requirements of the college environment (e.g., meeting minimal grade standards), and the college environment fulfilling the requirements or meeting the needs of the individual student. Achievement of this correspondence should increase the probability that the individual will remain in the environment. Starr, Betz, and Menne suggest that if a student is performing adequate, satisfaction then becomes a major factor in dropout decisions.

To test their hypothesis, Starr, Betz, and Menne (62) administered the College Student Satisfaction Questionnaire [modeled after the Minnesota Satisfaction Questionnaire by Weiss and others (72)] to a large sample of Iowa State University students. Students who did not re-enroll the following year were divided into (a) non-academic dropouts and (b) academic dropouts. As predicted, overall satisfaction with the college environment was inversely related to whether or not the student remained in the environment. The College Student Satisfaction Questionnaire discriminated between those who remained and those who dropped out. Students who chose to leave the university and who also had maintained adequate grades were significantly less satisfied with (a) the academic

offerings and requirements of the university, (b) faculty and staff competence and helpfulness, and (c) the amount of time required to meet the demands of the university. This reduced satisfaction with these areas apparently did not result from difficulty in meeting the performance requirements of the university.

The Integration Models

Spady (60) went beyond his predecessors' theories to develop a complete graphic model of the dynamic process of student integration within the college environment. Spady says,

> In essence, this model treats the successful assimilation of entering college students into the full life of their institution as problematic, rather than as given. According to this view, each student enters college with a definite pattern of dispositions, interests, expectations, goals, and values shaped by his family background and high school experience. It is assumed that this entire range of experiences and attributes may influence his overall ability to accommodate the influences and pressures he encounters in his new environment. . . . In my view, then full integration into the common life of the college depends on successfully meeting the demands of both its social and academic systems (60, p. 38).

The student's integration into the academic system of the college is based on the collective interaction of family background, academic potential, grade performance, and intellectual development. The social system of the college is based on the collective interaction of family background, normative congruence with the value press of the institution, and friendship support. Successful assimilation within these

systems will result in higher social integration, higher satisfaction, and greater institutional commitment--hence, reduced probability of dropping out. Research conducted by Spady supports the validity of this model. Among the many significant findings is the correlation of academic potential to grades and intellectual development. While highly correlated to grades, academic potential is a relatively unimportant predictor of intellectual development. Instead, a student's intellectual development tends to rest primarily on the student's ability to establish relationships with faculty members, and to involve himself in activities that provide exposure to stimulating ideas and experiences (60, p. 48).

Tinto (69) also developed a dynamic model which differs from Spady's (60) by placing greater emphasis on the specific effects of the interaction between student and college characteristics. Tinto (69, p. 95) graphically portrays this effect as primarily impacting the student's goal commitment and institutional commitment. Tinto argues that the process of dropout from college can be viewed as a longitudinal process of interactions between the individual and the academic and social systems of the college during which a person's experiences in those systems (as measured by his normative and structural integration) continually modify his goal and institutional commitments in ways which lead to persistence or to varying forms of dropout. In the final analysis, Tinto states, "it is the interplay between the individual's

commitment to the goal of college completion and his commitment to the institution that determines whether or not the individual decides to drop out from college and the forms of dropout behavior the individual adopts" (69, p. 96). The integration into the academic system of the college most directly affects goal commitment, whereas behaviors in the social system are most directly related to a person's institutional commitment.

Pascarella and Terenzini (54) designed a study to test the interaction effects necessary for student integration within the social and academic systems of the University of Chicago. The design combined information on pre-enrollment student characteristics with the results from a Likert-type questionnaire that was designed to assess the concepts of social and academic integration. A principal-components factor analysis of the questionnaire responses yielded the five factors (a) peer group relations, (b) academic and intellectual development, (c) informal relations with faculty, (d) faculty concern for teaching and student development, and (e) institutional and goal commitment (54, p. 200). Students were also asked to report the number of times during each semester of their freshman year that they had met informally (outside of class) with a faculty member (a) to get basic information and advice about my academic program, (b) to discuss matters related to my future career, (c) to help resolve a distrubing problem, (d) to discuss intellectual or

course related matters, (e) to discuss a campus issue or problem, and (f) to socialize informally. These measures of student-faculty contact [which were developed by Wilson, Wood, and Gaff (75)] appear to fall into the two categories of academic integration and social integration.

The results of the Pascarella and Terenzini (54) study support the Tinto (69) model. The pre-enrollment characteristics that generally affect goal and institutional commitment (and hence the probability of dropping out) were altered by the student's experience. For example, the quality and impact of relations with peers are most important in positively influencing the persistence of women who, at entrance, attach a relatively high level of importance to college education. Perhaps the most important finding is the compensatory impact of positive student-faculty relations. High levels of academic integration (such as frequent informal contacts with faculty that focus on intellectual matters, or perceptions of faculty that particularly concern teaching and students) appear to compensate for low levels of social and academic integration in other areas. For men, such aspects of their relationships with faculty tend to compensate for low levels of institutional and goal commitment and academic and intellectual development; for women, however, frequent contacts with faculty that focus on intellectual issues tend to compensate for low levels of satisfaction with the quality and impact of peer relationships. This latter finding, in particular, provides

reasonably clear support for Tinto's (69) hypothesis of a potentially compensatory association between social and academic integration. The practical implication for educators is summarized by Tinto, who says,

> Thus, there may be important determinants of freshman year persistence which are not merely the result of the kinds of students enrolled, but rather are subject to the influence of institutional policies and programs which affect the student after he or she arrives on campus. This may be particularly true if such programs and policies can positively influence the quality of relationships with faculty for men, and both faculty relationships and peer relationships in the case of women (69, p. 208).

Student-Faculty Relationships

The importance of student-faculty relationships in the previously reviewed attrition research points out the need for better understanding about the nature of these relationships. In fact, relatively little is known about the nature and frequency of student-faculty interaction on college campuses. Most of the research in this area, however, suggests that out-of-class interaction, at least in most institutions, is fairly infrequent and superficial (14). Wilson, Wood, and Gaff (75) analyzed the relationship between the extent of interaction out-of-class and a number of faculty characteristics to determine if there are characteristics of faculty members that seem to facilitate or impede interaction with students beyond the classroom. Questionnaires were mailed to 1,556 faculty in six diverse institutions. Responses on the questionnaire

indicated the number of ten to fifteen minute conversations that the faculty members had with students out-of-class and the nature of these discussions.

Of the six discussion content areas, the two in which faculty reported the greatest number of contacts are, not surprisingly, those most central to the role of a college or university teacher: "to discuss intellectual or academic matters with a student" and "to give basic information and advice about his academic program" (75, p. 78). Also, a number of social-psychological variables were found to be significantly related to the extent of faculty interaction with students. An analysis of these variables indicates that faculty who have little interaction with their students outside the classroom manifest their inaccessibility for such contact by a variety of subtle cues, which in effect say to the student that the process of learning is essentially one of fulfilling formal classroom assignments and mastering the facts and other prescribed content of a given body of knowledge. "When each of these teaching styles rather than frequency of interaction is treated as the prior independent variable, it is apparent that faculty who have little contact with students do little to invite such contact, indeed may do much to discourage it" (75, p. 85).

In a subsequent study, Wilson and others (76) had students rate the teachers that had the greatest impact on their college experience. The results verify not only the importance of

out-of-class contact but the importance of classroom behavior that encourages such contact. The top five characteristics students give for the most influential faculty are: "available and open to my discussion," "stimulated me intellectually," "helped me feel confident of my own abilities," "demanded high quality work from me," and "interested me in his or her field" (76, p. 131). An interesting minor finding is that teachers who were ascribed with these qualities also are the ones who are most satisfied with teaching and the quality of their students.

Terenzini and Pascarella (67) examined the impact of student-faculty interaction while holding pre-enrollment characteristics constant. Their study uses the criteria for the quality and quantity of student-faculty interaction that was designed by Wilson, Wood, and Gaff (75). The purpose of Terenzini and Pascarella's (67) study was to assess the degree to which the quality and the frequency of student-faculty informal contacts are positively associated with freshmen-year students' academic performance and their intellectual and personal development. The results indicate that (with pre-enrollment differences among entering freshmen held constant) measures of the frequency of student-faculty informal contact are significantly and positively associated with freshman year academic performance, intellectual development, and personal development.

Satisfaction and Attrition

The relationship between attrition and student's satisfaction with college was established earlier in this literature review. This section will present a brief summary of other data to support the efficacy of exploring this relationship.

Students who perceived a discrepancy between themselves and their college report high dissatisfaction with the college and tend to rate the college as dull, boring, etc. (55, p. 293). Astin (4, p. 14) reports that the primary reason men and women give for dropping out is boredom with the courses. Start, Betz, and Menne (62, p. 322) propose that the essential difference between voluntary and nonvoluntary withdrawals is merely in the degree of satisfaction with the rewards students receive in the course of meeting the various requirements of the college; the voluntary withdrawal is not satisfied with these rewards and will leave to seek an institution with a more rewarding structure, while the nonvoluntary withdrawal, in spite of academic failure, has been well-enough satisfied with nonacademic rewards that the student persists until forced to leave. Hannah and McCormick (25, p. 43) state that the leavers ranked student dissatisfaction with the college as a higher reason for withdrawal than did the college. Kowalski says,

> It was found that a majority of the dropouts were satisfied with the general atmosphere at school only sometimes or never; however, a greater majority of the persisting students expressed satisfaction with the general atmosphere 'most of the time or always."

> The data also indicated that a far greater percentage of the nonpersisting students perceived the attitudes of their advisors to be one of unconcern. It was also observed that a greater percentage of the persisting students perceived the attitudes of their advisors to be concerned. Similarly, a far greater percentage of the dropouts believed the attitudes of their faculty members to be unconcerned (37, p. 65).

Spady, who believes that student satisfaction is an intervening variable, says,

> We would like to suggest that the link between social integration and dropping out is actually indirect. Intervening are at least two critical variables that flow from the integration process: satisfaction with one's college experiences and commitment to the social system (i.e. college). The addition of these two variables is based on two assumptions: first, that one's satisfaction with the college experience will depend on the available social as well as academic rewards; and second, that sustaining one's commitment to the college first requires both a sense of integration in the system and a sufficient number of positive rewards (60, p. 78).

Based on the research on the relationship between student satisfaction with college and attrition, Hoyt developed the following list of five assumptions:

> 1. Persisting in college represents a choice that is available to most students. The number of students doomed to academic failure by a lack of innate ability is relatively small. This assumption seems tenable because failure rates are generally low and a sizeable portion of those dismissed on academic grounds could, in theory, have avoided that fate if sufficient assistance had been made available (such as study habits, reading skills, and course selection);
> 2. Persistence will be chosen when satisfactions (both realized and anticipated) associated with it exceed those associated with any other choice. Human beings seek to enhance their personal satisfaction. However, personal satisfactions may result from altruistic behavior. An individual with an overwhelming drive to relieve hunger in the world may well elect a life of service; such a decision would be consistent with this proposition;

3. Lacking satisfaction in a given situation, individuals will experiment with alternative choices and select one that is judged to have the highest probability of providing satisfaction. Although satisfaction is a relative matter, people seek to change their situations when satisfaction is absent. That is they do not tolerate neutral feelings about their situations, let alone dissatisfaction. The persuasiveness of this proposition may be increased by the next one, which clarifies the nature of satisfaction.
4. Satisfactions arise from two sources: a sense of progress (including expected progress) in reaching personal goals and a sense of comfort with the environment (acceptance, security, freedom from pressure). Satisfaction of the first type is dependent on three interrelated events: the development and recognition of personally meaningful goals, and the selection of an alternative which has a high probability of achieving (or progressing toward) the goals. Satisfaction of the second type speaks more to the human needs for security and love than to needs for achievement. Such needs are just as human, and hence just as legitimate;
5. Enduring satisfaction (sound choices) require support from both sources of satisfaction. A student may feel comfortable in his or her environment (accepted by friends, free from financial concern, confident in meeting academic requirement) and yet be uncommitted to any personal goals. Another student may be systematically progressing toward admission to a professional school which, upon completion, will open the door to a highly satisfying career and style of life; but this may require sacrificing interpersonal pleasures, engaging in cut-throat competition, and accepting serious threats to health. Neither type of student will find enduring satisfaction (28, p. 79).

In summary, Hoyt states,

A meaningful research program that addresses these questions would have as its goal the development of increased institutional potency in contributing the students satisfaction. It is important to note that this satisfaction may not be with the institution and its programs, since they may be unable to respond effectively to the student's needs (28, p. 81).

Summary of Related Literature

Judging from this survey of related literature, it would be safe to assume that the majority of dropouts are voluntary. The decision a student makes to drop out is the result of the unsuccessful integration of the student within the academic and social systems of the college. The process of integration is longitudinal and dynamic, and it consists of complex interactions between the student and the institution. Many of the inconsistencies in the research on the personality and background of the dropout can be explained by examining the interaction of specific student characteristics with specific environments of the college. Student self-reports of satisfaction with the college can be used to identify discrepancies between a student and the institution, which may reduce a student's commitment to that institution and result in a decision to withdraw.

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CHAPTER III

PROCEDURES OF THE STUDY

Description of the Population

The population of this study was randomly selected from the student master records of students enrolled on-campus in the Spring semester, 1981, at Mountain View College in Dallas, Texas. Mountain View College, one of the seven Dallas County Community College District campuses, is an open admissions institution with a service area that covers a large portion of southwest Dallas County, which has a population of approximately 225,000. The service area is diverse and extreme; it ranges from impoverished inner city to upper-middle class city and surburban neighborhoods.

The racial composition of the college's student population is very similar to that of the area's population. Approximately 50 per cent of the student population were enrolled in academic programs, and the remainder were enrolled in one- and two-year technical and occupational programs. The division of day and evening enrollment was also approximately 50 per cent. During the Spring, 1981, semester, there were 5,009 students enrolled in on-campus programs.

The procedures that were followed in the student sampling are those outlined by Roscoe (1), who indicates that 500

students is adequate for a representative sample. Randomness was achieved by the application of a computer program that generated and assigned random numbers to the total on-campus student population of 5,009. The sample constructed from this process was a list of 500 student names and addresses. A total of 358 survey instruments were returned, 29 of which were not usable; the total number of usable surveys remained at 329 or 65.8 per cent. In order to establish credibility, an a priori cutoff level of 65 per cent was established for return of questionnaires. The cutoff level used in this study is based upon the percentage suggested by Shannon (2).

Table XL data present specific background characteristics of the sample population. For example, of the responding students, 38 per cent are age twenty-two and younger, 49 per cent are between twenty-three and thirty-nine, and almost 13 per cent are forty and older. The age, racial mix, and ratio of male and female students is an almost exact parallel of the total student population. Over one-third (35.3 per cent) of the students are employed part-time (0-30 hours), and 63 per cent work 31 or more hours per week. Over 80 per cent of the part-time students are married, as compared to 42 per cent of the full-time students. The number of male and female married students is almost equal--44 per cent and 48 per cent. Less than 20 per cent of the students receive financial aid.

Very few of the respondent students have no goal in mind (2.7 per cent). The reasons given by the majority of students

for attending college are plan to receive an associate degree and plan to transfer; self-improvement is the next largest category. Although there are no substantial sex related differences, there are rather dramatic age related differences. The older students listed taking courses for self-improvement at a rate almost twice the youngest students. Plans for transferring to another institution decrease substantially with older students. Plans for completing an associate degree are the highest for students in the twenty-three to thirty-nine age bracket. A surprising finding is the larger number of older students who plan to complete a bachelor's degree. This inconsistency, however, may be explained by the limitation of the Student Opinion Survey to choose only one purpose for attending college. Once students indicated a plan to transfer to another college, it eliminated the possibility to indicate a plan to obtain a bachelor's degree. It may also, however, indicate the lack of long-range goals on the part of many of the younger students.

Table XL also indicates that a relatively small percentage of students are undecided about a major or occupational choice. The largest percentage of major and occupational choices center around the area of business and commerce. There are a variety of sex related differences along traditional male and female lines. For example, males list engineering as a major at a rate four times greater than females. The reverse is true for the health-related professions; females list this

choice three times more frequently. An interesting age related difference is the slightly greater tendency for older students (age forty and over) to list applied-fine arts as major and occupational choices. The students who made up the sample population of this study appear to be an adequate representation of the total population at the selected community college during the Spring semester, 1981.

The Survey Instrument

The Student Opinion Survey, which is published by the American College Testing Service (3, see Appendix) consists of five sections. Section I, Background Information, contains sixteen items; section II, College Services, contains twenty-three items; section III, College Environment, contains forty-two items; section IV, Optional Questions, contains up to thirty items; and section V, Comments and Suggestions, provides space for respondents to comment about the college.

This study utilizes only sections I and III. Section I contains a variety of demographic and background variables that include social security number, age, racial-ethnic group, class, sex, marital status, major, and occupational choice. Section III contains Likert-type items that allow students to assess their level of satisfaction with a variety of characteristics of the college environment.

The standard types of internal-consistency reliability indices, which are typically reported with assessment

instruments (KR-21, coefficient etc.), are not appropriate for use with the Student Opinion Survey because this instrument has no correct answers and no logical scales on which to base a total score. The most meaningful approach to determining the reliability of this type of instrument is to administer it to a group of students on two separate occasions and compare the responses (test-retest reliability), Even when this is done, correlational indices will not be appropriate for any items that request categorical (nominal) data. For these Reasons, ACT reports the preliminary reliability data in terms of the percentages of respondents who selected the same (or similar) item responses on two separate administrations of the instrument (3, p. 10). Table I indicates the percentage of identical item responses on the two administrations of the instrument (3, p. 11).

Table I

STUDENT OPINION SURVEY CATEGORICAL (NOMINAL) ITEMS

Type of Items	Percentage of Identical Item Responses on the Two Administrations of the Instrument
Section I Demographic Background Items (age, race, sex, etc.)	98
Section I Other Background Items (hours worked per week, educational goals, occupational plans, etc.)	89

Table II indicates the percentage of identical item responses on the two administrations of the instrument on the five-choice (Likert) satisfaction items (3, p. 11).

TABLE II

STUDENT OPINION SURVEY FIVE-CHOICE (LIKERT) SATISFACTION ITEMS

Type of Items	Per Cent of Identical Item Responses on the Two Administrations of the Instrument	Per Cent of Responses within 1 Scale Point of the Identical Response*
Section II Satisfaction with College Programs and Services	70	81
Section III Satisfaction with Academic Aspects of the College Environment	66	95
Section III Satisfaction with Admissions Related Aspects of the College Environment	54	88
Section III Satisfaction with College Rules and Regulations	60	83
Section III Satisfaction with College Facilities	57	88
Section III Satisfaction with Aspects of the College Related to Registration	67	93
Section III Satisfaction with General Aspects of the College Environment	57	85
Totals for All Section III Items	60	89

*Example: The response of a student who selected (4) "Satisfied" for a particular item during the first administration of the instrument and (5) "Very Satisfied" during the second administration would be included in this column.

The normative data for the Student Opinion Survey is based on 13,998 student records obtained from forty-two colleges that administered the ACT Student Opinion Survey between October 1, 1979, and September 30, 1980. Normative data of this type are often referred to as user norms since they simply represent a composite of the results of all instruments scored during a particular period of time. The colleges represented in the ACT report include both large and small, public and private, and two-year and four-year institutions from twenty-three states across the country. The normative data for the total sample of 13,998 students are presented for various subgroups of students based on class level, sex, race, age, part-time status, and college type (4).

Procedures for the Collection of Data

On January 19, 1981, each student in the sample was mailed a packet containing the Student Opinion Survey, a letter from the vice president of student services explaining the study, and a return postage-paid envelope. Students were asked to return the completed questionnaire within forty-eight hours. Each questionnaire used in this first mailing was coded by cutting an angular piece from the right corner. Two hundred and eighteen (218) completed questionnaires were returned as a result of this first mailing.

Students who required a second mailing were identified by matching social security number of the questionnaires returned with the master sample list. On February 2, 1981, a

packet containing a Student Opinion Survey (coded by removal of the left corner), a letter from the vice president of student services indicating the importance of participating in the study, and a return postage-paid envelope was mailed to the students who had not returned the first mailing. The second mailing resulted in a return of ninety-two completed questionnaires.

A third attempt to meet the required 65 per cent was initiated on February 16, 1982. This procedure involved the direct delivery of the packet to students in their respective classes. Student class schedules were determined by a computerized match of social security numbers with the student master record. Each instructor received a letter from the vice president of student services asking them to deliver the packet to the students identified on their class rolls. The packet differed from the previous two in that the Student Opinion Survey was unmarked, and the letter from the vice president of student services requested that the student complete the questionnaire within forty-eight hours and return the questionnaire directly to the testing center. Forty-eight (48) questionnaires were returned in this final round. Students were assured of confidentiality in all three data collection procedures.

Each optical-scan questionnaire was carefully checked before mailing to the American College Testing Service in Iowa City, Iowa, for scoring. Twenty-nine were found to be

un-usable and were discarded. ACT was requested to produce a hard copy print-out showing the percentage of students responding to each item on the questionnaire and a magnetic computer tape that was compatible with the central processing unit that was used for the analysis of data. The computer tape was copied onto permanent disc storage to simplify access during data analyses.

The number of courses dropped within the semester was determined by a computer program that computed the percentage of W grades received by each student. Students were divided into the following groups: W-0 (students who received no W grades), W-1 (students who received 25 per cent W grades), W-2 (students who received 50 per cent W grades), W-3 (students who received 75 per cent W grades), and W-4 (students who received 100 per cent W grades). This method was chosen to allow for a more accurate analysis of the impact on satisfaction of dropping a course within the semester and the probability of the student returning in a subsequent regular semester.

Students who did not return to the selected community college were identified by a computer program that matched the social security numbers of all students enrolled in the Fall semester of 1981. This match produced a list of students by name and telephone number who did not return in the Fall semester, 1981. A telephone call was made to each student on the list to determine their current status (i.e., were they

attending any other college or university, and if not, did they plan to return to the selected community college or any other college or university).

The list of students who did not return in the Fall semester, 1981, totaled 155, or 47 per cent of the 329 students in this study. Of these 155 students, 78 per cent, or 121, responded to the telephone survey. The results indicate that 62 students (51 per cent) were attending other colleges or universities in the Fall semester, 1982, and 59 students (49 per cent) were not enrolled in any college or university. Of those who were not enrolled, 18 students (31 per cent) stated that they planned to return to college, and 41 students (69 per cent) stated that they did not plan to return to college.

Procedures for Treatment of Data

The data obtained from the survey instrument were compiled for statistical computation. The individual hypotheses were treated by using statistical procedures outlined by Roscoe (1). All the data were entered directly from the American College testing Service computer tape and all the statistical computations were performed by computer.

Hypothesis I was tested by utilizing a single criterion (number of courses dropped within a selected semester as measured by the percentage of W grades a student receives) to determine if there were a significant relationship between the number of courses a student drops and the student satisfaction with the college environment. Hypothesis II was

tested by utilizing a single criterion (student satisfaction with the college environment) to determine if there was a significant relationship between student satisfaction with the college environment and age, sex, race, freshman or sophomore status, employment status, full-time or part-time status, purpose for attending college, major, and occupational choices. Hypothesis III was tested by utilizing a single criterion (number of courses dropped within a selected semester--as measured by the percentage of W grades a student receives) and age, sex, race, freshman or sophomore status, employment status, full-time or part-time status, major choice, and purpose for attending college. Hypotheses I, II, and III were statistically analyzed by analysis of variance. Analysis of variance was chosen because it provides a flexible procedure for the determination of the factors that influence the variation of a dependent variable (5).

Hypothesis IV was tested by correlating the percentage of Ws a student received in the Spring semester, 1981, with their non-return for the Fall semester, 1981. The Pearson product moment correlation was chosen to statistically analyze this relationship. Hypothesis V was analyzed by stepwise regression analysis, which was chosen to test the relationship between the combined independent variables (student background characteristics and student satisfaction with the college environment) with the dependent variable (course withdrawal).

Hypothesis VI was statistically analyzed by stepwise regression analysis which was chosen to test the relationship between the combined independent variables (student background characteristics and student satisfaction with the college environment) with the dependent variable (non-return in a subsequent regular semester). The principal factors method [with orthogonal rotation using the varimax method (5)] was used to test Hypothesis VII.

Summary

This study was conducted at an urban community college in the Spring semester, 1981. From a total of 358 randomly selected students who responded to a survey instrument, 329 respondents were used in the final analysis of data. A description of the sample population and the survey instrument, as well as procedures for collecting and treating the data, were presented in the body of this chapter. Analysis of variance, Pearson product moment correlation, stepwise regression analysis and factor analysis were the statistical methods used in testing the research hypotheses.

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CHAPTER IV

PRESENTATION AND ANALYSIS OF THE DATA

Introduction

The purpose of this chapter is to describe and analyze the statistical findings of the study. The data were analyzed through the use of four statistical techniques. Analysis of variance (ANOVA), Pearson product moment correlation, multiple regression analysis using stepwide procedures, and factor analysis were used in the testing of the research hypotheses. A significance level of .05 was established for acceptance of hypotheses I through IV. Hypotheses V and VI required an increase in explained variance and hypothesis VII required a factor loading of $\pm$ .40 for acceptance. Definitions and treatment of statistical terms and symbols are explained in the Appendices.

Categories for the percentages of W grades were established at W-0 (no courses dropped), W-1 (25 per cent courses dropped), W-2 (50 per cent courses dropped), W-3 (75 per cent courses dropped), and W-4 (100 per cent courses dropped). This method avoids the problem of discriminating between the potential difference in impact of dropping three or four courses as opposed to dropping only one course.

The students responded to each item in Section III of the Student Opinion Survey by indicating their level of satisfaction with that particular element of the college environment. Indications of levels of satisfaction include very satisfied, satisfied, neutral, dissatisfied, and very dissatisfied. Questionnaires were compared to determine if there were inherent differences in student responses for the first, second, and third mailing. No inherent differences were found among the three groups. In order to facilitate the data presentation, only statistically significant findings are reported.

Hypothesis I: Satisfaction and Course Withdrawal

Hypothesis I predicts that a significant relationship exists between the number of courses a student dropped in the Spring semester, 1981 (as measured by the percentage of W grades a student received) and student satisfaction with the college environment. Table III data show that item 7--class size relative to the type of course--yielded an F ratio of 3.758 that is significant beyond the .05 level; this indicates that a significant relationship exists between satisfaction and course withdrawal.

Since the number of courses that students dropped are arranged in categories from 0 to 100 per cent, it is possible to compare the means for satisfaction with the percentage of courses dropped. As indicated in Table IV, the students who

TABLE III

SUMMARY OF SIGNIFICANT ANOVAS FOR STUDENT SATISFACTION AND COURSE WITHDRAWAL

Item	Variables	Source of Variance	Sum of Squares	Mean Square	F Ratio	P
7	Class size relative to the type of course	Between Groups	1.094	.273	3.758	.0053*
		Within Groups	22.779	.073	. .	. . .
		Totals	23.873	. .	. .	. . .
9	Availability of your advisor	Between Groups	.968	.242	3.275	.0121*
		Within Groups	19.440	.074	. .	. . .
		Totals	20.408	. .	. .	. . .
34	Concern for you as an individual	Between Groups	1.123	.281	3.750	.0054*
		Within Groups	22.618	.075	. .	. . .
		Totals	23.741	. . .	. .	. . .

*Significant.

TABLE IV

MEANS OF SIGNIFICANT ANOVAS RELATIONSHIP BETWEEN STUDENT SATISFACTION AND COURSE WITHDRAWAL

Item	Variables	Levels of Satisfaction	Mean	Standard Deviation	N
7	Class size relative to the type of course	Very Satisfied	.1178	.2423	99
		Satisfied	.1276	.2607	171
		Neutral	.1632	.3235	31
		Dissatisfied	.2685	.3943	16
		Very Dissatisfied	1.000	0	1
9	Availability of your advisor	Very Satisfied	.1561	.2850	60
		Satisfied	.1065	.2333	123
		Neutral	.1613	.2794	73
		Dissatisfied	.3701	.4580	10
		Very Dissatisfied	.5000	.7071	2
34	Concern for you as an individual	Very Satisfied	.1226	.2632	52
		Satisfied	.1046	.2208	168
		Neutral	.2385	.3604	70
		Dissatisfied	.2483	.3900	14
		Very Dissatisfied	0	0	0

were dissatisfied or neutral with class size relative to the type of course had a larger mean for course withdrawal than students who were satisfied with this characteristic of the college environment. This larger mean indicates that students who were dissatisfied or neutral withdrew from a greater percentage of courses than the satisfied or very satisfied students.

Item 9, availability of your advisor, yielded an F ratio of 3.275 that is significant beyond the .05 level. Table IV data show that students who were neutral, dissatisfied or very dissatisfied withdrew from a larger percentage of courses than students who were satisfied. It is interesting to note that students who were very satisfied withdrew at a slightly higher rate than students who were satisfied.

Item 34, concern for you as an individual, yielded an F ratio of 3.750 that is significant beyond the .05 level. A comparison of the means in Table IV indicates a pattern that is similar to the one for item 9. Students who were neutral or dissatisfied withdrew from a larger percentage of courses than students who were satisfied. Once again, however, students who were very satisfied withdrew at a slightly higher rate than students who were satisfied.

Due to the consistently higher withdrawal means for neutral students as compared to satisfied students, the ANOVA was repeated using dichotomized variables that combined very

satisfied with satisfied and combined neutral with dissatisfied and very dissatisfied. This procedure yielded a much larger F ratio (7.234) for item 34, concern for you as an individual. Significance was increased from .0053 (Table IV) to .0009 (Table V). Neutral, dissatisfied, and very dissatisfied students had a mean for withdrawal that was over two times greater than the mean of students who were satisfied or very satisfied (Table VI).

Item 9, availability of your advisor, and item 34, concern for you as an individual, did not prove to be significant on the dichotomized ANOVA. An additional item, however, did become significant. Item 35, attitude of college nonteaching staff toward students, yielded an F ratio of 3.530 that is significant beyond the .05 level (Table V). Table VI indicates that students who are neutral, dissatisfied, or very dissatisfied have a greater mean for course withdrawal than students who are very satisfied or satisfied.

In summary, Hypothesis I predicts that a significant relationship exists between the number of courses students drop in a selected semester, as measured by the percentage of W grades a student receives, and student satisfaction with the college environment. As predicted, it was found that three satisfaction variables (class size relative to the type of course, availability of your advisor, and concern for you as an individual) are significantly related to course

TABLE V

SUMMARY OF SIGNIFICANT DICHOTOMIZED ANOVAS FOR STUDENT SATISFACTION AND COURSE WITHDRAWAL

Item	Variables	Source of Variation	Sum of Squares	F Ratio	P
34	Concern for you as an individual	Between Groups	1.064	7.234	.0009*
		Within Groups	22.799	.074	. . .
		Totals	23.863	. .	. . .
35	Attitude of college nonteaching staff toward students	Between Groups	.511	3.530	.0306
		Within Groups	20.117	. .	. . .
		Totals	20.628	. .	. . .

*Significant.

TABLE VI

MEANS OF SIGNIFICANT DICHOTOMIZED ANOVAS RELATIONSHIP BETWEEN STUDENT SATISFACTION AND COURSE WITHDRAWAL

Item	Variables	Levels of Satisfaction	Mean	Standard Deviation	N
34	Concern for you as an individual	Very satisfied-satisfied	.1089	.2310	220
		Dissatisfied-neutral very dissatisfied	.2318	.3594	87
35	Attitude of college nonteaching staff toward students	Very satisfied-satisfied	.1057	.2488	183
		Dissatisfied-neutral very dissatisfied	.1970	.3004	92

withdrawal. Those students who were neutral or dissatisfied with these three elements of the college environment withdrew from a higher percentage of courses than students who were satisfied or very satisfied. Therefore, hypothesis I is accepted.

Hypothesis II: Satisfaction and Student Characteristics

Hypothesis II predicts that a significant relationship exists between student satisfaction with the college environment and age, race, class level, sex, number of hours employed, full-time or part-time status, major choice, and occupational choice. In order to facilitate the data presentation only significant ANOVAS are reported.

Table VII indicates that twelve satisfaction variables are significantly related to age with F ratios that are statistically significant beyond the .05 level. These include item 1, testing-grading system, item 3, instruction in your major field, item 6, variety of courses offered by this college, item 7, class size relative to the type of course, item 10, value of information provided by your advisor, item 11, preparation you are receiving for your future occupation, item 15, college catalog and admissions publications, item 27, campus bookstore, item 30, general registration procedures, item 35, attitude of college nonteaching staff toward students, item 36, racial harmony at this college, and item 42, the college in general.

TABLE VII

SUMMARY OF SIGNIFICANT ANOVAS FOR STUDENT SATISFACTION AND AGE

Item	Variables	Source of Variance	Sum of Squares	Mean Square	F Ratio	P
1	Testing-grading system	Between Groups	9.124	4.562	9.105	.0001
		Within Groups	156.826	.501	. .	. . .
		Totals	165.950	. .	. .	. . .
3	Instruction in your major field	Between Groups	4.944	2.472	3.382	.0354
		Within Groups	203.184	.731	. .	. . .
		Totals	208.128	. .	. .	. . .
6	Variety of courses offered by this college	Between Groups	7.494	3.747	4.750	.0093
		Within Groups	245.350	.789	. .	. . .
		Totals	252.844	. .	. .	. . .
7	Class size relative to the type of course	Between Groups	4.213	2.106	3.396	.0347
		Within Groups	195.363	.620	. .	. . .
		Totals	199.576	. .	. .	. . .

TABLE VII--Continued

Item	Variables	Source of Variance	Sum of Squares	Mean Square	F Ratio	P
10	Value of information provided by your advisor	Between Groups	7.290	3.645	4.551	.0114
		Within Groups	211.414	.801	. .	. . .
		Totals	218.704	. .	. .	. . .
11	Preparation you are receiving for your future occupation	Between Groups	5.108	2.554	4.000	.0194
		Within Groups	175.611	.639	. .	. . .
		Totals	180.719	. .	. .	. . .
15	College catalog-admissions publications	Between Groups	4.119	2.059	3.036	.0495
		Within Groups	206.878	.678	. .	. . .
		Totals	210.997	. .	. .	. . .
27	Campus bookstore	Between Groups	9.545	4.772	6.034	.0027
		Within Groups	244.404	.791	. .	. . .
		Totals	253.949	. .	. .	. . .

TABLE VII--Continued

Item	Variables	Source of Variance	Sum of Squares	Mean Square	F Ratio	P
30	General registration procedures	Between Groups	5.059	2.530	3.515	.0309
		Within Groups	228.128	.720	. .	. . .
		Totals	233.187	. .	. .	. . .
35	Attitude of college non-reaching staff toward students	Between Groups	5.180	2.590	4.089	.0178
		Within Groups	172.289	.633	. .	. . .
		Totals	177.469	. .	. .	. . .
36	Racial harmony at this college	Between Groups	3.812	1.906	3.563	.0296
		Within Groups	159.950	.535	. .	. . .
		Totals	163.762	. .	. .	. . .
42	The college in general	Between Groups	2.568	1.284	3.017	.0500
		Within Groups	134.928	.426	. .	. . .
		Totals	137.506	. .	. .	. . .

A comparison of the means in Table VIII shows that there is an inverse relationship between age and satisfaction for item 1, testing and grading system, item 3, instruction in your major field, item 11, preparation you are receiving for your future occupation, item 15, college catalog and admissions publications, item 30, general registration procedures, item 35, attitude of college non-teaching staff toward students, and item 36, racial harmony at this college. The older the student, the more satisfied they appear to be with the college environment. There is a curvilinear relationship between age and satisfaction for item 6, variety of courses offered by this college, item 7, class size relative to the type of course, item 10, value of the information provided by your advisor, item 27, campus bookstore, and item 42, the college in general. Students in the 22 to 29 age group were less satisfied than either the 21 or under or the 30 and over students.

The data on race were collapsed into two categories, nonwhite and white, for analysis of variance testing. Four satisfaction variables (item 16, student voice in college policies, item 25, study areas, item 26, student union, and item 31, availability of the courses you want at the times you can take them) yielded F ratios that are significant beyond the .05 level (Table IX). An examination of the means in Table X reveals consistently lower levels of satisfaction for the white student population.

TABLE VIII

MEANS OF SIGNIFICANT ANOVAS RELATIONSHIP BETWEEN STUDENT SATISFACTION AND AGE

Item	Satisfaction Variable	Student Characteristic Age	Mean	Standard Deviation	N
1	Testing-grading system	21 or under	3.1389	.7293	108
		22-29	3.1725	.7919	102
		30 or over	2.7736	.5901	106
3	Instruction in your major field	21 or under	3.2500	.8468	92
		22-29	3.2000	.8944	95
		30 or over	2.9468	.8213	94
6	Variety of courses offered by this college	21 or under	2.9727	.8616	110
		22-29	3.2353	.9030	102
		30 or over	2.8627	.9015	102
7	Class size relative to the type of course	21 or under	2.8750	.7841	112
		22-29	3.0481	.8964	104
		30 or over	2.7647	.6627	102
10	Value of the information provided by your advisor	21 or under	3.0777	.8822	103
		22-29	3.3929	.9186	84
		30 or over	3.000	.8859	80
11	Preparation you are receiving for your future occupation	21 or under	3.2762	.8026	105
		22-29	3.3103	.8256	87
		30 or over	3.0000	.7670	86

TABLE VIII--Continued

Item	Satisfaction Variables	Student Characteristic Age	Mean	Standard Deviation	N
15	College catalog-admissions publications	21 or under	3.0667	.8351	105
		22-29	3.0882	.8572	102
		30 or over	2.8317	.7755	101
27	Campus bookstore	21 or under	3.0642	1.0299	109
		22-29	3.1980	.8834	101
		30 or over	2.7745	.7162	102
30	General registration procedures	21 or under	3.1835	.9346	109
		22-29	3.1810	.7694	105
		30 or over	2.9151	.8294	106
35	Attitude of college non-teaching staff toward students	21 or under	3.3469	.8863	98
		22-29	3.2747	.7463	91
		30 or over	3.0233	.7353	86
36	Racial harmony of this college	21 or under	3.2110	.8173	109
		22-29	3.0900	.6371	100
		30 or over	2.9355	.7184	93
42	The college in general	21 or under	2.7798	.7118	109
		22-29	2.8476	.6619	105
		30 or over	2.6321	.5745	106

TABLE IX

SUMMARY OF SIGNIFICANT ANOVAS FOR STUDENT SATISFACTION AND RACE

Item	Variables	Source of Variance	Sum of Squares	Mean Square	F Ratio	P
16	Student voice in college policies	Between Groups	3.222	3.222	6.257	.0131
		Within Groups	110.705	.515	. .	. . .
		Totals	113.927	. .	. .	. . .
25	Study areas	Between Groups	7.864	7.864	11.895	.0006
		Within Groups	193.051	.661	. .	. . .
		Totals	200.915	. .	. .	. . .
26	Student union	Between Groups	2.512	2.512	4.294	.0398
		Within Groups	94.163	.585	. .	. . .
		Totals	96.675	. .	. .	. . .
31	Availability of the courses you want at the times you can take them	Between Groups	5.944	5.994	4.592	.0329
		Within Groups	408.527	1.305	. .	. . .
		Totals	414.521	. .	. .	. . .

TABLE X

MEANS OF SIGNIFICANT ANOVAS RELATIONSHIP BETWEEN STUDENT SATISFACTION AND RACE

Item	Satisfaction Variables	Student Characteristic Race	Mean	Standard Deviation	N
16	Student voice in college policies	Nonwhite	3.5211	.7533	71
		White	3.7808	.6997	146
25	Study areas	Nonwhite	2.7857	.6462	98
		White	3.1327	.8845	196
26	Student union	Nonwhite	3.3651	.7684	63
		White	3.6200	.7625	100
31	Availability of the courses you want at the times you can take them	Nonwhite	3.3232	1.0957	99
		White	3.6204	1.1631	216

Class level was divided into two categories, sophomore or other and freshmen. Two satisfaction variables (item 16, student voice in college policies, and item 24, athletic facilities) yielded F ratios that are significant beyond the .05 level (Table XI). Freshmen have a higher mean (Table XII) for item 16, student voice in college policies, which indicates less satisfaction with this aspect of the college environment. Sophomores or others have a higher mean for item 24, athletic facilities, which indicates less satisfaction with the college's athletic facilities.

The satisfaction variables that are significantly related to sex include item 16, student voice in college policies, item 27, campus bookstore, item 36, racial harmony at this college, and item 42, this college in general. As indicated in Table XIII, each of these variables yielded an F ratio that is significant beyond the .05 level. Racial harmony has the highest F ratio by a significance of .0007. As shown in Table XIV, the lower means for females indicates that they have a consistently higher level of satisfaction for all four variables.

Table XV data indicates that there are significant relationships between the number of hours a student was employed and satisfaction with the college environment for item 1, testing and grading system, item 7, class size relative to the type of course, item 15, college catalog and admissions procedures, item 17, rules governing student

TABLE XI

SUMMARY OF SIGNIFICANT ANOVAS FOR STUDENT SATISFACTION AND CLASS

Item	Variables	Source of Variance	Sum of Squares	Mean Square	F Ratio	P
16	Student voice	Between Groups	3.708	3.708	7.233	.0071
	in college	Within Groups	110.218	.513	. .	. . .
	policies	Totals	113.926	. .	. .	. . .
24	Athletic	Between Groups	3.387	3.387	4.159	.0428
	facilities	Within Groups	151.464	. .	. .	. . .
		Totals	154.851	. .	. .	. . .

TABLE XII

MEANS OF SIGNIFICANT ANOVAS RELATIONSHIP BETWEEN STUDENT SATISFACTION AND CLASS

Item	Satisfaction Variable	Student Characteristic Class	Mean	Standard Deviation	N
16	Student voice in college policies	Sophomore or other	3.8080	.6803	125
		Freshman	3.5435	.7619	92
24	Athletic facilities	Sophomore or other	3.4261	.8792	115
		Freshman	3.1507	.9380	73

TABLE XIII

SUMMARY OF SIGNIFICANT ANOVAS FOR STUDENT SATISFACTION AND SEX

Item	Variables	Source of Variance	Sum of Squares	Mean Square	F Ratio	P
16	Student voice in college policies	Between Groups	5.478	5.478	10.860	.0011
		Within Groups	108.448	.504	. .	. . .
		Totals	113.926	. .	. .	. . .
27	Campus bookstore	Between Groups	3.658	3.658	4.531	.0341
		Within Groups	250.290	.807	. .	. . .
		Totals	253.948	. .	. .	. . .
36	Racial harmony at this college	Between Groups	6.222	6.222	11.849	.0007
		Within Groups	157.539	.525	. .	. . .
		Totals	163.761	. .	. .	. . .
42	This college in general	Between Groups	2.915	2.915	6.887	.0091
		Within Groups	134.582	.423	. .	. . .
		Totals	137.497	. .	. .	. . .

TABLE XIV

MEANS OF SIGNIFICANT ANOVAS RELATIONSHIP
BETWEEN STUDENT SATISFACTION
AND SEX

Item	Satisfaction Variable	Student Characteristic Sex	Mean	Standard Deviation	N
16	Student voice in college policies	Male	3.8209	.6700	134
		Female	3.4940	.7710	83
27	Campus bookstore	Male	3.1124	.9350	169
		Female	2.8951	.8534	143
36	Racial harmony at this college	Male	3.2143	.7826	168
		Female	2.9254	.6445	134
42	This college in general	Male	2.8400	.6760	175
		Female	2.6483	.6184	145

TABLE XV

SUMMARY OF SIGNIFICANT ANOVAS FOR STUDENT SATISFACTION AND HOURS EMPLOYED

Item	Variables	Source of Variance	Sum of Squares	Mean Square	F Ratio	P
1	Testing-grading system	Between Groups	7.577	1.515	2.590	.0259
		Within Groups	180.220	.585	. .	. . .
		Totals	187.797	. .	. .	. . .
7	Class size relative to the type of course	Between Groups	10.697	2.139	3.144	.0088
		Within Groups	210.983	.681	. .	. . .
		Totals	221.680	. .	. .	. . .
15	College catalog-admissions procedures	Between Groups	10.366	2.073	2.768	.0184
		Within Groups	226.241	.749	. .	. . .
		Totals	236.607	. .	. .	. . .
17	Rules governing student con-duot at their college	Between Groups	10.877	2.175	4.117	.0013
		Within Groups	140.531	.528	. .	. . .
		Totals	151.408	. .	. .	. . .

TABLE XV--Continued

Item	Variables	Source of Variance	Sum of Squares	Mean Square	F Ratio	P
22	Classroom facilities	Between Groups	6.990	1.398	2.560	.0274
		Within Groups	167.135	.546	. .	. . .
		Totals	174.125	. .	. .	. . .
26	Student union	Between Groups	11.346	2.269	2.744	.0209
		Within Groups	131.466	.827	. .	. . .
		Totals	142.812	. .	. .	. . .
34	Concern for you as an individual	Between Groups	9.696	1.939	2.499	.0309
		Within Groups	233.601	.776	. .	. . .
		Totals	243.297	. .	. .	. . .
36	Racial harmony at this college	Between Groups	8.570	1.714	2.468	.0232
		Within Groups	190.952	.647	. .	. . .
		Total	199.522	. .	. .	. . .
37	Opportunities for student employment	Between Groups	12.458	2.492	3.038	.0117
		Within Groups	145.972	.820	. .	. . .
		Totals	148.430	. .	. .	. . .

conduct at this college, item 22, classroom facilities, item 26, student union, item 34, concern for you as an individual, item 36, racial harmony at this college, and item 37, opportunities for student employment. Each of these variables yielded an F ratio that is significant beyond the .05 level. The highest F ratio (4.117, p = .0013) was obtained for the relationship between student's satisfaction with the (item 17) rules governing student conduct at this college and the number of hours employed. With all but two variables (item 22, classroom facilities and item 26, student union) there is a consistent relationship of lower satisfaction for the groups who were employed for 1 to 10 hours per week and those who were employed over 40 hours per week (Table XVI).

The analysis of variance of the relationship between full-time or part-time status and student satisfaction with the college environment yielded only one significant satisfaction variable--item 1, testing and grading system (Table XVII). This ANOVA resulted in an obtained F ratio of 4.650 that is significant at the .0318 level. Table VIII reveals that full-time students have a higher mean and consequently are less satisfied with the college's testing and grading system.

Student's major choice and satisfaction with the college environment are significantly related with item 5, the attitude of faculty toward students, item 15, college catalog

TABLE XVI

MEANS OF SIGNIFICANT ANOVAS RELATIONSHIP BETWEEN STUDENT SATISFACTION AND HOURS EMPLOYED

Item	Satisfaction Variable	S.C.* Hours Employed	Mean	Standard Deviation	N
1	Testing-grading system	0	3.000	.8554	42
		1-20	3.1729	.7777	23
		11-20	2.8889	1.0500	27
		21-30	3.0435	3.666	23
		31-40	2.7909	.7793	110
		over 40	3.1461	.6666	89
7	Class size relative to the type of course	0	2.5610	.7433	41
		1-10	3.2083	.8836	24
		11-20	2.6296	.9260	27
		21-30	2.9565	.8245	23
		31-40	2.8273	.8868	110
		over 40	3.0220	.7300	91
15	College catalog-admissions procedures	0	2.9024	.8002	41
		1-10	2.8636	.8335	22
		11-20	3.0000	1.2583	25
		21-30	3.0909	.9211	22
		31-40	2.7768	.8874	112
		over 40	3.2209	.7094	86
17	Rules governing student conduct at this college	0	3.0750	.8286	40
		1-10	3.2353	.6642	17

TABLE XVI--Continued

Item	Satisfaction Variables	Student Characteristic Hours Employed	Mean	Standard Deviation	N
		11-20	3.1852	.8338	27
		21-30	3.0952	.7003	21
		31-40	2.9239	.7447	92
		over 40	3.4267	.6189	75
22	Classroom facilities	0	2.7073	.5020	41
		1-10	3.1793	.7168	23
		11-20	2.8148	.6225	27
		21-30	3.0435	.7057	23
		31-40	2.7523	.8406	109
		over 40	3.000	.7385	89
26	Student union	0	3.2500	1.0321	24
		1-10	3.7273	1.037	11
		11-20	3.1667	1.4035	12
		21-30	3.8667	.6399	15
		31-40	3.2333	.9454	60
		over 40	3.7209	.5906	43
34	Concern for you as an individual	0	2.8250	.7808	40
		1-10	3.2381	.9437	21
		11-20	2.9259	1.2687	27
		21-30	2.9565	.7057	23
		31-40	3.1204	.9640	108
		over 40	3.3409	.6761	88
36	Racial harmony at this college	0	2.7250	.7157	40
		1-10	3.0870	.6683	23

TABLE XVI--Continued

Item	Satisfaction Variables	Student Characteristic Hours Employed	Mean	Standard Deviation	N
		11-20	3.0769	1.1635	26
		21-30	3.1739	.8869	23
		31-40	2.9524	.8249	105
		over 40	3.2381	.6876	84
37	Opportunities for student employment	0	3.5652	1.1610	23
		1-10	3.0667	.7037	15
		11-20	2.9474	1.2681	19
		21-30	3.6111	.9164	18
		31-40	3.2712	.9619	59
		over 40	3.700	.5051	50

*Student characteristic.

TABLE XVII

SUMMARY OF SIGNIFICANT ANOVAS FOR STUDENT SATISFACTION AND FULL-TIME-PART-TIME STATUS

Item	Variables	Source of Variance	Sum of Squares	Mean Square	F Ratio	P
1	Testing-	Between Groups	2.690	2.690	4.650	.0318
	grading	Within Groups	181.106	.579	. .	. . .
	system	Totals	183.796	3.269	. .	. . .

TABLE XVIII

MEANS OF SIGNIFICANT ANOVAS RELATIONSHIP OF STUDENT SATISFACTION AND FULL-TIME-PART-TIME STATUS

Item	Satisfaction Variables	Student Characteristic Full- Part-Time Status	Mean	Standard Deviation	N
1	Testing-grading system	Full-time	3.1111	.8909	99
		Part-time	2.9120	.6933	216

and admissions publications, item 24, athletic facilities, and item 34, concern for you as an individual (Table XIX). The relationship between satisfaction item 5, attitude of faculty toward students, obtained the highest F ratio (6.290), which is significant at the .0132 level. Table XX presents the categories for choice of major as no choice and all other choices. An examination of the means in Table XX indicates that there is a consistent pattern of lower means or higher satisfaction for students who indicated no choice of major.

Occupational choice, categorized by no choice and all other choices, and student satisfaction yielded significant F ratios, which are significant beyond the .05 level, on satisfaction variables item 11, preparation you are receiving for your future occupation, and item 31, availability of the courses you want at times you can take them (Table XXI). Table XXII data show that students who indicated no occupational choice were less satisfied with item 11, the preparation they are receiving for a future occupation. The reverse is true for item 31, the availability of the courses you want at times you can take them. Students who indicated no occupational choice were more satisfied.

In summary, Hypothesis II predicts that there are significant relationships for student satisfaction with the college environment and age, sex, race, freshmen or sophomore status, full-time or part-time status, purpose for attending

TABLE XIX

SUMMARY OF SIGNIFICANT ANOVAS FOR STUDENT SATISFACTION AND MAJOR CHOICE

Item	Variables	Source of Variance	Sum of Squares	Mean Square	F Ratio	P
5	Attitude of faculty toward students	Between Groups	3.840	3.840	6.290	.0132
		Within Groups	194.829	.619	. .	. . .
		Totals	198.669	. .	. .	. . .
15	College catalog-admissions publications	Between Groups	3.468	3.468	4.575	.0332
		Within Groups	234.211	. .	. .	. . .
		Totals	237.679	. .	. .	. . .
24	Athletic facilities	Between Groups	5.494	5.494	5.169	.0241
		Within Groups	203.014	1.063	. .	. . .
		Totals	208.508	. .	. .	. . .
34	Concern for you as an individual	Between Groups	3.343	3.343	4.138	.0428
		Within Groups	251.283	.808	. .	. . .
		Totals	254.576	. .	. .	. . .

TABLE XX

MEANS OF SIGNIFICANT ANOVAS RELATIONSHIP OF STUDENT SATISFACTION AND MAJOR CHOICE

Item	Satisfaction Variables	Student Characteristic Major Choice	Mean	Standard Deviation	N
5	Attitude of faculty toward students	All other choices	2.7729	.7857	273
		No choice	2.4545	.7911	44
15	College catalog-admissions publications	All other choices	3.0113	.8400	266
		No choice	2.7111	1.0362	45
24	Athletic facilities	All other choices	3.3012	.9876	166
		No choice	2.8148	1.2721	27
34	Concern for you as an individual	All other choices	3.1617	.8424	266
		No choice	2.8723	1.1725	47

TABLE XXI

SUMMARY OF SIGNIFICANT ANOVAS FOR STUDENT SATISFACTION AND OCCUPATIONAL CHOICE

Item	Variables	Source of Variance	Sum of Squares	Mean Square	F Ratio	P
11	Preparation you are receiving for your future occupation	Between Groups	3.299	3.299	3.915	.0488
		Within Groups	237.616	.843	. .	. . .
		Totals	240.915	. .	. .	. . .
31	Availability of the courses you want at the times you can take them	Between Groups	6.105	6.105	4.043	.0452
		Within Groups	481.658	1.510	. .	. . .
		Totals	487.763	. .	. .	. . .

TABLE XXII

MEANS OF SIGNIFICANT ANOVAS RELATIONSHIP OF STUDENT SATISFACTION AND OCCUPATIONAL CHOICE

Item	Satisfaction Variables	Student Characteristic Occupational Choice	Mean	Standard Deviation	N
11	Preparation you are receiving for your future occupation	All other choices	3.0902	.9297	244
		No Choice	3.4000	.8412	40
31	Availability of the courses you want at times you can take them	All other choices	3.5203	1.2467	271
		No Choice	3.1400	1.1250	50

college, major and occupational choices. As predicted, there is a significant relationship between age, race, class level (freshman or other), sex, hours employed per week, full-time and part-time status, major and occupational choice. Therefore, these portions of Hypothesis I are accepted. No relationship could be found for purpose of attending college; therefore, this portion of the hypothesis is rejected.

Hypothesis III: Student Characteristics and Course Withdrawal

Hypothesis III predicts that a significant relationship exists between the number of courses a student drops in a selected semester (as measured by the percentage of W grades a student receives) and age, race, class level, sex, number of hours employed, full-time or part-time status, major choice, and occupational choice. Only the two student characteristic variables of age and class level result in F ratios that are significant beyond the .05 level (Table XXIII). The highest F ratio was obtained from the ANOVA of age and course withdrawal with an F ratio of 6.067, which is significant at the .0026 level. Table XXIV indicates that freshmen have a higher mean for course withdrawal than sophomores or others. Table XXIV also shows that course withdrawal is inversely related to age; the youngest group (21 or under) have the highest mean for withdrawal

In summary, as predicted by Hypothesis III, there is a significant relationship between course withdrawal and both

TABLE XXIII

SUMMARY OF SIGNIFICANT ANOVAS FOR RELATIONSHIP STUDENT CHARACTERISTICS AND COURSE WITHDRAWAL

Variables--Student Characteristics	Source of Variance	Sum of Squares	Mean Square	F Ratio	P
Class level	Between Groups	.498	.498	6.647	.0105
(sophomore and	Within Groups	24.485	.075	. .	. . .
freshmen)	Totals	24.983	. .	. .	. . .
Age	Between Groups	.896	.448	6.067	.0026
	Within Groups	24.087	.074	. .	. . .
	Totals	24.983	. .	. .	. . .

TABLE XXIV

MEANS OF SIGNIFICANT ANOVAS RELATIONSHIP OF STUDENT CHARACTERISTICS AND COURSE WITHDRAWAL

Student Characteristic	Mean	Standard Deviation	N
Class			
Sophomore or other	.1092	.2529	202
Freshman	.1891	.3039	127
Age			
Twenty-one or under	.2040	.3060	112
Twenty-two to twenty-nine	.1376	.2780	108
Thirty or over	.0767	.2241	109

age and class level; therefore, these portions of the hypothesis are accepted. Since no relationships were found between course withdrawal and sex, race, employment status, full-time or part-time status, purpose for attending college, or major and occupational choices, these portions of Hypothesis III are rejected.

Hypothesis IV: Course Withdrawal and Non-Return

Hypothesis IV predicts that a significant positive relationship exists between the percentage of courses a student drops in a selected semester (as measured by the percentage of W grades a student received) and non-return in a subsequent regular semester. The Pearson product moment correlation was used to test this hypothesis. As predicted, there is a significant positive relationship. With an N of 320, the correlation coefficient (.2007) is significant beyond the .001 level. Therefore, the higher the percentage of courses a student dropped in the Spring semester, 1981, the less likely he or she was to return in the Fall semester, 1981.

As noted in Chapter III, the number of surveyed students who did not re-enroll in the college is 155 (or 47 per cent). Of this total, 121 (or 78 per cent) responded to a follow-up telephone survey, the results of which indicate that 62 students (or 51 per cent) were attending other colleges or

universities in the Fall semester, 1981, and 59 students (or 49 per cent) were not attending any college or university. Of those who were not attending, 18 students (or 31 per cent) stated that they planned to return to college, and 41 students (or 69 per cent) of the non-attending students stated that they did not plan to return to college.

In summary, as predicted by Hypothesis IV, there is a significant relationship between the percentage of courses students dropped in the Spring semester, 1981, and the non-return of students for the Fall semester, 1981. Hypothesis IV, therefore, is accepted.

Hypotheses V and VI: Statistical Analysis Method

The testing of Hypotheses V and VI was accomplished by the application of multiple regression analysis using Stepwise Procedures. The Statistical Package for the Social Sciences, subprogram regression (1), was selected for these analyses. An advantage of this program is its capacity to create dummy interval data variables from nominal data. Sex, for example, was coded into the program as a degree of maleness. This dummy variable feature was necessary to combine the interval data satisfaction variables with the nominal elements of student characteristics.

The results listed in the following regression tables include (a) the label of the independent variable, (b) the

multiple correlation (R) for all preceding variables entered into the equation, (c) R Square (the percentage of variance explained by all preceding variables entered into the equation), (d) partial correlation coefficients (B) that may be used as measures of the influence of each independent variable, (e) Beta, which is the standardized correlation coefficient for each independent variable, (f) standard error for each independent variable, and (g) the F ratio for each independent variable.

The purpose of this phase of the study was to compare the percentage of variance explained by the regression of separate and combined sets of student characteristics and student satisfaction variables. Consequently the discussion involves only a comparison for each equation of R Square and the F ratios. The significance of the F ratios is included to determine if the independent variable does in fact account for a portion of the variance on the dependent variables.

Hypothesis V: Percentage-Variance for Course Withdrawal Explained by the Combined Regression of Satisfaction Variables and Student Characteristics

Hypothesis V predicts that the combination of student characteristics and student satisfaction variables explain a larger percentage of the variance for course withdrawal than either set of variables examined separately. Table XXV (section A) shows that the combination of student

characteristics and satisfaction variables accounts for 17.8 per cent of the variance for course withdrawal. Table XXV (section B) indicates that satisfaction variables alone account for 6.5 per cent of the variance for course withdrawal, and student characteristics (section C) account for 6.9 per cent of the variance for course withdrawal.

TABLE XXV

SUMMARY OF REGRESSION ANALYSIS FOR COURSE WITHDRAWAL

Section	Dependent Variable	Independent Variable	Multiple R	R Square	Standard Error
A	Course Withdrawal	Student Characteristic and Satisfaction Variable	.42193	.17803	.2586
B	Course Withdrawal	Satisfaction Variable	.25560	.06533	.27959
C	Course Withdrawal	Student Characteristics	.26300	.06917	.26679

Table XXVI indicates that six of the combined independent variables yielded an F ratio that is significant at or beyond the .05 level. The six variables are (a) age, (b) concern for you as an individual, (c) race, (d) number of hours a student was employed per week, (e) attitude of nonteaching staff toward students, and (f) class size relative to type

TABLE XXVI

SUMMARY OF REGRESSION ANALYSIS FOR COURSE WITHDRAWAL

Independent Variables Student Characteristics and Satisfaction Variables	Multiple R	R Square	B	Beta	Standard Error	Degrees of Freedom		F
						Regression	Residual	
Age	0.26006	0.06763	-0.29161120-01	-0.27089	0.00951	1	175	9.394**
Concern for you as an individual	0.31321	0.09810	0.67966010-01	0.20274	0.03290	2	174	4.269*
Race	0.34197	0.11694	-0.80395600-01	-0.14026	0.04299	3	173	3.497*
Number of hours employed per week	0.36947	0.13651	0.21733390-01	0.13497	0.01250	4	172	3.025*
Attitude of nonteaching staff toward students	0.38452	0.14786	-0.41703590-01	-0.14304	0.02728	5	171	2.338*
Class size relative to course type	0.39860	0.15888	0.45620660-01	0.12838	0.02952	6	170	2.389*
Choice or no choice of occupation	0.40810	0.16655	-0.65135960-01	-0.08597	0.06040	7	169	1.163

TABLE XXVI--Continued

Independent Variables Student Characteristics and Satisfaction Variables	Multiple R	R Square	B	Beta	Standard Error	Degrees of Freedom		F
						Regression	Residual	
Class (freshmen or other)	0.41722	0.17407	0.50219670-01	0.09075	0.04352	8	168	1.331
Financial aid status	0.41841	0.17507	0.23600930-01	0.03623	0.04900	9	167	0.232
Availability of your advisor	0.41983	0.17626	-0.15956850-01	-0.05012	0.02906	10	166	0.301
Purpose for which student activity fees are used	0.42115	0.17737	0.14177300-01	0.03916	0.03056	11	165	0.215
Choice or no choice of major	0.42147	0.17764	-0.17407400-01	-0.01832	0.07392	12	164	0.055
Sex--male status	0.42176	0.17788	0.90877850-02	0.01623	0.04324	13	163	0.044

TABLE XXVI--Continued

Independent Variables Student Characteristics and Satisfaction Variables	Multiple R	R Square	B	Beta	Standard Error	Degrees of Freedom		F
						Regression	Residual	
Preparation you are receiving for future occupation	0.42185	0.17795	-0.30542190-02	-0.01037	0.02436	14	162	0.016
What type of school did you attend before attending this college	0.42193	0.17803	-0.17816070-02	-0.00967	0.01484	15	161	0.014
Constant	5199		0.51993980-01					

*Significant at .05 level

**Significant at .01 level.

of course. The significant F ratios indicate that each of these six variables does in fact account for a portion of the variance for course withdrawal.

The regression equation that uses satisfaction variables yielded only one variable that has a significant F ratio--concern for you as an individual (Table XXVII). No other satisfaction variable accounts for a significant portion of the variance for course withdrawal.

The regression equation that uses student characteristics yielded two variables with significant F ratios (Table XXVIII). Age and the number of hours per week a student was employed are the only student characteristics that account for a significant portion of the variance for course withdrawal.

In summary, as predicted by Hypothesis V, the combination of satisfaction variables and student characteristics does explain a larger portion of the variance for course withdrawal than the regression analysis for each set of variables. Therefore Hypothesis V is accepted.

Hypothesis VI: Percentage of Variance for Non-Return Explained by the Combined Regression of Satisfaction Variables and Student Characteristics

Hypothesis VI predicts that the combination of student background characteristics and student satisfaction variables explain a larger percentage of the variance for students not

TABLE XXVII

SUMMARY OF REGRESSION ANALYSIS FOR COURSE WITHDRAWAL

Independent Variables Satisfaction Variables	Multiple R	R Square	B	Beta	Standard Error	Degrees of Freedom		F
						Regression	Residual	
Concern for you an an individual	0.30583	0.04237	0.82962150-01	0.23594	0.03393	1	180	4.978*
Class size relative to the type of course	0.22687	0.05147	0.47461950-01	0.12779	0.03111	2	179	2.327
Attitude of college nonteaching staff toward students	0.24867	0.06184	-0.41700390-01	-0.13739	0.03001	3	178	1.931
Availability of your advisor	0.25186	0.06344	-0.19550910-01	-0.05894	0.02930	4	177	0.445
Purposes for which student fees are used	0.25479	0.06492	0.14486190-01	0.03815	0.03309	5	176	0.192

TABLE XXVII--Continued

Independent Variables Satisfaction Variables	Multiple R	R Square	B	Beta	Standard Error	Degrees of Freedom		F
						Regression	Residual	
Racial harmony of this course	0.25560	0.06533	0.87828810-02	0.02678	0.03164	6	175	0.077
Constant			0.1203055					

*Significant.

TABLE XXVIII

SUMMARY OF REGRESSION ANALYSIS FOR COURSE WITHDRAWAL

Independent Variables Student Characteristics	Multiple R	R Square	B	Beta	Standard Error	Degrees of Freedom		F
						Regression	Residual	
Age	0.1843	0.03328	-0.24789960-01	-0.23201	0.00866	1	301	8.202**
Number hours per week employed	0.21231	0.04508	0.20335450-01	0.12737	0.00959	2	300	4.500*
Class--freshmen or others	0.23203	0.05384	0.45365790-01	0.08149	0.03449	3	299	1.730
Married status	0.24260	0.05886	0.56709690-01	0.10410	0.03868	4	298	2.149
Race	0.25262	0.06381	-0.37761960-01	-0.06435	0.03433	5	297	1.210
Financial aid status	0.25984	0.06752	0.43229630-01	0.06265	0.04034	6	296	1.148
Choice or no choice of occupation	0.26147	0.06837	-0.18356380-01	-0.02448	0.04547	7	295	0.163
Sex-male status	0.26233	0.06882	-0.12867160-01	-0.02359	0.03221	8	294	0.160

TABLE XXVIII--Continued

Independent Variables Student Characteristics	Multiple R	R Square	B	Beta	Standard Error	Degrees of Freedom		F
						Regression	Residual	
What type of school did you attend before attending this college	0.26275	0.06904	-0.29165400-02	-0.01696	0.01081	9	293	0.073
Choice or no choice of major	0.26300	0.06917	-0.95555280-02	-0.01216	0.04775	10	292	0.040
Constant			0.1844731					

*Significant at .05 level. **Significant at .01 level.

returning in a subsequent regular semester than either set of variables examined separately. Table XXIX (section A) shows that the combination of student characteristics and satisfaction variables accounts for 8.4 per cent of the variance for students not returning in the Fall semester, 1981. Table XXIX (section B) indicates that satisfaction variables alone accounted for 2.06 per cent of the variance for students not returning, and student characteristics (section C) account for 3.6 per cent of the variance for students not returning.

TABLE XXIX

SUMMARY OF REGRESSION ANALYSIS
FOR STUDENTS NOT RETURNING

Section	Dependent Variable	Independent Variables	Multiple R	R Square	Standard Error
A	Students Not Returning	Student Characteristic and Satisfaction Variables	.29057	.08443	.50384
B	Students Not Returning	Satisfaction Variables	.14378	.02067	.50659
C	Students Not Returning	Student Characteristics	.18964	.03596	.49976

Table XXX indicates that one of the combined variables has a significant F ratio; choice or no choice of major is

TABLE XXX

SUMMARY OF REGRESSION ANALYSIS FOR STUDENTS NOT RETURNING

Independent Variables (Student Characteristics and Satisfaction Variables)	Multiple R	R Square	B	Beta	Standard Error	F
Choice or no choice of major	0.16762	0.02810	-0.2845435	-0.16534	0.13402	4.508*
Age	0.18529	0.03433	0.37709760-01	0.19160	0.02317	2.649
Class--freshmen or other	0.21758	0.04734	0.1500154	0.14805	0.08692	2.978
Sex--male status	022969	0.05276	0.85157050-01	0.08284	0.08771	0.943
Number of hours employed per week	0.24274	0.05892	-0.23190060-01	-0.07876	0.02511	0.853
Race	0.25116	0.06308	0.63896200-01	0.06068	0.08471	0.569
Purposes for which student activity fees are used	0.25714	0.06612	-0.36792950-01	-0.05406	0.06141	0.359
Attitude of college non-teaching staff toward students	0.26825	0.07196	0.72756580-01	0.13398	0.05747	1.603
Concern for you as an individual	0.28012	0.07847	-0.65068250-01	-0.10276	0.06490	1.005
Married status	0.28254	0.07983	-0.57237170-01	-0.05612	0.10338	0.307

TABLE XXX--Continued

Independent Variables (Student Characteristics and Satisfaction Variables)	Multiple R	R Square	B	Beta	Standard Error	F
Financial aid status	0.28576	0.8166	-0.50704490-01	-0.04247	0.09925	0.261
Racial harmony at this college	0.28709	0.08242	-0.24675740-01	-0.04220	0.06197	0.159
Class size relative to the type of course	0.28840	0.08317	0.17952200-01	0.02782	0.05941	0.091
Type of school attended before this college	0.28983	0.08400	0.10766220-01	0.03187	0.029937	0.134
Availability of your advisor	0.29023	0.08423	0.12799040-01	0.02314	0.05754	0.049
Preparation you are receiving for your future occupation	0.29057	0.08443	-0.86954010-02	-0.1576	0.04778	0.033
Constant			0.3987148			

*Significant at the .05 level.

the only variable that significantly contributes to the explanation of variance for students not returning. There are no significant F ratios for the regression equation that use only satisfaction variables (Table XXXI). The equation that regresses the student characteristic variables yielded one significant F ratio--class level (Table XXXII). Class level (freshman or other) accounts for a significant portion of the variance for students not returning.

In summary, as predicted by Hypothesis VI, the percentage of variance explained by the regression of the combination of satisfaction variables and student characteristics does explain a larger percentage of the variance than the regression of each set of variables. However, the small percentage of explained variance may reduce the usefulness of these results.

Hypothesis VII: Factor Analysis of Satisfaction Variables

Hypothesis VII predicts that the satisfaction variables in Section III (College Environment) of the Student Opinion Survey form significant statistical factors. In this section the results of the principal axis factor analysis are presented.

The six orthogonally rotated factors (Table XXXIII) account respectively for 7.8, 8.2, 5.6, 4.8, 3.5, and 3.2 per cent of the total variance. Each of the factors is

TABLE XXXI

SUMMARY OF REGRESSION ANALYSIS FOR STUDENTS NOT RETURNING

Independent Variable (Satisfaction Variables)	Multiple R	R Square	B	Beta	Standard Error	F
Concern for you as an individual	0.06270	0.00393	-0.66831130-01	-0.10554	0.06367	1.102
Attitude of college nonteaching staff toward students	0.11424	0.01305	0.81724160-01	0.15050	0.05609	2.123
Racial harmony at this college	0.13184	0.01738	-0.398068351-01	-0.06681	0.05903	0.438
Purposes for which student activities fees are used	0.13800	0.01904	-0.33059380-01	-0.04858	0.06133	0.291
Avaibility of your advisor	0.14095	0.01987	0.20357810-01	0.03394	0.05549	0.135
Preparation you are receiving for future occupation	0.14351	0.03059	-0.17014690-01	-0.03084	0.04755	0.128
Class size relative to type of course	0.14378	0.02067	0.37002340-02	0.01038	0.05862	0.013
Constant			0.6614327			

TABLE XXXII

SUMMARY OF REGRESSION ANALYSIS FOR STUDENTS NOT RETURNING

Independent Variables (Student Characteristics)	Multiple R	R Square	B	Beta	Standard Error	F
Class (freshmen or other)	0.11999	0.01440	0.1719011	0.16776	0.06462	7.077**
Choice or no choice of major	0.14324	0.03052	0.1287327	-0.08902	0.08944	2.072
Age	0.16017	0.02566	0.22171820-01	0.11273	0.01621	1.870
Sex--male status	0.17720	0.03140	0.86777960-01	0.08644	0.06033	2.069
Financial aid status	0.18564	0.03446	-0.78036440-01	-0.06144	0.07556	1.067
Married status	0.18855	0.03555	-0.41192560-01	-0.04108	0.07246	0.323
Number of hours employed per week	0.18892	0.03569	-0.34791370-02	-0.01184	0.01796	0.038
Type of school attended before this college	0.18919	0.03579	0.37670200-02	0.01190	0.03025	0.035
Choice or no choice of occupation	0.18940	0.03587	0.14748970-01	-0.01069	0.8518	0.030
Race	0.18964	0.03596	-0.10639800-01	-0.00985	0.06430	0.027
Constant			0.3463055			

*Significant at .05 level. **Significant at .01 level.

TABLE XXXIII

ROTATED FACTOR MATRIX--SECTION III COLLEGE ENVIRONMENT

Variable	Factor*					
	I	II	III	IV	V	VI
1. Testing-grading system	57	63	53	18	25	04
2. Course content in your major field	22	19	17	73	10	04
3. Instruction in your major field	44	26	30	55	16	09
4. Out-of-class availability of your instructors	49	42	23	42	12	23
5. Attitude of faculty towars students	44	55	12	41	12	39
6. Variety of courses offered by this college	33	42	13	69	16	18
7. Class size relative to the type of course	17	23	22	39	12	64
8. Flexibility to design your own program of study	21	22	00	66	43	21
9. Availability of your advisor	57	29	24	42	14	13
10. Value of the information provided by your advisor	56	34	10	43	23	-22
11. Preparation you are receiving for your future occupation	41	29	26	67	11	16
12. General admissions procedures	73	20	28	24	17	29
13. Availability of financial aid information prior to enrolling	44	42	26	14	18	52

TABLE XXXIII--Continued

Variable	Factor*					
	I	II	III	IV	V	VI
14. Accuracy of college information you received before enrolling	66	21	27	32	18	17
15. College catalog-admissions publications	66	15	00	29	-04	39
16. Student voice in college policies	73	27	26	17	31	24
17. Rules governing student conduct at this college	66	37	26	19	33	12
18. Residence hall rules and regulations	40	31	27	18	64	04
19. Academic probation and suspension policies	57	31	50	26	23	09
20 Purposes for which activity fees are used	56	33	44	28	16	19
21. Personal security-safety at this campus	22	32	19	-02	25	73
22. Classroom facilities	16	17	13	26	76	36
23. Laboratory facilities	17	10	44	13	59	28
24. Athletic facilities	-05	22	52	16	71	01
25. Study areas	13	11	57	09	27	58
26. Student union	06	10	78	26	33	28
27. Campus bookstore	38	49	30	25	14	30

TABLE XXXIII--Continued

Variable	Factor*					
	I	II	III	IV	V	VI
28. Availability of student housing	45	45	68	07	00	09
29. General condition of buildings and grounds	39	65	32	35	16	07
30. General registration procedures	28	61	16	20	13	24
31. Availability of the courses you want at the times you can take them	04	63	28	26	23	19
32. Academic calendar for this college	26	70	34	29	32	09
33. Billing and fee payment procedures	35	47	52	30	-26	29
34. Concern for you as an individual	32	55	40	33	20	37
35. Attitude of college nonteaching staff toward	35	58	34	32	22	30
36. Racial harmony at this college	31	60	34	17	08	46
37. Opportunities for student employment	40	32	67	31	18	18
38. Opportunities for personal involvement in campus activities	40	38	65	18	34	09
39. Student government	40	40	72	19	27	08
40. Religious activities and programs	10	14	84	00	23	16
41. Campus media (student newspaper, campus radio, etc.)	35	51	62	23	03	13
42. This college in general	36	66	30	34	12	37

*Decimals have been omitted from factor loadings.

presented separately in Tables XXXIV through XXXIX, and only variable loadings of ± .40 (2, p. 662) are discussed.

Factor I (Table XXXIV) could best be characterized as Information and Policies. Students who score high on this factor would be dissatisfied with college policies and the quality of information they receive about the college.

TABLE XXXIV

FACTOR I: INFORMATION AND POLICIES IN THE COLLEGE ENVIRONMENT

Factor	Variable Loading
Student voice in college policies	.73
General admissions procedures	.73
Rules governing student conduct at this college	.66
College catalog-admissions publications	.66
Accuracy of college information you received before enrolling	.66
Academic probation and suspension policies	.57
Availability of your advisor	.57
Testing-grading system	.57
Purposes for which student activity fees are used	.56
Value of the information provided by your advisor	.56
Out-of-class availability of your instructors	.49
Availability of student housing	.44
Availability of financial aid information prior to enrolling	.44
Attitude of the faculty toward students	.44
Instruction in your major field	.44
Preparation you are receiving for your future occupation	.41
Opportunities for student employment	.40
Student government	.40

The out-of-class availability of instructors and attitude of the faculty toward students also may be related to the desire to obtain information from the college staff. Even the items of instruction in your major field and preparation

you are receiving for your future occupation may relate to the quality of information students receive before enrolling in a particular program of study.

Factor II (Table XXXV) could best be characterized as Quality of Human Environment. Students who score high on this factor would be dissatisfied with the general quality of the human environment created by the convenience of calendar, availability of courses, and the human impact of the physical environment.

TABLE XXXV

FACTOR II: QUALITY OF HUMAN ENVIRONMENT IN THE COLLEGE ENVIRONMENT

Factor	Variable Leading
Academic calendar for this college	.70
This college in general	.66
General condition of buildings and grounds	.65
Testing-grading system	.63
Availability of the courses you want at the time you can take them	.63
Racial harmony at this college	.60
Attitude of college nonteaching staff toward students	.58
Concern for you as an individual	.55
Attitude of the faculty toward students	.55
Religious activities and programs	.51
Campus bookstore	.49
Billing and fee payment procedures	.47
Availability of student housing	.45
Variety of courses offered by this college	.42
Out-of-class availability of your instructors	.42
Student government	.40

Racial harmony, attitude of college nonteaching staff toward students, concern for the student as an individual, and

attitude of the faculty toward students all relate to the atmosphere created by the college staff.

Factor III (Table XXXVI) could best be characterized as Opportunities for Involvement. Students who score high on this factor would be dissatisfied with the opportunities to become involved in college activities and extracurricular programs. This feeling may even relate to the comfort students feel in freely using study areas, laboratory facilities, and athletic facilities.

TABLE XXXVI

FACTOR III: OPPORTUNITIES FOR INVOLVEMENT IN THE COLLEGE ENVIRONMENT

Factors	Variable Loading
Religious activities and programs	.84
Student union	.78
Student government	.72
Availability of student housing	.68
Opportunities for student employment	.67
Campus media (student newspaper, campus radio etc.)	.62
Study areas	.57
Laboratory facilities	.52
Billing and fee payment procedures	.52
Academic probation and suspension policies	.50
Purposes for which student activity fees are used	.44
Laboratory facilities	.44

Factor IV (Table XXXVII) could best be characterized as Academic Satisfaction. Students who score high on this factor would be dissatisfied with the content, variety, flexibility, and quality of their courses. The out-of-class availability of instructors and value of the information

provided by their advisors may relate directly to students' desire to interact more often and meaningfully with faculty.

TABLE XXXVII

FACTOR IV: ACADEMIC SATISFACTION IN THE COLLEGE ENVIRONMENT

Factor	Variable Loading
Course content in your major field	.73
Variety of courses offered by this college	.69
Preparation you are receiving for your future occupation	.67
Flexibility to design your own program of study	.66
Instruction in your major field	.55
Out-of-class availability of your instructors	.42
Value of the information provided by your advisor	.42

Factor V (Table XXXVIII) could best be characterized as Facilities. Students who score high on this factor would be generally dissatisfied with college facilities and the flexibility to design their own program of study. This last variable also may be related to the allowed flexibility for use of college facilities.

TABLE XXXVIII

FACTOR V: FACILITIES IN THE COLLEGE ENVIRONMENT

Factor	Variable Loading
Classroom facilities	.76
Athletic facilities	.71
Residence hall rules and regulations	.64
Laboratory facilities	.59
Flexibility to design your own program of study	.43

Factor VI (Table XXIX) could best be characterized as Personal Comfort. Students who score high on this factor would be dissatisfied with the level of comfort they feel on the campus. The availability of financial aid information may relate to a general level of discomfort that students feel if they are under financial stress.

TABLE XXIX

FACTOR VI: PERSONAL COMFORT IN THE COLLEGE ENVIRONMENT

Factors	Variable Loading
Personal security-safety at this campus	.73
Class size relative to the type of course	.64
Study areas	.58
Availability of financial aid information prior to enrolling	.52
Racial harmony at this college	.46

In summary, as predicted by Hypothesis VII, the satisfaction variables in Section III (College Environment) of the Student Opinion Survey did form statistically significant factors. Hypothesis VII is, therefore, accepted.

Summary

The purpose of this chapter was to present, analyze, and discuss the data obtained for this study. The hypotheses were presented and the data analyzed to determine the acceptance or rejection of the hypotheses. Tests of significance for the data yielded statistical values that are significant at the .05 level for Hypotheses I in student satisfaction and course withdrawal, and for Hypothesis II in age and

satisfaction, race and satisfaction, class level and satisfaction, sex and satisfaction, hours employed per week and satisfaction, full-time or part-time status and satisfaction, major choice and satisfaction, and occupational choice and satisfaction. The variable that was not supported in Hypothesis II is purpose for attending college and satisfaction.

Tests of significance for the data yielded statistical values that are significant at the .05 level for Hypothesis III in age and course withdrawal and class level and course withdrawal. The variables that were not accepted for Hypothesis III are sex and course withdrawal, race and course withdrawal, employment status and course withdrawal, full-time or part-time status and course withdrawal, purpose for attending college and course withdrawal, major choice and course withdrawal, and occupational choice and course withdrawal. Tests of significance for the data involved yielded statistical values that are significant at the .05 level for Hypothesis IV in course withdrawal and non-return of students.

The data found in relation to Hypotheses V and VI reveal that the variance explained by the combination of satisfaction and student characteristic variables supports Hypotheses V and VI. The data found in relation to Hypothesis VII reveal that the student satisfaction variables formed statistically significant factors with factor loadings greater than $\pm$ .40, which provides support for Hypothesis VII.

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CHAPTER V

SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS FOR FUTURE RESEARCH

To accompany the data analysis in Chapter IV, this final chapter includes the conclusions from the research preceeded by a summary of the problem, purposes, and procedures that were reported in detail in previous chapters. The chapter also presents the implications that may be drawn from this study and recommendations for future research.

Summary

A survey of the literature indicates that a standardized, commercially available instrument has not been used to assess the relationship of student attrition to student satisfaction with various elements of the college environment. The review of the literature also indicates that most attrition studies in community colleges involve follow-up surveys of non-persisting students. No community college multivariate studies could be found that attempted to identify the dynamics of student-college interactions which result in lowered student satisfaction and dropout. To meet these gaps in research, the purpose of this study was to investigate a practical methodology for analyzing the complex relationship

between student perceptions about the college environment and student attrition in a selected community college. If such a methodology proved useful, other community college educators could apply this process for their own use and thereby also provide needed comparative data.

The population of this study was randomly selected from the student master records of students enrolled on-campus in the Spring semester, 1981, at Mountain View College in Dallas, Texas. Mountain View College, one of the seven Dallas County Community College District campuses, is an open admissions institution with a service area that covers a large portion of southwest Dallas County, which has a population of approximately 225,000. The service area is diverse and extreme; it ranges from impoverished inner city to upper-middle class city and suburban neighborhoods.

The racial composition of the college's student population is very similar to that of the area's population. Approximately 50 per cent of the student population were enrolled in academic programs and the remainder were enrolled in one- and two-year technical and occupational programs. The division of day and evening enrollment was also approximately 50 per cent. During the Spring semester, 1981, there were 5,009 students enrolled in on-campus programs.

The instrument utilized in this study is the Student Opinion Survey, which is published by the American College Testing Service (see Appendix). The SOS consists of five

sections. Section I, Background Information, contains sixteen items; section II, College Services, contains twenty-three items; section III, College Environment, contains forty-two items; and section V, Comments and Suggestions, provides space for respondents to comment about the college.

This study utilizes only sections I and III. Section I contains a variety of demographic and background variables that include social security number, age, racial-ethnic group, class, sex, marital status, major, and occupational choice. Section III contains Likert-type items that allow students to assess their level of satisfaction with a variety of characteristics of the college environment.

The responses to the Student Opinion Survey were obtained from three separate mailings during the early part of the Spring semester, 1981. From the total sample of 500, 329 survey instruments were returned, which represents a 65.8 per cent return. After the data were gathered and tabulated, the results were analyzed statistically utilizing four techniques--analysis of variance, Pearson product moment correlation, multiple regression analysis using step-wise procedures, and factor analysis. Data were considered statistically significant at the .05 or greater level for variables in seven hypotheses.

Summary of Data Findings

A summary of the significant data findings is presented in relation to the hypotheses for the study. The relationship

of the data findings to previous research findings is also discussed.

Hypothesis I

Hypothesis I proposes that there will be a statistically significant relationship at the .05 level between the number of courses a student drops in a selected semester and student satisfaction with the college environment. Hypothesis I is accepted.

Section III of the Student Opinion Survey does appear to measure three satisfaction variables that significantly ($p = > .05$) relate to course withdrawal. Students who were neutral, dissatisfied, or very dissatisfied with (a) class size relative to the type of course, (b) the availability of advisor, and (c) concern for them as individuals withdrew from a higher percentage of courses than students who were satisfied or very satisfied. When the satisfaction variables were dichotomized (very satisfied-satisfied vs. neutral, dissatisfied, or very dissatisfied), the relationship was not significant for (a) class size relative to the type of course or (b) the availability of advisor. The variable on attitude of the college's non-teaching staff, however, did become significant. The variable on concern for the student as an individual was greatly strengthened ($p = .0009$) on the dichotomized analysis of variance. This latter finding is consistent with Kowalski's (9) finding that a far greater

percentage of nonpersisting students perceive the attitude of advisors and faculty to be one of unconcern. Wilson and others (25) and Terenzini and Pascarella (21) also found a significant relationship between the availability and attitude of faculty and staff and student academic performance and intellectual growth.

One of the most consistently found parallels with this study is the importance of the student-faculty relationships. Starr, Betz and Menne (19) state that students who left the university but who had maintained adequate grades are significantly less satisfied with (a) the academic offerings of the college, (b) faculty and staff competence and helpfulness, and (c) the amount of time required to meet the demands of the university. Thistlewaite (22) found that the informality and warmth of student-faculty contact is an important determinant of achievement in all areas. Spady (18) found that a student's intellectual development rests primarily on the student's ability to establish relationships with faculty and to involve himself in activities that provide exposure to stimulating ideas and experiences. Pascarella and Terenzini (14) found that a student's commitment to dropping out is altered by the student's experiences. For men, informal relations with faculty compensate for low levels of institutional goal commitment and academic development; for women, these relationships compensate for low satisfaction with peer relations. Wilson, Wood, and Gaff (24) found that faculty

who have little contact with students do little to invite such contact and may even do much to discourage it. In a later study, Wilson and others (25) found that faculty who encourage out-of-class contact are characterized by students as (a) available and open to my discussion (b) able to stimulate me intellectually, (c) help me feel confident in my abilities, (d) demand high quality work, and (e) are able to interest me in their field.

Terenzini and Pascarella (21) found that even with pre-enrollment characteristics held constant, measures of the frequency of student-faculty contact are significantly and positively associated with freshman year performance, intellectual development, and personal development. Kowalski (9) found that a far greater percentage of non-persisting students perceive the attitudes of their advisors and faculty to be one of unconcern.

The relationship between course withdrawal and satisfaction with the college environment which was found in this study is consistent with the models reviewed in Chapter II. Tinto (23) hypothesized that dropout is a longitudinal process of interactions between the individual and the academic and social systems of the college during which a student's experience in those systems continually modifies his goal and institutional commitments in ways that lead to persistence or varying forms of dropout. Spady (18) found that a student's integration into the social system of the college is based on

the collective congruence with the value press of the institution and friendship support. Successful integration will result in higher social integration, higher satisfaction, and greater institutional commitment--hence reduced probability of dropping out. Pervin and Rubin (15) found that students often choose a college that is not their first choice which results in a lack of fit between the individual and the press (or source of reward) and frustration in the college environment. If there were a discrepancy, students rated their college as dull, boring, etc. This finding is consistent with Astin's (1), who found that the primary reason given by students for dropping out is boredom with their courses.

Feldman and Newcomb (3) believe that students need a moderate incompatibility with the college environment in order to learn, but too great an incompatibility inhibits the student's integration and increases the probability of dropping out. Rootman (16) found that a student's inability to fit into the environment causes stress which students often resolve by withdrawing. Starr, Betz, and Menne (19) found that the difference between voluntary and nonvoluntary withdrawals is merely the degree of satisfaction with the rewards students receive in the course of meeting the various requirements of the college.

Hypothesis II

Hypothesis III proposes that there will be a statistically significant relationship at the .05 level between student

satisfaction with the college environment and age, sex, race, freshman or sophomore status, employment status, full-time or part-time status, purpose for attending college, major, and occupational choice. Hypothesis II is accepted for the relationships between satisfaction with the college environment and age, race, class level, sex, hours employed per week, full- or part-time status, major choice, and occupational choice; this hypothesis is rejected for satisfaction with the college environment and purpose for attending college.

Section III of the Student Opinion Survey does appear to measure significant differences in satisfaction with certain elements of the college environment and age. Older students (30 and over) were found to be consistently more satisfied than younger students with (a) the testing-grading system, (b) instruction in your major field, (c) variety of courses offered by this college, (d) class size relative to the type of course, (e) value of information provided by your advisor, (f) preparation you are receiving for your future occupation, (g) college catalog-admission publications, (h) campus bookstore, (i) general registration procedures, (j) attitude of college non-teaching staff toward students, (k) racial harmony at this college, and (l) this college in general. The greater satisfaction of older students was found to be highly significant for the college's testing and grading system (.0001). On several items--variety of courses offered

at this college, the class size relative to the type of course, the value of information provided by your advisor, the campus bookstore, and the college in general--the least satisfied group was the twenty-two to twenty-nine year old students.

Section III of the Student Opinion Survey does appear to measure significant sex related differences in satisfaction with the college environment. Females were consistently more satisfied with (a) student voice in college policies, (b) campus bookstore, (c) racial harmony at this college, and (d) college in general. The differences in satisfaction with the racial harmony at this college were highly significant ($p = .0007$).

Section III of the Student Opinion Survey does appear to measure significant race-related differences in the level of satisfaction with certain elements of the college environment. These elements include (a) student voice in college policies, (b) study areas, (c) student union, and (d) availability of the courses you want at the times you can take them. When white and nonwhite students were compared, white students were consistently less satisfied with these elements of the college environment. The differences in satisfaction with study areas is highly significant ($p = .0006$).

Section III of the Student Opinion Survey does appear to measure significant class-related (freshman or other) differences in satisfaction with (a) student voice in college

policies and (b) athletic facilities. Freshmen were more satisfied with both of these items.

Section III of the Student Opinion Survey does appear to measure significant differences in satisfaction in relation to the number of hours a student is employed per week. These differences in satisfaction are with (a) testing and grading system, (b) class size relative to the type of course, (c) college catalog-admission procedures, and (d) rules governing student conduct at this college. The least satisfied students were generally those who work one to ten and over forty hours per week.

Section III of the Student Opinion Survey does appear to measure a significant difference in the level of satisfaction with the testing and grading system for full-time and part-time students. Part-time students were more satisfied with this element of the college environment than were full-time students.

Section III of the Student Opinion Survey does appear to measure significant differences in satisfaction between students who have and those who do not have a major choice. Students who had not chosen a major were consistently more satisfied with (a) attitude of faculty toward students, (b) college catalog-admissions publications, (c) athletic facilities, and (d) concern for you as an individual.

Section III of the Student Opinion Survey does appear to measure differences in level of satisfaction between students

who have and have not made an occupational choice. Students who have chosen an occupation were less satisfied with (a) preparation you are receiving for your future occupation and (b) availability of the courses you want at the times you can take them.

Hypothesis III

Hypothesis III proposes that there will be a statistically significant relationship at the .05 level between the number of courses a student drops in a selected semester and age, sex, race, freshman or sophomore status, employment status, full-time or part-time status, major choice, and purpose for attending college. Hypothesis III is accepted for the relationships between age and course withdrawal and class level and course withdrawal; this hypothesis is rejected for the relationships between course withdrawal and sex, race, employment status, full- or part-time status, purpose for attending college, major choice, and occupational choice.

Based on an analysis of variance of the differences in age and course withdrawal, the highest rate of withdrawal was found within the group of students who were twenty-one or under. Students who were twenty-two to twenty-nine years old had the next highest withdrawal rate, and students in the thirty and over age group had the lowest rate of course withdrawal. This finding is in conflict with Packwood and Bruner (12) and Newman (11) who found a negative correlation

between age and retention. In this study, however, older students were more satisfied and consequently had a lower rate of course withdrawal.

Based on an analysis of variance for course withdrawal and sex, there was no significant difference in course withdrawal for males and females. This finding is supported by several studies (2, 8, 17, 20). Nelson (10), however, found that men drop out at significantly higher rates, while Panos and Astin (13) found that women are more likely to drop out.

Based on the analysis of variance for race and course withdrawal, there were no significant differences in the withdrawal rates for race. This finding is supported by Packwood and Bruner (12). Hall (6), however, found that minorities have a higher dropout rate than non-minorities

Based on an analysis of variance for course withdrawal and class, freshmen had a significantly higher rate of course withdrawal than sophomore or other. This finding does not support the premise that the higher level of satisfaction for freshmen students would lead to a lower rate of course withdrawal.

Based on the analysis of variance, no significant differences exist between the number of hours a student is employed per week and course withdrawal. This finding is in conflict with Astin's (1), who found that working full-time (rather than, say, fifteen to nineteen hours per week)

is associated with a 15 per cent increase in dropout rates among women and a 13 per cent increase among men.

Based on the analysis of variance, there was no significant difference in the course withdrawal rate for full-time and part-time students. This finding is in conflict with Packwood and Bruner's (12), who found that there is a higher dropout rate for part-time students.

Based on the analysis of variance, there were no significant differences in course withdrawal between students who had or had not made a major choice or between students who had made or had not made an occupational choice. This latter finding is in conflict with the findings of several investigators (4, 5, 7) who emphasize that having a vocational goal is conducive to persistence because it provides a motivation for undertaking a particular academic program.

Hypothesis IV

Hypothesis IV proposes that there will be a statistically significant positive relationship between the number of courses a student drops in a selected semester and non-return in a subsequent regular semester. Hypothesis IV is accepted.

A significant relationship exists between course withdrawal and non-return. It was found that the more courses a student dropped in the Spring semester, 1981, the less likely he was to re-enroll in the Fall semester, 1981. The Pearson product moment correlation for this relationship (.20 and with an N of 320) was significant beyond the .001 level.

Hypothesis V

Hypothesis V proposes that the combination of student background variables and student satisfaction variables will explain a larger percentage of the variance for course withdrawal than either set of variables examined separately. Hypothesis V is accepted.

The regression analysis for student characteristics and student satisfaction with certain elements of the college environment explains a larger percentage of the variance for course withdrawal than the regression analysis for each set of variables examined separately. Student characteristics explained only 6.9 per cent of the variance for course withdrawal. Students' perceived satisfaction with certain elements of the college environment explained only 6.5 per cent of the variance for course withdrawal. The combined effects of both sets of variables explained 17.8 per cent of the variance for course withdrawal indicating that there was an interaction between the two sets of variables. The interacting variables that contributed a significant portion of the variance are (a) age, (b) concern for the student as an individual, (c) race, (d) number of hours employed per week, (e) attitude of nonteaching staff toward students, and (f) class size relative to course type.

Hypothesis VI

Hypothesis VI proposes that the combination of student background variables and student satisfaction variables will

explain a larger percentage of the variance for students not returning in a subsequent regular semester than either set of variables examined separately. The regression analysis using the combined independent variables of student satisfaction and student characteristics explains a larger portion of the variance for non-return than either set of variables examined separately. Therefore, Hypothesis VI is accepted.

Hypothesis VII

Hypothesis VII proposes that the satisfaction variables on the Student Opinion Survey will form statistically significant (loading of $\pm$ .40) factors. Hypothesis VII is accepted.

The data found in relation to Hypothesis VII reveal that the student satisfaction variables form statistically significant factors with factor loadings greater than $\pm$ .40. The titles assigned to the factors are (1) Information and Policies, (2) Quality of Human Environment, (3) Opportunity for Involvement, (4) Academic Satisfaction, (5) Satisfaction with Facilities, and (6) Personal Comfort.

Conclusions

Based on the data findings of this study, the following conclusions appear to be warranted.

1. The Student Opinion Survey provides information that is useful in attrition research. Specifically, this instrument provides a convenient means for gathering data needed to examine the interaction effects of student characteristics,

students' perceived satisfaction with the college environment and student attrition. The low cost and ease of administration and scoring make it particularly useful for large scale research.

2. The Student Opinion Survey in conjunction with the statistical procedures used in this study appear to provide a useful methodology for focusing discussion and further study on specific areas of student and college interaction that relate to attrition in a given college.

3. Multivariate correlations appear to aid in the prediction of student attrition, and it appears that the most productive statistical procedure used in this study is analysis of variance.

4. Multiple regression analysis using step-wise procedures appears to be useful for explaining an acceptable level of variance for course withdrawal.

5. Multiple regression analysis using step-wise procedures does not appear to be useful for explaining an acceptable level of variance for non-return in a subsequent regular semester.

6. A factor analysis of Section III of the Student Opinion Survey does not appear to provide a substantial reduction in the number of items needed to assess the relationship of student satisfaction with the college environment and student attrition.

7. Older students appear to be more satisfied with the college environment and have a lower attrition rate than younger students.

8. The quality of the relationship between student and faculty appear to be directly related to student satisfaction and attrition.

9. The student's age, race, and number of hours employed per week appear to impact the amount and quality of the student's interaction with various elements of the college environment and particularly the quality of relationships with faculty and staff.

10. The quality of the relationship between student and college nonteaching staff appears to be related to student satisfaction and attrition.

11. It appears that the probability of students returning in a subsequent regular semester decreases as the number of within-semester course withdrawals increases.

Implications

The chief implication of the research described in previous chapters centers upon the practical application of the Student Opinion Survey for the identification of areas of student-college and student-staff interactions that impact student retention. The following represent specific delineations of this primary implication.

1. The results of this study imply that the application of multivariate statistical procedures currently available in

flexible software packages provide a practical tool for analyzing the complex phenomenon of student attrition.

2. Unlike other follow-up procedures of non-persisting students, the methods used in this study identify specific problem areas of student-college interaction. Once identified, these problem areas can provide a focus for staff development and other intervention strategies.

3. A comparison of the results of this study with other attrition research implies that some of the results may be universal. For example, the need to feel that the staff of the institution is concerned with the individual student may be universal, while the dissatisfaction of the white students in this study may be unique to the college examined.

4. The results of this study imply that the current concern for meeting the needs of the older student has either been very successful or misdirected since the younger students were less satisfied and more likely to withdraw from their courses. The college examined in this study has placed a high priority on staff development activities and marketing strategies that were aimed at the older student.

5. The results of this study imply that there is a stronger relationship between course withdrawal and non-return than has generally been believed. From a practical standpoint, this implication supports placing a high priority on a class placement process that diminishes the possibility of placing students in classes that are likely to be highly

incongruent with the student's ability, background, learning style, and interest. It also supports a college-wide effort to raise the staff's awareness about the strength of the relationship between a student's satisfaction with his experience in each class and the probability of not returning.

6. The factors that resulted from the factor analysis of section III of the Student Opinion Survey may have practical application for the creation of scale scores and prediction models. This implication, however, needs to be tested at other community colleges.

Recommendations for Future Research

In addition to the implications prompted by the experience of this research study, the results also provided data for the following suggestions about future research.

1. The Student Opinion Survey should be administered at other community colleges to determine which satisfaction-attrition relationships can be generalized and which satisfaction-attrition relationships are unique to a particular institution.

2. The Student Opinion Survey should be administered at other community colleges to determine which satisfaction-student characteristics relationships can be generalized and which are unique to a particular institution. Of particular interest is the need to determine if the age-related findings of this study can be replicated at other community colleges.

3. Further research is required to test the replicability of the factor analysis of section III of the Student Opinion Survey. Of particular interest would be the development of scale scores that could be used in prediction models.

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APPENDIX

TABLE XL

BACKGROUND CHARACTERISTICS OF THE POPULATION
(SEX AND EMPLOYMENT)

Variable	Sex				Employment			
	Male		Female		Part-Time		Full-Time	
	N	%	N	%	N	%	N	%
I. Age	.	.	.	.	.	.	.	.
II. Race	.	.	.	.	.	.	.	.
III. Class level	.	.	.	.	.	.	.	.
IV. College goal:								
None	3	1.7	6	4.0	7	3.1	2	2.0
Job courses	10	5.6	15	10.0	24	10.6	1	1.0
Self-improvement	21	11.7	21	14.0	38	16.8	2	2.0
Plan to transfer	57	31.8	35	23.3	53	23.5	39	39.4
Certification	11	6.1	4	2.7	8	3.5	6	6.1
Voc-Tech	10	5.6	0	0.0	6	2.7	4	4.0
Assoc. degree	52	29.1	43	28.7	63	27.9	31	31.3
B. S. degree	11	6.1	21	14.0	21	9.3	11	11.1
Advanced degree	2	1.2	4	2.6	4	1.7	2	2.0
No response	2	1.1	1	0.7	2	0.9	1	1.0
V. Sex								
Male	179	100.0	.	.	111	49.1	66	66.7
Female	.	.	150	100.0	115	50.9	33	33.3
VI. Marital status								
Single	97	54.2	74	49.3	98	43.4	72	72.7
Married	79	44.1	72	48.0	121	53.5	27	27.3
No response	3	1.8	4	2.7	7	3.1	0	0.0
VII. Hours employed per week								
0--odd jobs	11	6.1	31	20.7	21	9.3	25	11.2
01-20	28	15.6	23	15.3	23	10.1	28	28.3
21-30	17	9.5	6	4.0	12	5.3	11	11.1
31-40	121	188.6	86	57.4	166	73.4	38	38.4
No response	2	1.1	4	2.7	4	1.8	1	1.0
VIII. Enrollment status								
Full-time	66	36.9	33	22.0	0	0.0	99	100.0
Part-time	111	62.0	115	76.7	226	100.0	0	0.0
No response	2	1.1	2	1.3	0	0.0	0	0.0

TABLE XL--Continued

Variable	Sex				Employment			
	Male		Female		Part-Time		Full-Time	
	N	%	N	%	N	%	N	%
IX. Type of tuition paid								
In-state	.	.	.	.	.	.	.	.
Out-of-state	.	.	.	.	.	.	.	.
Other	.	.	.	.	.	.	.	.
X. Residence classification								
In-state	.	.	.	.	.	.	.	.
Out-of-state	.	.	.	.	.	.	.	.
International	.	.	.	.	.	.	.	.
No response	.	.	.	.	.	.	.	.
XI. Prior school attendance								
High school	95	53.1	69	41.2	93	41.2	69	69.7
2-year college	45	13.7	21	14.0	35	15.5	10	10.1
4-year or grad.-prof. college	32	17.8	36	24.0	57	25.2	10	10.1
Voc-tech or other	41	12.5	18	12.0	32	14.2	9	9.1
No response	11	3.3	6	4.0	9	4.0	1	1.0
XII. Residence								
Room-apt.	29	16.2	17	11.3	32	14.2	14	14.1
Parents' home	73	40.8	47	31.3	59	26.1	60	60.6
Own home	70	39.1	80	53.3	127	56.2	21	21.2
Other	7	4.0	6	4.0	8	3.6	4	4.0
XIII. Have financial aid								
Yes	40	22.3	24	16.0	35	15.5	28	28.3
No	137	76.5	125	83.3	189	83.6	70	70.7
No response	2	1.1	1	0.7	2	0.9	1	1.0
XIV. College major								
Business	43	24.0	49	32.7	65	28.8	27	27.3
Computer science	6	3.4	6	4.0	10	4.4	2	2.0
Education	5	2.8	9	6.0	8	3.5	6	6.1
Engineering	26	14.5	5	3.3	23	10.2	8	8.1
Fine arts	4	2.2	9	6.0	8	3.5	5	5.1
Health profes.	8	4.5	19	12.7	22	9.7	5	5.1
Social sciences	6	3.4	6	4.0	7	3.1	5	5.1
Trade-tech.	38	21.2	3	2.0	24	10.6	16	16.2
11 other mjrs.**	19	14.0	18	12.0	21	9.2	15	15.0
Undecided	20	11.2	18	12.0	30	13.3	7	7.1
No response	4	2.2	8	5.3	8	3.5	3	3.0

TABLE XL--Continued

Variable	Sex				Employment			
	Male		Female		Part-Time		Full-Time	
	N	%	N	%	N	%	N	%
XV. Occupational choice								
Business	30	16.8	54	36.0	64	28.3	19	19.2
Computer science	9	5.0	4	2.7	9	4.0	4	4.0
Education	4	2.2	9	6.0	7	3.1	8	3.6
Engineering	28	15.6	5	3.3	23	10.2	10	10.1
Fine arts	4	2.2	7	4.7	8	3.5	3	3.0
Health profes.	9	5.0	20	13.3	23	10.2	6	6.1
Comm. serv.	4	2.2	7	4.7	6	2.7	5	5.1
Trade-tech.	43	24.0	3	2.0	27	11.9	18	18.2
11 other occupations ***	19	10.8	13	8.7	19	8.3	12	12.0
Undecided	20	11.2	16	10.7	26	11.5	9	9.1
No response	9	5.0	12	8.0	14	6.2	7	7.1

*Other class levels: N = 111, % = 33.7.

**Other majors includes 2 in agriculture, 1 in architecture, 5 in biological sciences, 6 in communications, 1 in foreign languages, 3 in home economics, 3 in letters, 1 in mathematics, 6 in physical sciences, 5 in community service, and 4 in general studies.

***Other occupational choices include 1 in agriculture, 1 in architecture, 1 in biological sciences, 6 in communications, 0 in foreign languages, 3 in home economics, 6 in letters, 1 in mathematics, 5 in physical science, 7 in social sciences, and 1 in general studies.

TABLE XLI

BACKGROUND CHARACTERISTICS OF THE POPULATION
(AGE)

Variable	Age							
	19 & Under		20-22		23-29		40 & Over	
	N	%	N	%	N	%	N	%
I. Age	57	17.3	69	21.0	161	49.0	42	12.7
II. Race	.	.	.	.	.	.	.	.
III. Class level	.	.	.	.	.	.	.	.
IV. College goal:								
None	3	5.3	2	2.9	2	1.2	2	4.8
Job courses	1	1.8	4	5.8	12	7.5	8	19.0
Self-improvement	9	15.8	5	7.2	17	10.6	11	26.2
Plan to transfer	24	42.1	26	37.7	36	22.4	6	14.3
Certification	2	3.5	5	7.2	8	5.0	0	0.0
Voc-Tech	3	5.3	3	4.3	4	2.5	0	0.0
Assoc. degree	11	19.3	15	21.7	58	36.0	11	26.2
B. S. degree	2	3.5	6	8.7	20	12.4	4	9.5
Advanced degree	2	3.6	1	1.4	3	1.8	0	0.0
No response	0	0.0	2	2.9	1	0.6	0	0.0
V. Sex								
Male	28	49.1	48	69.6	86	53.4	17	40.5
Female	29	50.9	21	30.4	75	46.6	25	59.5
VI. Marital status								
Single	52	91.2	57	82.6	58	36.0	4	9.5
Married	3	5.3	12	17.4	99	61.5	37	88.1
No response	2	3.6	0	0.0	3	1.8	1	2.4
VII. Hours employed per week								
0--odd jobs	14	24.6	8	11.6	13	8.1	7	16.7
01-20	12	21.1	18	26.1	16	9.9	5	11.9
21-30	6	10.5	9	13.0	7	4.3	1	2.4
31-40	22	38.6	34	49.2	123	76.4	28	66.7
No response	3	5.3	0	0.0	2	1.2	1	2.4
VIII. Enrollment status								
Full-time	31	54.4	34	49.3	28	17.4	6	14.3
Part-time	26	45.6	35	50.7	130	80.7	35	83.3
No response	0	0.0	0	0.0	3	1.9	1	2.4

TABLE XLI--Continued

Variable	Age							
	19 & Under		20-22		23-39		40 & Over	
	N	%	N	%	N	%	N	%
IX. Type of tuition paid								
In-state	.	.	.	.	.	.	.	.
Out-of-state	.	.	.	.	.	.	.	.
Other	.	.	.	.	.	.	.	.
X. Residence classification								
In-state	.	.	.	.	.	.	.	.
Out-of-state	.	.	.	.	.	.	.	.
International	.	.	.	.	.	.	.	.
No response	.	.	.	.	.	.	.	.
XI. Prior school attendance								
High school	52	91.2	39	56.5	62	38.5	11	26.2
2-year college	0	0.0	12	17.4	28	17.4	5	11.9
4-year or grad.-prof. college	2	3.5	13	18.8	44	27.3	9	21.5
Voc-tech or other	2	3.5	4	5.8	22	13.7	13	30.9
No response	1	1.8	1	1.4	5	3.1	4	9.5
XII. Residence								
Room-apt.	3	5.3	12	17.4	28	17.4	3	7.1
Parents' home	50	87.7	46	66.7	24	14.9	0	0.0
Own home	1	1.8	11	15.9	101	62.7	37	88.1
Other	3	5.3	0	0.0	8	4.9	2	4.8
XIII. Have financial aid								
Yes	12	21.1	10	14.5	34	21.1	8	19.0
No	44	77.2	59	85.5	126	78.3	33	78.6
No response	1	1.8	0	0.0	1	0.6	1	2.4
XIV. College major								
Business	11	19.3	19	27.5	56	34.8	6	14.3
Computer science	2	3.5	5	7.2	5	3.1	0	0.0
Education	3	5.3	3	4.3	7	4.3	1	2.4
Engineering	6	10.5	8	11.6	14	8.7	3	7.1
Fine arts	5	8.8	0	0.0	5	3.1	3	7.1
Health profes.	10	17.5	6	8.7	8	5.0	3	7.1
Social sciences	1	1.8	2	2.9	7	4.3	2	4.8
Trade-tech.	5	8.8	11	15.9	20	12.4	5	11.9
11 other mjrs.**	8	14.3	6	8.6	19	11.9	4	7.2
Undecided	5	8.8	5	7.2	19	11.8	9	21.4
No response	1	1.8	4	5.8	1	0.6	6	14.3

TABLE XLI--Continued

Variable	Age							
	19 & Under		20-22		23-39		40 & Over	
	N	%	N	%	N	%	N	%
XV. Occupational choice								
Business	9	15.8	14	20.3	52	32.3	9	21.4
Computer science	2	3.5	6	8.7	4	2.5	1	2.4
Education	4	7.0	2	2.9	6	3.7	1	2.4
Engineering	5	8.8	8	11.6	16	9.9	4	9.5
Fine arts	3	5.3	2	2.9	4	2.5	2	4.8
Health profes.	11	19.3	5	7.2	9	5.6	4	9.5
Comm. serv.	3	5.3	1	1.4	7	4.3	0	0.0
Trade-tech.	8	14.0	9	13.0	24	14.9	5	11.9
11 other occupations ***	5	8.9	5	7.1	18	11.2	4	9.6
Undecided	5	8.8	8	11.6	16	9.9	7	16.7
No response	2	3.5	9	13.0	5	3.1	5	11.9

*Other class levels: N = 111, % = 33.7.

**Other majors includes 2 in agriculture, 1 in architecture, 5 in biological sciences, 6 in communications, 1 in foreign languages, 3 in home economics, 3 in letters, 1 in mathematics, 6 in physical sciences, 5 in community service, and 4 in general studies.

***Other occupational choices include 1 in agriculture, 1 in architecture, 1 in biological sciences, 6 in communications, 0 in foreign languages, 3 in home economics, 6 in letters, 1 in mathematics, 5 in physical science, 7 in social sciences, and 1 in general studies.

TABLE XLII

BACKGROUND CHARACTERISTICS OF THE POPULATION
(CLASS LEVEL AND MARITAL STATUS)

Variable	Class Level				Marital Status			
	Freshman		Sophomore		Married		Unmarried	
	N	%	N	%	N	%	N	%
I. Age	.	.	.	.	.	.	.	.
II. Race	.	.	.	.	.	.	.	.
III. Class level	127	38.6	91*	27.7	.	.	.	.
IV. College goal:								
None	6	4.7	1	1.1	3	2.0	5	2.9
Job courses	6	4.7	2	2.2	19	12.6	6	3.5
Self-improvement	15	11.8	6	6.6	23	15.2	19	11.1
Plan to transfer	39	30.7	38	41.8	30	19.9	61	35.7
Certification	3	2.4	3	3.3	5	3.3	10	5.8
Voc-Tech	3	2.4	1	1.1	4	2.6	5	2.9
Assoc. degree	37	29.1	30	33.0	50	33.1	43	25.1
B. S. degree	13	10.2	10	11.0	15	9.9	15	8.8
Advanced degree	3	2.4	0	0.0	1	0.7	5	3.0
No response	2	1.6	0	0.0	1	0.7	2	1.2
V. Sex								
Male	67	52.8	51	56.0	79	52.3	97	52.3
Female	60	47.2	40	44.0	72	47.7	74	43.3
VI. Marital status								
Single	77	60.6	46	50.5	0	0.0	171	100.0
Married	46	36.2	44	48.4	151	100.0	0	0.0
No response	4	3.2	1	1.1	0	0.0	0	0.0
VII. Hours employed per week								
0--odd jobs	19	15.0	14	15.4	17	11.3	25	14.6
01-20	23	18.1	17	18.7	17	11.3	33	19.3
21-30	14	11.0	7	7.7	5	3.3	18	10.5
31-40	69	54.4	52	57.2	111	73.5	90	52.6
No response	2	1.6	1	1.1	1	0.7	5	2.9
VIII. Enrollment status								
Full-time	47	37.0	35	38.5	27	17.9	72	42.1
Part-time	80	63.0	56	61.5	121	80.1	98	57.3
No response	0	0.0	0	0.0	3	2.0	1	0.6

TABLE XLII--Continued

Variable	Class Level				Marital Status			
	Freshman		Sophomore		Married		Unmarried	
	N	%	N	%	N	%	N	%
IX. Type of tuition paid								
In-state	.	.	.	.	.	.	.	.
Out-of-state	.	.	.	.	.	.	.	.
Other	.	.	.	.	.	.	.	.
X. Residence classification								
In-state	.	.	.	.	.	.	.	.
Out-of-state	.	.	.	.	.	.	.	.
International	.	.	.	.	.	.	.	.
No response	.	.	.	.	.	.	.	.
XI. Prior school attendance								
High school	83	65.4	41	45.1	60	39.7	102	59.6
2-year college	8	6.3	23	25.3	24	15.9	21	12.3
4-year or grad.-prof. college	16	12.6	16	17.6	30	19.8	35	20.4
Voc-tech or other	16	12.6	10	13.2	29	19.2	11	6.5
No response	4	3.1	1	1.1	8	5.3	2	1.2
XII. Residence								
Room-apt.	18	14.2	12	13.2	14	9.3	31	18.1
Parents' home	65	51.2	30	33.0	4	2.6	113	66.1
Own home	41	32.3	45	49.5	126	83.4	21	12.3
Other	3	2.4	4	4.4	7	4.6	6	3.6
XIII. Have financial aid								
Yes	29	22.8	21	23.1	24	15.9	39	22.8
No	97	76.4	69	75.8	126	83.4	130	76.0
No response	1	0.8	1	1.1	1	0.7	2	1.2
XIV. College major								
Business	29	22.8	38	41.8	46	30.5	46	26.9
Computer science	7	5.5	3	3.3	4	2.6	8	4.7
Education	5	3.9	5	5.5	8	5.3	6	3.5
Engineering	15	11.8	5	5.5	12	7.9	19	11.1
Fine arts	9	7.1	1	1.1	4	2.6	7	4.1
Health profes.	15	11.8	4	4.4	8	5.3	19	11.1
Social sciences	2	1.6	7	7.7	5	3.3	7	4.1
Trade-tech.	10	7.9	7	7.7	19	12.6	21	12.3
11 other mjrs.**	13	11.9	15	16.5	17	11.4	18	10.7
Undecided	16	12.6	4	4.4	23	15.2	14	8.2
No response	4	3.1	2	2.2	5	3.3	6	3.5

TABLE XLII--Continued

Variable	Class Level				Marital Status			
	Freshman		Sophomore		Married		Unmarried	
	N	%	N	%	N	%	N	%
XV. Occupational choice								
Business	27	21.3	30	33.0	47	31.1	36	21.1
Computer science	8	6.3	3	3.3	6	4.0	7	4.1
Education	5	3.9	5	5.5	6	4.0	7	4.1
Engineering	11	8.7	5	5.5	15	9.9	18	10.5
Fine arts	9	7.1	1	1.1	3	2.0	7	4.1
Health profes.	14	11.0	6	6.6	9	6.0	19	11.1
Comm. serv.	4	3.1	5	5.5	3	2.0	8	4.7
Trade-tech.	14	11.0	11	12.1	21	13.9	23	13.5
11 other occupations ***	11	8.8	15	16.5	16	10.6	15	8.9
Undecided	16	12.6	5	5.5	19	12.6	16	9.4
No response	8	6.3	5	5.5	6	4.0	15	8.8

*Other class levels: N = 111, % = 33.7.

**Other majors includes 2 in agriculture, 1 in architecture, 5 in biological sciences, 6 in communications, 1 in foreign languages, 3 in home economics, 3 in letters, 1 in mathematics, 6 in physical sciences, 5 in community service, and 4 in general studies.

***Other occupational choices include 1 in agriculture, 1 in architecture, 1 in biological sciences, 6 in communications, 0 in foreign languages, 3 in home economics, 6 in letters, 1 in mathematics, 5 in physical science, 7 in social sciences, and 1 in general studies.

TABLE XLIII

BACKGROUND CHARACTERISTICS OF THE POPULATION
(RACE AND TOTAL GROUP)

Variable	Race						Total Group	
	Caucasian		Black		Other		Summary	
	N	%	N	%	N	%	N	%
I. Age	.	.	.	.	.	.	329	100.0
II. Race	224	68.1	65	19.8	40	12.1	329	100.0
III. Class level	.	.	.	.	.	.	329	100.0
IV. College goal:								
None	8	3.6	0	0.0	1	2.7	9	2.7
Job courses	23	10.3	2	3.1	0	0.0	25	7.6
Self-improvement	29	12.9	7	10.8	6	16.2	42	12.8
Plan to transfer	75	33.5	11	16.9	5	13.5	92	28.0
Certification	9	4.0	3	4.6	3	8.1	15	4.6
Voc-Tech	8	3.6	2	3.1	0	0.0	10	3.0
Assoc. degree	53	23.7	23	35.4	18	48.6	95	28.9
B. S. degree	14	6.3	13	20.0	4	10.8	32	9.7
Advanced degree	2	0.9	4	6.1	0	0.0	6	1.8
No response	3	1.3	0	0.0	0	0.0	3	0.9
V. Sex								
Male	128	57.1	25	38.5	25	67.6	179	54.4
Female	96	42.9	40	61.5	12	32.4	150	45.6
VI. Marital status								
Single	109	48.7	40	61.5	19	51.4	171	52.0
Married	113	50.4	22	33.8	16	43.2	151	45.9
No response	2	0.9	3	4.6	2	5.4	7	2.1
VII. Hours employed per week								
0--odd jobs	25	11.2	12	18.5	4	10.8	42	10.8
01-20	33	14.7	15	23.1	3	8.1	51	15.5
21-30	20	8.9	0	0.0	3	8.1	23	7.0
31-40	143	63.8	36	55.4	26	70.2	207	63.0
No response	3	1.3	2	3.1	1	2.7	6	1.8
VIII. Enrollment status								
Full-time	65	29.0	20	30.8	12	32.4	99	30.1
Part-time	155	69.2	45	69.2	25	67.6	226	68.7
No response	4	1.8	0	0.0	0	0.0	4	1.2

TABLE XLIII--Continued

Variable	Race						Total Group	
	Caucasian		Black		Other		Summary	
	N	%	N	%	N	%	N	%
IX. Type of tuition paid								
In-state	.	.	.	.	.	.	297	90.3
Out-of-state	.	.	.	.	.	.	11	3.3
Other	.	.	.	.	.	.	21	6.4
X. Residence classification								
In-state	.	.	.	.	.	.	312	94.8
Out-of-state	.	.	.	.	.	.	12	3.6
International	.	.	.	.	.	.	1	0.3
No response	.	.	.	.	.	.	4	1.2
XI. Prior school attendance								
High school	111	49.6	28	43.1	24	64.9	164	49.8
2-year college	25	13.7	14	21.5	6	16.2	45	13.7
4-year or grad.-prof. college	50	22.3	15	21.5	2	5.4	68	20.6
Voc-tech or other	31	13.8	8	12.3	2	5.4	41	12.5
No response	7	3.1	1	1.5	3	8.1	11	3.3
XII. Residence								
Room-apt.	29	12.9	12	18.5	4	10.8	46	14.0
Parents' home	77	34.4	25	38.5	16	43.2	120	36.5
Own home	112	50.0	24	36.9	14	37.8	150	45.6
Other	6	2.6	4	6.2	3	8.1	13	3.9
XIII. Have financial aid								
Yes	34	15.2	19	29.2	10	27.0	64	19.5
No	189	84.4	44	67.7	27	73.0	262	79.6
No response	1	0.4	2	3.1	0	0.0	3	0.9
XIV. College major								
Business	62	27.7	19	29.2	9	24.3	92	28.0
Computer science	7	3.1	4	6.2	1	2.7	12	3.6
Education	10	4.5	3	4.6	1	2.7	14	4.3
Engineering	23	10.3	2	3.1	6	16.2	31	9.4
Fine arts	8	3.6	3	4.6	2	5.4	13	4.0
Health profes.	13	5.8	9	13.8	5	13.5	27	8.2
Social sciences	9	4.0	2	3.1	1	2.7	12	3.6
Trade-tech.	31	13.8	6	9.2	3	8.1	41	12.5
11 other mjrs.**	27	11.9	7	10.6	3	8.1	37	11.1
Undecided	26	11.6	6	9.2	6	16.2	38	11.6
No response	8	3.6	4	6.2	0	0.0	12	3.6

TABLE XLIII--Continued

Variable	Race						Total Group	
	Caucasian		Black		Other		Summary	
	N	%	N	%	N	%	N	%
XV. Occupational choice								
Business	60	26.8	18	27.7	4	10.8	84	25.5
Computer science	9	4.0	2	3.1	2	5.4	13	4.0
Education	8	3.6	3	4.6	2	5.4	13	4.0
Engineering	25	11.2	3	4.6	5	13.5	33	10.0
Fine arts	7	3.1	1	1.5	3	8.1	11	3.3
Health profes.	17	7.6	8	12.3	4	10.8	29	8.8
Comm. serv.	7	3.1	1	1.5	3	8.1	11	3.3
Trade-tech.	34	15.2	6	9.2	5	12.5	46	14.0
11 other occupations ***	24	10.4	8	12.2	0	0.0	32	9.6
Undecided	22	9.8	8	12.3	6	16.2	36	10.9
No response	11	4.9	7	10.8	3	8.1	21	6.4

*Other class levels: N = 111, % = 33.7.

**Other majors includes 2 in agriculture, 1 in architecture, 5 in biological sciences, 6 in communications, 1 in foreign languages, 3 in home economics, 3 in letters, 1 in mathematics, 6 in physical sciences, 5 in community service, and 4 in general studies.

***Other occupational choices include 1 in agriculture, 1 in architecture, 1 in biological sciences, 6 in communications, 0 in foreign languages, 3 in home economics, 6 in letters, 1 in mathematics, 5 in physical science, 7 in social sciences, and 1 in general studies.

October 20, 1982

Mr. Jim Horton
President
North Lake College
5001 McArthur Boulevard
Irving, Texas 75062

Dear President Horton:

It is my understanding that you would like to enclose a copy of the ACT Student Opinion Survey in the appendix of your doctoral dissertation. Please use this letter as official permission to enclose the copyrighted document in your dissertation.

Sincerely,

James Maxey

James Maxey, Assistant Vice President
Research Administration Area
Research and Development Division

JM:jf

cc: Aubrey Lewis
Regional Director

National Office
2201 North Dodge Street
P.O. Box 168
Iowa City, Iowa 52243
Telephone: (319) 337-1000

STUDENT OPINION SURVEY

DIRECTIONS: The information you supply on this questionnaire will be kept completely confidential. However, if any item requests information that you do not wish to provide, please feel free to omit it. Your Social Security number is requested for research purposes only and will not be listed on any report.

Please use a soft (No. 1 or 2) lead pencil to fill in the oval indicating your response. DO NOT use a ball-point pen, nylon-tip or felt-tip pen, fountain pen, marker, or colored pencil. Some items may not be applicable to you or to this college. If this is the case, skip the item or mark the "Does Not Apply" option. If you wish to change your response to an item, erase your first mark completely and then blacken the correct oval. Select only ONE response to each item.

PAGE 1 USE A SOFT LEAD PENCIL ONLY

SECTION I—BACKGROUND INFORMATION

Begin by writing your Social Security number in the large boxes at the top of Block A. Then, in the column below each box, blacken the appropriate oval. Complete the remaining blocks by blackening the single most appropriate oval in each case.

A SOCIAL SECURITY NUMBER (Identification Number)

B AGE
- 18 or Under
- 19
- 20
- 21
- 22
- 23 to 25
- 26 to 29
- 30 to 39
- 40 to 61
- 62 or Over

C RACIAL/ETHNIC GROUP
- Afro American/Black
- American Indian or Alaskan Native
- Caucasian-American/White
- Mexican American/Chicano
- Asian-American, Oriental or Pacific Islander
- Puerto Rican, Cuban, or Other Hispanic Origin
- Other
- Prefer Not to Respond

D INDICATE YOUR CLASS LEVEL AT THIS COLLEGE
- Freshman
- Sophomore
- Junior
- Senior
- Graduate or Professional Student
- Special Student
- Other/Unclassified
- Does Not Apply to This College

E FOR WHAT PURPOSE DID YOU ENTER THIS COLLEGE? (Select Only One)
- No Definite Purpose in Mind
- To Take a Few Job-Related Courses
- To Take a Few Courses for Self-Improvement
- To Take Courses Necessary for Transferring to Another College
- To Obtain or Maintain a Certification
- To Complete a Vocational-Technical Program
- To Obtain an Associate Degree
- To Obtain a Bachelor's Degree
- To Obtain a Master's Degree
- To Obtain a Doctorate or a Professional Degree

F SEX
- Male
- Female

G MARITAL STATUS
- Unmarried (including Single, Divorced, and Widowed)
- Married
- Separated
- Prefer Not to Respond

H INDICATE THE NUMBER OF HOURS PER WEEK YOU ARE CURRENTLY EMPLOYED
- 0 or Only Occasional Jobs
- 1 to 10
- 11 to 20
- 21 to 30
- 31 to 40
- Over 40

I WHAT IS YOUR CURRENT ENROLLMENT STATUS AT THIS COLLEGE?
- Full-Time Student
- Part-Time Student

J WHAT TYPE OF TUITION DO YOU PAY AT THIS COLLEGE?
- In-State Tuition
- Out-of-State Tuition
- Does Not Apply to This College

K WHAT IS YOUR RESIDENCE CLASSIFICATION AT THIS COLLEGE?
- In-State Student
- Out-of-State Student
- International Student (Not U.S. Citizen)

L WHAT TYPE OF SCHOOL DID YOU ATTEND JUST PRIOR TO ENTERING THIS COLLEGE?
- High School
- Vocational-Technical School
- 2-Year College
- 4-Year College or University
- Graduate/Professional College
- Other

M INDICATE YOUR CURRENT COLLEGE RESIDENCE
- College Residence Hall
- Fraternity or Sorority House
- College Married Student Housing
- Off-Campus Room or Apartment
- Home of Parents or Relatives
- Own Home
- Other

N DO YOU RECEIVE ANY TYPE OF FEDERAL, STATE, OR COLLEGE-SPONSORED STUDENT FINANCIAL AID? (Scholarships, Grants, Work-Study, etc.)
- Yes
- No

USING THE LIST OF COLLEGE MAJORS AND OCCUPATIONAL CHOICES INCLUDED WITH THIS QUESTIONNAIRE, PLEASE SELECT THE THREE-DIGIT CODES FOR YOUR COLLEGE MAJOR AND YOUR OCCUPATIONAL CHOICE. WRITE THESE CODES IN THE BOXES AT THE TOP OF BLOCKS O AND P, AND BLACKEN THE APPROPRIATE OVAL IN THE COLUMN BELOW EACH BOX. (IF YOU HAVE MORE THAN ONE MAJOR, SELECT THE ONE CODE THAT BEST DESCRIBES YOUR EDUCATIONAL PROGRAM.)

O INDICATE YOUR COLLEGE MAJOR

P INDICATE YOUR OCCUPATIONAL CHOICE

SECTION II—COLLEGE SERVICES

For each service (or program) listed below, indicate whether or not you have used the service, and if you have used the service, your level of satisfaction with the service. If a service is not offered at this college, mark "Not Available at This College" and leave part B blank. If a service is offered but you have not used it, mark "I Have Not Used This Service" and also leave part B blank. Indicate your level of satisfaction (part B) only if you HAVE used the service.

PART A: USAGE			COMPLETE PART B ONLY IF YOU HAVE USED THE SERVICE →	PART B: LEVEL OF SATISFACTION				
NOT AVAILABLE AT THIS COLLEGE	I HAVE NOT USED THIS SERVICE	I HAVE USED THIS SERVICE	COLLEGE SERVICE OR PROGRAM	VERY SATISFIED	SATISFIED	NEUTRAL	DISSATISFIED	VERY DISSATISFIED
○	○	○	1 Academic advising services	○	○	○	○	○
○	○	○	2 Personal counseling services	○	○	○	○	○
○	○	○	3 Career planning services	○	○	○	○	○
○	○	○	4 Job placement services	○	○	○	○	○
○	○	○	5 Recreational and intramural programs and services	○	○	○	○	○
○	○	○	6 Library facilities and services	○	○	○	○	○
○	○	○	7 Student health services	○	○	○	○	○
○	○	○	8 Student health insurance program	○	○	○	○	○
○	○	○	9 College sponsored tutorial services	○	○	○	○	○
○	○	○	10 Financial aid services	○	○	○	○	○
○	○	○	11 Student employment services	○	○	○	○	○
○	○	○	12 Residence hall services and programs	○	○	○	○	○
○	○	○	13 Food services	○	○	○	○	○
○	○	○	14 College sponsored social activities	○	○	○	○	○
○	○	○	15 Cultural programs	○	○	○	○	○
○	○	○	16 College orientation program	○	○	○	○	○
○	○	○	17 Credit-by-examination program (PEP, CLEP, etc.)	○	○	○	○	○
○	○	○	18 Honors programs	○	○	○	○	○
○	○	○	19 Computer services	○	○	○	○	○
○	○	○	20 College mass transit services	○	○	○	○	○
○	○	○	21 Parking facilities and services	○	○	○	○	○
○	○	○	22 Veterans services	○	○	○	○	○
○	○	○	23 Day care services	○	○	○	○	○

MAKE NO STRAY MARKS ON THIS FORM

SECTION III—COLLEGE ENVIRONMENT

Please blacken the oval indicating your level of satisfaction with each of the following aspects of this college. If any item is not applicable to you or to this college, fill in the oval in the "Does Not Apply" column and proceed to the next item. Please respond to each item by choosing only one of the six alternatives.

		LEVEL OF SATISFACTION					
		DOES NOT APPLY	VERY SATISFIED	SATISFIED	NEUTRAL	DISSATISFIED	VERY DISSATISFIED
ACADEMIC	1. Testing/grading system	O	O	O	O	O	O
	2. Course content in your major field	O	O	O	O	O	O
	3. Instruction in your major field	O	O	O	O	O	O
	4. Out-of-class availability of your instructors	O	O	O	O	O	O
	5. Attitude of the faculty toward students	O	O	O	O	O	O
	6. Variety of courses offered by this college	O	O	O	O	O	O
	7. Class size relative to the type of course	O	O	O	O	O	O
	8. Flexibility to design your own program of study	O	O	O	O	O	O
	9. Availability of your advisor	O	O	O	O	O	O
	10. Value of the information provided by your advisor	O	O	O	O	O	O
	11. Preparation you are receiving for your future occupation	O	O	O	O	O	O
ADMISSIONS	12. General admissions procedures	O	O	O	O	O	O
	13. Availability of financial aid information prior to enrolling	O	O	O	O	O	O
	14. Accuracy of college information you received before enrolling	O	O	O	O	O	O
	15. College Catalog/admissions publications	O	O	O	O	O	O
RULES & REGULATIONS	16. Student voice in college policies	O	O	O	O	O	O
	17. Rules governing student conduct at this college	O	O	O	O	O	O
	18. Residence hall rules and regulations	O	O	O	O	O	O
	19. Academic probation and suspension policies	O	O	O	O	O	O
	20. Purposes for which student activity fees are used	O	O	O	O	O	O
	21. Personal security/safety at this campus	O	O	O	O	O	O

		LEVEL OF SATISFACTION					
		DOES NOT APPLY	VERY SATISFIED	SATISFIED	NEUTRAL	DISSATISFIED	VERY DISSATISFIED
FACILITIES	22. Classroom facilities	O	O	O	O	O	O
	23. Laboratory facilities	O	O	O	O	O	O
	24. Athletic facilities	O	O	O	O	O	O
	25. Study areas	O	O	O	O	O	O
	26. Student union	O	O	O	O	O	O
	27. Campus bookstore	O	O	O	O	O	O
	28. Availability of student housing	O	O	O	O	O	O
	29. General condition of buildings and grounds	O	O	O	O	O	O
REGISTRATION	30. General registration procedures	O	O	O	O	O	O
	31. Availability of the courses you want at times you can take them	O	O	O	O	O	O
	32. Academic calendar for this college	O	O	O	O	O	O
	33. Billing and fee payment procedures	O	O	O	O	O	O
GENERAL	34. Concern for you as an individual	O	O	O	O	O	O
	35. Attitude of college nonteaching staff toward students	O	O	O	O	O	O
	36. Racial harmony at this college	O	O	O	O	O	O
	37. Opportunities for student employment	O	O	O	O	O	O
	38. Opportunities for personal involvement in campus activities	O	O	O	O	O	O
	39. Student government	O	O	O	O	O	O
	40. Religious activities and programs	O	O	O	O	O	O
	41. Campus media (student newspaper, campus radio, etc.)	O	O	O	O	O	O
	42. This college in general	O	O	O	O	O	O

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DO NOT TEAR OR STAPLE THIS FORM

SECTION IV—ADDITIONAL QUESTIONS

If an additional set of multiple-choice questions is included with this form, please use this section to record your responses. Twelve ovals are provided for each question, but few questions require that many choices. Simply ignore the extra ovals. If no additional questions are enclosed, leave this section blank.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

SECTION V—COMMENTS AND SUGGESTIONS

If you wish to make any comments or suggestions concerning this college, please use the lines provided below.

DO NOT WRITE BELOW THIS LINE.

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