An Analysis of the Relationship Between Academic Achievement and Five Dimensions of Satisfaction with the College Environment

M. EDWARD BRYAN

1977

This is to certify that the

thesis entitled

AN ANALYSIS OF THE RELATIONSHIP BETWEEN ACADEMIC ACHIEVEMENT AND FIVE DIMENSIONS OF SATISFACTION WITH THE COLLEGE ENVIRONMENT

presented by

M. Edward Bryan

has been accepted towards fulfillment
of the requirements for

Ph.D. degree in _____

Administration And Higher Education

Major professor

Date 4/25/77

O-7639

ABSTRACT

AN ANALYSIS OF THE RELATIONSHIP BETWEEN
ACADEMIC ACHIEVEMENT AND FIVE DIMENSIONS
OF SATISFACTION WITH THE COLLEGE ENVIRONMENT

By

M. Edward Bryan

While a great deal of research has been conducted striving to establish a relationship between employee satisfaction and job performance in industry and business, little systematic analysis of student satisfaction as it relates to academic performance within the college environment has been published to date. The increasing importance of the influence of student perceptions on the collegiate environment combined with the potential for achieving greater congruence between expected perceptions and actual experiences of the student populace, would indicate the need for the systematic investigation of the interactions between the student and the college environment.

A review of the available literature indicates that while college students satisfaction and dissatisfaction is one of the most meaningful indicators of student attitudes toward their collegiate experience, it is one of the least investigated variables in the college setting. Over the

past few years researchers have focused on the environmental climate of the college campus by developing instruments and attempting to measure individual needs, environmental press and student perceptions of the climate. Parallels between studies involving student satisfaction and employee job satisfaction would reasonably indicate that a better understanding of the satisfactions and dissatisfactions of students could lead to reasoned change in the college environment which, in turn, should help students move toward better adjustment or better work output.

The purpose of this study was to identify the relationship, if any, between measures of satisfaction with the college environment, as reflected in the College Student Satisfaction Questionnaire, and the level of academic achievement, as reflected in the grade point average. The study took place at Oregon State University during the 1975-76 spring term. Students residing in the residence halls at OSU completed 866 usable responses of the College Student Satisfaction Questionnaire, Form C. Five scale scores of Compensation, Social Life, Working Conditions, Recognition, and Quality Education were derived from the responses as well as a total satisfaction score. Both the spring term g.p.a. and cumulative g.p.a. information for each student responding was obtained.

After fully exploring the data gained within the limits of the sample, instrument and research design, the

study concluded that the g.p.a. of the students and their feelings of satisfaction, though quantifiable, were independent of each other.

AN ANALYSIS OF THE RELATIONSHIP BETWEEN ACADEMIC ACHIEVEMENT AND FIVE DIMENSIONS OF SATISFACTION WITH THE COLLEGE ENVIRONMENT

By

M. Edward Bryan

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Administration And Higher Education

1977

ACKNOWLEDGEMENTS

The writer is most grateful to Dr. Eldon Nonnamaker for his encouragement and assistance throughout the preparation of this thesis. His patience and support is especially appreciated.

Special gratitude is extended to Dr. Robert Chick, my supervisor, for his personal concern evident in his periodic expressions of interest accompanied by his willingness to help make the time available for the completion of the study.

Additional gratitude is extended to the other members of the Guidance Committee: Dr. Louis Stamatakos, Dr. Bruce P. Coleman and Dr. Norman T. Bell.

Deep appreciation is expressed to Dr. James Simpson for all the technical assistance with the design of the study, statistical treatment of data and computer utilization which he provided in an aura of concern and encouragement.

The many staff in the Oregon State University residence halls who helped with the gathering of data are also recognized for their contribution to this study.

Finally, sincere appreciation is expressed to my wife Norma whose sense of closure was my constant companion and whose understanding grew to accommodate the stress being created as time with the family was eroded by this endeavor.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF ILLUSTRATIONS

CHAPTER I

INTRODUCTION

A college or university is a complex network of social structure and processes and in varying degrees it is a small society of its own. The students who enter a college atmosphere bring with them a great array of unique characteristics. These unique individual characteristics are assimilated with those of the educational institution. This merger results in a multitude of environmental, administrative, faculty and student implications. The dynamic interplay of student characteristics within the matrix of the educational institution's forces has always been an essential ingredient in higher education. Stark (1976) characterizes this as "an interactive process in which the student participant plays an important part in determining the value of the result."

Today the assimilation of the student into the college setting brings with it a greater need for the institution to adapt to its ever-changing clientele. With the lowering age of majority, the availability of the vote, greater involvement with institutional governance and reduction in the parietal rules, it is becoming apparent that the role of the student is to be an active one in the shaping of the college experience. Budgetary limitations,

accountability formulas and dwindling resources make the assessment of institutional accomplishment and the setting of institutional priorities especially important from the perspective of the student being served.

Statements in college catalogs, brochures prepared for admissions counselors and publicity of various types speak to the objectives and ideals which the college hopes to achieve. While some of this is written in a style to subtly appeal and persuade the potential student to become a participant in the college setting, the student, once on campus, finds it difficult to relate everyday experiences to the ideals expressed. Stark (1976) points out that "catalogs and viewbooks have long been attacked by researchers and commentators who have noted that the information may not be only incomplete but often wrong and misleading." (Stark, 1976, p. 60) To date little systematic analysis of the student's on-going perception of his/her collegiate experience has been conducted and the potential for achieving greater congruence between expected perceptions and actual experiences remain undeveloped.

Given the increasing importance of the influence of student perceptions on the collegiate environment it becomes apparent that there is a need for systematic investigation of the interaction between the student and the college environment. Further, a shift from the predominance

of descriptive research to a more dynamic level of analysis involving the input from those most directly being affected would be helpful in beginning to understand the interrelationship which exists between the college environment and the affective domain of the student. This approach, involving a dynamic analysis of the relationship, might very well identify the factors to which the institution might address itself in the development of improved interaction between administration, faculty and student.

The affective domain of the student is elusive but might be observed in terms of its relationship to measurable components of academic progress. Some possibilities for study might be to utilize the various indicators of success in college such as honors, number and type of leadership positions, credit hours accumulated or grade point averages earned in relation to measures in the affective domain such as measures of attitude, interests, values, perceptions, feelings or satisfaction.

College student satisfaction and dissatisfaction, although one of the most meaningful indicators of student attitudes toward their collegiate experience, is one of the least investigated variables in the college setting. Perhaps the intangible qualities of satisfaction and the degree to which it can be affected by experiences

extraneous to the area being studied, limits its application in traditionally controlled research.

THE PREMISE

While little research has been done concerning student satisfaction within the realm of academic progress, a great deal of research has been done in the field of management in relating the satisfaction of employees to turnover, absenteeism, accidents, work adjustment, productivity and performance (e.g., Herzberg, Mausner, Peterson and Capwell, 1957; Hoppock, 1935; Vroom, 1964; Brafield and Crockett, 1955). Berdie (1944) appears to be the first to utilize the results of research done in the field of management in research with college students. He adapted the Job Satisfaction Blank constructed by Hoppock (1935) only slightly to correspond to the college setting and used it to predict student satisfaction with their course of study by comparing their responses on this instrument to their responses on the Strong Interest Blank. The end result was a correlation of .23. The correlation, though modest, caused Berdie to conclude:

> "While the results indicate that no single factor bears a high relationship to a student's satisfaction with

> his curriculum, satisfaction is significantly related to academic achievement" (Berdie, 1944).

It seems reasonable, therefore, to look further at the parallels between research on job satisfaction and studies involving student satisfaction with collegiate experiences. If the principles and methods derived from years of research on satisfaction of employees in business and industry has aided employers in seeking to understand and satisfy the needs of employees in order to bring about better work adjustment, it is reasonable that a better understanding of the satisfactions and dissatisfactions of students could lead to reasoned change in the college environment which, in turn, should help students move toward better adjustment or better work output.

For example, research in job satisfaction has shown a consistent negative relationship between job satisfaction and job turnover (i.e., the greater the satisfaction, the less the turnover) Vroom (1964). Similarly, Starr, Betz and Menne (1972) found a relationship between measures of satisfaction and college dropouts. In a sample of 1968 university students given a satisfaction instrument the year before, a comparison was made between dropouts and non-dropouts. The dropouts scored significantly lower on satisfaction than did the non-dropouts.

If the college student can be viewed as a working

person with some extrinsic compensation (grades, academic advancement, etc.) instead of monetary remuneration and if learning can constitute the parallel with the worker's job, then much that is known about the traditionally defined "worker" might also be true of the student.

Davis, Lofquist, and Weiss (1968) have proposed a theory of work adjustment that incorporates two factors: satisfactoriness and satisfaction. The theory is based upon a principle that an individual will seek to achieve and maintain "correspondence" with the environment. An individual is viewed as bringing certain skills to a work environment which enable him/her 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 these requirements are fulfilled mutually, the individual and the environment are considered to be "correspondent."

This theory of work adjustment may also apply to the total matrix in which a student is immersed. Like a worker, a student must interact with his work (study--learning) environment and achieve a certain level of "correspondence" where this could be described in terms of the individual fulfilling the requirements of the college environment (i.e., meeting minimum grade requirements) as

well as the college environment fulfilling the needs of the individual student. Achievement of this "correspondence" should produce a more satisfied student willing to participate in institutional programs and interact productively as long as this state is operant.

THE PROBLEM

The purpose of this study was to identify the relationship, if any, between measures of satisfaction with the college environment and the level of academic achievement reflected in the grade point average. The measure of satisfaction was limited to five aspects within the college setting and academic achievement was limited to the cumulative grade point average and the grade point average for the most recent term. Both major variables were considered to be independent for the purpose of the study.

DEFINITION OF TERMS

The University	- Oregon State University
Residence Halls	- Twelve on campus facilities accommodating approximately 330 students each in a variety of life styles
Resident Assistants (RA)	- Junior and senior students who serve as staff members for approximately sixty students on a floor

Term	- One third of the regular academic year that marks the duration of courses and the grading period
Cumulative Grade Point Average	- All credit hours earned x grade points ÷ credit hours where the letter grade A = 4 grade points
College Student Satisfaction Questionnaire (CSSQ)	- The test instrument in this study

Statements Of Hypothesis

Since the focus of this study was upon the relationship of academic achievement to student satisfaction dimensions as measured by the College Student Satisfaction Questionnaire (Starr, Betz and Menne, 1971) the following hypotheses were drawn. The hypotheses were stated in the null form to accommodate the statistical manipulation of the data.

HYPOTHESIS ONE

There will be no significant positive correlation between the TOTAL SATISFACTION scores of the entire sample group of 866 as measured by the College Student Satisfaction Questionnaire and academic achievement as reflected by the grade point average for the term in which the CSSQ was administered.

RATIONALE FOR HYPOTHESIS ONE

If, as Hoppock states, the expression of satisfaction "is actually a multitude of satisfactions and dissatisfactions playing upon each other to produce a composite attitude" (Hoppock, 1935), then a measure of total satisfaction which reflects the numerical weight of five dimension scores, could possibly indicate any general relationship that exists with these particular dimensions and the variable, grade point average.

HYPOTHESIS TWO

There will be no significant positive correlation between TOTAL SATISFACTION scores as measured by the CSSQ when grouped by sex and grade point average and academic achievement as reflected by the grade point average for the term in which the CSSQ was administered.

RATIONALE FOR HYPOTHESIS TWO

Because of the preponderance of literature indicating differences between the sexes in grade average attainment and because of the possibility of sex differentiated expectations affecting the responses to items on the CSSQ by one sex more than the other, a need for a separate test for a relationship between the variables was indicated.

HYPOTHESIS THREE

There will be no significant positive correlation between the term grade point average for either sex and the scores on the College Student Satisfaction Questionnaire scales of COMPENSATION, SOCIAL LIFE, WORKING CONDITIONS RECOGNITION AND QUALITY OF EDUCATION.

RATIONALE FOR HYPOTHESIS THREE

The availability of separate measures of reactions to different aspects of the college environment makes it possible to identify sex differences with respect to these particular aspects and to analyze these separate measures in relation to academic achievement as reflected by the grade point average.

HYPOTHESIS FOUR

There will be no significant positive correlation between the CSSQ TOTAL SATISFACTION scores of either sex in each class category (freshman, sophomore, junior or senior) and academic achievement as reflected in the grade point average for the term in which the CSSQ was administered.

RATIONALE FOR HYPOTHESIS FOUR

The traditional categorization by class has the advantage of comparing students whose duration of academic experience is similar. While other research is not conclusive (see Martin, 1968, Johnson and Kurpius, 1967;

Elton and Bate, 1966) factors affecting freshmen and upperclass student satisfaction or achievement may vary with experience in the college setting.

HYPOTHESIS FIVE

There will be no significant positive correlation between the CSSQ TOTAL SATISFACTION scores and the term grade point average of sample groups whose term grade point average varies from the cumulative grade point average by plus or minus 0.5 or more.

RATIONALE FOR HYPOTHESIS FIVE

Since the literature portrays the grade point average as a reflection of a combination of intellective (ability), non-intellective (personality) and individual-environment interactive factors, a variation in the grade point average is possibly reflective of important changes in one or more of these areas. A measure of total satisfaction could be expected to reflect these important changes especially in the interaction of the individual and environment. The degree to which this occurs could be supportive of the premise that an individual in seeking to maintain "correspondence" with the environment will react in measurable terms on a satisfaction instrument (CSSQ).

METHOD OF INVESTIGATION

In this study the analysis of the relationship between student satisfaction and academic achievement involved 866 of the 3,373 students residing in twelve residence halls on the campus of Oregon State University during the 1975-76 spring term. Each student completed a seventy item satisfaction questionnaire designed to yield a separate scale score for each of five dimensions of satisfaction and a composite score for total satisfaction. Cumulative and term grade point averages were utilized to determine the sub-groupings to which statistical analysis was applied.

Residence hall students were utilized exclusively in order that the data on satisfaction with the college environment would reflect the experience of students with a maximum exposure to the college setting and as a means to limit the influence of unlike living experience upon the responses to the items in the satisfaction questionnaire. Accordingly, Baker (1966) found that types of residence do significantly account for differences in perceptions of the characteristics of the college environment. Boarding and dormitory students seem to be less aware of environmental press as compared to those who reside with their families. He also states that boarding and dormitory residents are in one sense more dependent

upon the university for their need satisfaction than are family residents who are members of a community and are perhaps in a better position to have their needs satisfied. It would seem, therefore, that students in residence halls could reflect upon the college environment with some consistency in their responses on the questionnaire.

The instrument selected to measure student satisfaction with the college environment was the College Student Satisfaction Questionnaire developed by Betz, Starr, Klingensmith and Menne in 1971. The authors evolved the instrument from the premise that the study of college student satisfaction can draw upon the principles and methods that have resulted from years of research on the satisfaction of employees in business and industry. The result is a 70 item, five choice LIKERT type response questionnaire that yields scores for five aspects of the college environment which are identified as COMPENSATION, SOCIAL LIFE, WORKING CONDITIONS, RECOGNITION and QUALITY OF EDUCATION. (Each scale is further defined in Chapter III.)

Since the premise of this study draws upon the similarity between the "worker" striving for concurrence with demands of the job and individual needs while the student seeks to meet minimum requirements of the college (i.e., grades) plus the satisfaction of personal needs,

the use of an instrument developed from a similar framework provides the capability for further testing of this assumption.

Since the CSSQ has been applied in other studies which have revealed a relationship between student satisfaction and certain demographic variables such as sex and class, the identification of sub-groups in this study included these two variables (Betz et. al., 1970, 1972). In addition, sub-groups were formed on the basis of a similar range in grade point average as a means of comparing the satisfaction responses of groups of individuals who were comparable in "grade-getting" skills. No attempt was made to control for differences in grading between schools or academic disciplines. Similarly, no controls were exercised in relation to the transfer from one major to another.

Because the data for the total group (parent population) and sub-groups (sub-populations) involved ordered pairs of the two independent variables (satisfaction and academic achievement), the statistical treatment included simple linear regression, correlation (r) and "t" tests. Also utilized were the standard measures of central tendency such as means and standard deviation. Visual plotting and graphing of selected data were provided for emphasis.

CHAPTER II

REVIEW OF THE LITERATURE

Lenning (1974) in preparing the introduction to the American College Testing Monograph #15 dealing with college success and "non-intellective correlates" made the following observation:

> "Very little research in higher education has dealt with the impact of colleges, programs and methodologies on intellectual outlooks and attitudes. Reasons for the apparent lack of interest in evaluating such impact is unclear. Perhaps persons interested in such outputs think it is obvious from their observations and interview contacts that such impacts are occurring or are not occurring. On the other hand, people interested in such outputs may merely not have an evaluation and research orientation."

Nevertheless, some researchers over the last few years have dealt with the environmental climate of the college campus by developing instruments and attempting to measure individual <u>needs</u>, environmental <u>press</u> and student perceptions of that climate. Notable research in these areas include the development of the Activities Index (AI) to measure individual needs and the College Characteristics Index (CCI) to measure environmental press (Pace and Stern, 1958); the College and University Environment Scales (CUES) to analyze the unique environment as perceived by students

(Pace, 1969); the Transactional Analysis of Personality and Environment (TAPE) to study various interactions and transactions that occur within a college environment (Pervin, 1967); the Environmental Assessment Technique (EAT) to define the campus environment in terms of the characteristics of the student body (Astin and Holland, 1961) and the Inventory of College Activities (ICA) to focus on "the observable stimulus properties of the environment and to identify the specific environmental variables that affect the students' development" (Astin, 1968).

Very little research deals directly with college student satisfaction as it relates to academic achievement. The concept of student satisfaction as a measurable variable sufficiently reliable for comparison with other independent variables is relatively recent. The work of Betz et. al. (1970, 1971, 1972) is particularly significant with their evolvement of the College Student Satisfaction Questionnaire. Others have utilized the student satisfaction variable in studies relating to

(a) group performance among college students where satisfaction feedback was given to members (Shaw and Blum, 1965)

(b) self-esteem as a factor in overall student satisfaction (Korman, 1967)

(c) ambiguity in the college environment as it affects student satisfaction (Korman, 1971), and

(d) intrinsic and extrinsic factors affecting graduate student satisfaction (Levine and Weitz, 1965).

Grade point average as a measure of academic achievement is well established. Considerable disagreement still exists, however, about the specific factors being reflected in grades and about the comparability from one discipline to another or from one teacher within a discipline to another (Lavin, 1965; Astin, 1971). Grade point average, nevertheless, continues to be utilized as the best indicator for academic achievement.

The review of literature here is separated into two sections. The first is on satisfaction as it has been evolved into an independent variable applicable to students in higher education. The second section deals with academic achievement as reflected by the grade point average with respect to its use as independent variable.

LITERATURE RELATING TO SATISFACTION

GENERAL

The applicability of the measure of satisfaction as an independent variable in the college environment has its beginnings enmeshed with a plethora of study and research related to the individual in the working environment. Productivity and performance as related to worker

satisfaction has been studied for some time and yet, remains of considerable interest to management researchers and the corporate world. The study of the worker and job satisfaction accounts for scores of research reports listed in the Journal of Applied Psychology Index for the period of 1965-1974. These studies deal with the full spectrum of environmental and psychological factors including reviews of some long-standing theories such as Herzberg's two factor theory; the intrinsic versus extrinsic factor theory; white and blue collar differences; satisfiers versus dissatisfiers, locus of power concepts, effect of self-esteem, etc.

For the purpose of this study, the literature review on satisfaction attempts to relate significant concepts and their development to suggested parallels between worker satisfaction and college student satisfaction.

This review begins in the Hoppock era (1935) as the definition of satisfaction was being stated in both physiological and psychological terms. That is, it was proposed by some theorists that achieving satisfaction was related to the reduction of intraviseral pressure (Berman, 1928). At the same time, others were combining physiological, psychological and environmental factors as stimuli to which the human organism would respond in an attempt to restore a balance which was the state of

satisfaction. It was assumed, however, that a homeostatic condition was never to be achieved in respect to total satisfaction, thereby introducing the concept of degree of satisfaction. Relative to this discussion, Hoppock stated:

> "Complete satisfaction would be to most of us as undesirable as an eternal playground to a man who likes his work. What we seek is an optimum satisfaction which will release us from the tension of a frantic and persistent urge to be doing something else but leave us dissatisfied enough to have something left to work for." (Hoppock, 1935, p. 51)

Hoppock theorized that job satisfaction was any combination of physiological, psychological and environmental circumstances that causes a person to indicate satisfaction with his job. He recognized that while it was important for a worker to be able to express satisfaction in the work situation, such an expression was actually a multitude of satisfactions and dissatisfactions "playing upon each other to produce a composite attitude" (Hoppock, 1935, p. 48). His work focused upon the components of job satisfaction and resulted in the development of the HOPPOCK JOB SATISFACTION BLANK which has been used extensively by other researchers in the study of worker satisfaction (Hoppock, 1935).

As mentioned earlier, Berdie (1944) appears to be the first to utilize the HOPPOCK JOB SATISFACTION BLANK

with college students in his attempt to measure satisfaction with curriculum. While Berdie's interest was to predict student satisfaction from the use of the STRONG INTEREST BLANK, his use of an instrument developed in relation to the work situation produced some results which lends some credibility to the suggested parallel between satisfaction of the worker and the college student.

In 1949 the theory of transactional analysis emerged to explain human behavior in terms of the interactions or transactions between the individual and the environment (Dewey and Bentley, 1949). The interaction approach was found to be useful in areas outside the academic setting such as interpersonal attraction (Newcomb, 1956), occupational choice and satisfaction (Super, 1963), adaptation to cultural patterns (Jahova, 1961), and psychopathology (Kelly, 1966). Within the academic setting, performance has been related to an interaction between student personality and demands of the curriculum (Malleson, 1959; Snyder, 1966), and type of exam (Claunch, 1964). Based upon the theory of transactional analysis, Pervin (1967) developed the Transactional Analysis of Personality and Environment (TAPE) instrument and applied it in an approach called "semantic differential" to study the student-environment interaction and to test the hypothesis that there is a significant relationship between a student's satisfaction with college and a perceived SELF-COLLEGE

similarity. Perceived SELF-COLLEGE similarity was found to be related to ratings of satisfaction with the college environment on both forms of the TAPE (Pervin, 1967).

The need for congruency between the individual and the environment was summarized in 1957 by Cronbach in an often quoted statement:

> "The organism which adapts well under one condition would not survive under another. If for each environment, there is a best organism, for every organism there is a best environment." (Cronbach, 1957, p. 679)

From the perspective of the student dropout as an adaptive organism, Pervin and Rubin studied the dropout with respect to "fit" of the individual to the environment. The TAPE was used to ascertain the SELF-IDEAL-SELF discrepancy and the SELF-COLLEGE similarity. Measures of satisfaction were obtained and identified as academic satisfaction, non-academic satisfaction and general satisfaction. The incongruency between the student's perception of self and the college environment was identified as a factor in dropping out thereby supporting the hypothesis of a relationship between a perceived SELF-COLLEGE similarity and satisfaction.

Instrumentality theory developed by Peak in 1955 provides the hypothesis that a person's attitude toward an outcome depends upon one's perceptions of relationships between the outcome and the attainment of various other

consequences toward which one feels differing degrees of liking and disliking (Peak, 1955). Consistent with this statement are the findings of Starr, Betz and Menne (1972) that students dropping out of college in their sample reflected significant differences from non-dropouts on the Compensation Scale of the CSSQ. This scale indicates the amount of satisfaction with the amount of input relative to the desired academic and personal outcomes.

Graen applied instrumentality theory in an experimental work situation and concluded that if organizations can be designed or restructured to be responsive to the work personalities of individuals, employee's responses to work organizations may be understandable, predictable and reciprocal (Graen, 1969).

Rudolph Moos wrote of a similar application of knowledge about student reaction to the college environment when he said:

> "The student's impression about the quality of the college experience may well be a latent resource for determining the direction of appropriate change in the total environment of the college campus. There is a need, however, to identify the factors that influence the student's perceptions and relate them specifically to areas in need of change." (Moos, 1974)

COMPONENTS OF COLLEGE STUDENT SATISFACTION

If the suggested parallel between "worker" satisfaction and "student" satisfaction is to hold some credibility, then the components of satisfaction in the work situation and the college setting should reflect some similarities. Hoppock (1935) reported a full range of investigations that identified factors related to satisfaction on the job. Within those investigations reported, Hersey (1932) identified several factors associated with adjustment and congruence in the job situation that appear to have some applicability to student satisfaction in the college environment. They are:

(a) a congenial job
(b) sound working conditions
(c) security
(d) satisfactory remuneration
(e) justice
(f) equality
(g) independence
(h) understanding and efficient supervision

While there appears to be no direct evolvement of these factors into measures of college student satisfaction, they do suggest a parallel to the factors admittedly derived from management research by Betz, Menne, Starr and Klingensmith in their development of the JSS_4. (Betz, et al. 1971)

In the research that has been reported in the literature to date, the selection of factors in student satisfaction has been based on logical considerations

rather than from research evidence. Berdie (1944) measured "curriculum satisfaction." Pervin (1967) and Pervin and Rubin (1967) divided overall satisfaction into academic satisfaction, non-academic satisfaction and general satisfaction. Berdie, Pilapil and Im (1968) measured the satisfaction of graduating seniors on nine logically derived factors.

(1) curriculum
(2) instructors
(3) social life
(4) professional counseling
(5) faculty advising
(6) opportunities for cultural development
(7) health service
(8) living quarters, and
(9) the college in general

Levine and Weitz (1968) used the process of factor analysis to evolve graduate student satisfaction components in relation to assistantships (jobs). These factors were:

(1) general satisfaction
(2) intellectual stimulation
(3) the assistantship job
(4) the physical environment and setting
(5) constraints
(6) social future
(7) intellectual stimulation and freedom to pursue intellectual interests

Betz, Klingensmith and Menne (1970) applied factor analysis to six dimensions of college student satisfaction logically derived from job satisfaction research. Unique variables associated with the college setting were also considered and included. Those six dimensions were:

(1) Policies and procedures
(2) Working conditions
(3) Compensation

(4) Quality of Education
(5) Social Life
(6) Recognition

The results of administering their instrument to undergraduate students in a variety of living groups was to substantiate the use of all the dimensions in measuring college student satisfaction except the one dealing with policies and procedures.

The intervening years have produced little additional research on factors in college student satisfaction beyond the development of internal consistency, reliability and validity in one instrument (the CSSQ) for measuring this variable by these same researchers (Betz, Klingensmith and Menne). The most recent form of the CSSQ was used in this study of academic achievement and college student satisfaction.

RESEARCH RELATING STUDENT SATISFACTION TO OTHER VARIABLES

Astin (1973) concluded that

> "dormitory living in contrast to living at home, increases the student's chances of completing college and raises the general level of student satisfaction with the undergraduate college experience."

Netusil and Hallenbeck (1975) concluded that place of residence affects the level of student satisfaction with working conditions. Similarly, Betz, Klingensmith and

Menne (1970) conclude a relationship between satisfaction with working conditions and place of residence but they also found a relationship between residence and CSSQ Scale Scores for Social Life, Compensation and Quality of Education. They stated:

> "Perhaps the most interesting finding is that type of residence seems to be related to satisfaction with academic aspects of college as well as with working conditions and social life" (Betz, Klingensmith and Menne, 1970).

The sex of the student was found to affect the level of student satisfaction with social life in the Netusil and Hallenbeck study (1975) but this was not supported by Betz, Klingensmith and Menne (1970). In their study, the level of student satisfaction was not affected by sex difference.

Working with an earlier form of the CSSQ, Stuartz (1971) found that adult women (21 years and older) were generally more satisfied than younger women. Her study suggests that significant age differences may exist in student satisfaction with the quality of education, policy and procedures and in overall satisfaction.

A longitudinal study involving freshmen and their satisfaction with the college environment revealed an inverse relationship between experience and familiarity with the college setting and satisfaction with college. No relationship was found to exist between initial satisfaction with college and academic achievement at the

end of the year. (Martin, 1968)

In a cross-sectional and longitudinal study of students' perceptions of their college environment, Johnson and Kurpius (1967) found that juniors held lower expectations of the intellectual climate at the University of South Dakota than do freshmen.

Beal and Williams (1968) found that freshmen men were more satisfied with their college experience when they were assigned into residence hall living areas with upperclass students. These researchers found that these freshmen men had developed greater satisfaction in relation to

(a) school and study,
(b) their families,
(c) campus affiliations, and
(d) toward finances.

Freshmen women assigned with upperclass women showed no significant difference with respect to these factors, however.

Since the research reports with respect to the demographic variables of age, sex, academic classification and place of residence in relationship to student satisfaction are not numerous and since present reports offer conflicting results, additional research is needed to document significant directions in these relationships.

LITERATURE RELATED TO ACADEMIC ACHIEVEMENT

It may be argued that the use of grade point average as a measure of academic achievement is much too narrow and descriptive of only a few of the factors found to be related to academic success. For instance, Schroeder and Sledge (1966) list several factors which were found to be related to academic achievement including interest and motivation which, they say, has an overwhelming positive relationship to achievement in scholastic work. Other factors listed by these writers are: middle class attitudes and values; personal and social characteristics, and even anxiety in small amounts. Both socialability and anxiety, in moderation, have been found to contribute to academic achievement (Schroeder and Sledge, 1966). While these factors, and possibly many others, are recognized for their value in understanding the broad complexities of academic achievement, their measurement in quantifiable terms has not gained common acceptance as has the grade point average. As pointed out by Lavin (1965) however, those using the grade point average often reflect them as absolute measures with little reference to the other variables involved in their composition. The grade point average was used here both as a mechanism for grouping like achievers and for statistical comparison with satisfaction scores equally complex in their

reflective capability.

In the current literature, prediction of academic achievement is associated with factors described as: (a) intellective and ability factors, (b) non-intellective and personality characteristics, and (c) interaction between a student's personality and the social environment of the school or college. The importance to researchers of non-intellective factors as well as the recognition of the effect of interaction with the school environment is related to the difficulty of predicting academic success from intellective and ability factors alone. With respect to this, Lavin states:

> "Early research on the prediction of academic performance focused primarily on intellective and ability factors as predictors. Recently there has been the gradual recognition that some students perform better and some students perform worse than predicted by ability tests. The search for causes of these variations in academic performance led first to the consideration of 'non-intellective' or personality characteristics. Even more recently the search has led to the recognition that the interaction between aspects of the student's personality and his social environment (school or college) is important." (Lavin, 1965)

Astin's work in 1971 (in analyzing and presenting data on 2300 American colleges with respect to matching individuals with colleges) leaves one convinced that the

interaction of personality with the school environment as a further refinement to the ability to predict academic achievement still requires considerable research before the full range of factors and their effects on academic success are known.

The personality and school interaction aspect of academic achievement is included here for a perspective showing its recent rise to importance and for the purpose of introducing the legitimacy of the study of college student satisfaction measures with respect to academic achievement. College student satisfaction is reflective, at least, of the student's point of view of the interactive process with the school environment within the limits of the instrument used.

While the majority of research on academic achievement has been done on predictive factors, the primary interest in this study was to identify the degree to which the process of acquiring grades was accompanied by feelings of satisfaction related to selected aspects of the environment. This review, therefore, concentrates on factors that have been associated with academic achievement which support the rationale for the sub-groupings of subjects in this study.

It is clear from the studies of both Astin (1971), and Lavin (1965) that the use of grade point averages in

grouping subjects is not an accurate reflection of ability but rather the result of the interplay of numerous intellective, non-intellective and personality factors. These groupings may reflect numerous factors among which are underachievers and overachievers as well as low and high achievers working at their ability levels (Lavin, 1965, p. 28). There is also some evidence suggesting that shy and withdrawn students may be found among the higher academic performance groups. Bloomberg found that college students showing high academic performance are somewhat more introverted (shy and withdrawn) than students with lower performance (Bloomberg, 1955).

Lavin (1965, p. 21) points out that grade point averages of students in the sciences and technical field may differ markedly from those in the humanities or other fields even though the innate ability levels are comparable. He suggests that where prediction of performance is desired, groupings should reflect curricular patterns.

The literature reflects agreement with respect to differences between the sexes in academic performance measures. From the findings of six studies, Lavin (1965, p. 130) reports that the level of academic performance of females is higher than that for males. He notes that the correlation between intelligence and performance is higher for females than for males. That is, the

performance of females is more nearly equal to their measured ability than is true for males. Astin (1971) reports that literally hundreds of studies have shown that high school girls get higher grades than boys. From a national sample of 36,581 it was shown that women do tend to get better grades during their freshman year in college (Astin, 1971, p. 4). Control for variations in academic performance according to sex is well supported in the literature.

LITERATURE RELATING ACADEMIC ACHIEVEMENT TO RESIDENCE

Because the subjects in this study were exclusively residence hall students, a few studies reporting the influence of the place of residence, or lack of, upon academic achievement provides an added perspective with which to view the results of this study.

Astin (1973), in summarizing the data from a longitudinal study on the effects of dormitory living involving 5091 students, concluded

> "that living in a dormitory, compared to living at home had positive benefits on the student's educational course. Dormitory residents were less likely than commuters to drop out and more likely than commuters to attain the baccalaureate in four years, to apply for admission to graduate school, and to carry a high grade point average."

However, in a study involving students in four

types of residence (fraternities, dormitories, off-campus, and home) the grade point average, when adjusted for scholastic aptitude, did not vary significantly (Prusok 1964).

Similarly, a study involving two groups of off-campus freshmen men students revealed no appreciable difference in grade point averages (Roberts 1964).

In comparing residence hall students to those in off-campus groups called "lodgings," Smallwood and Klas concluded that those living in on-campus residences showed significantly greater academic success than did those in off-campus lodgings (Smallwood and Klas 1973).

When comparing residence hall students to those in off-campus groups on student's self-concept, goals, and achievement in a study of 2295 college men and 2834 college women, Baird (1969) concluded that "the college residence groups in this sample had little influence on students' characteristics or achievements." Relative to satisfaction Baird learned from this study that students living at home were as satisfied with college life and had approximately the same amount of social activity.

The concept of proximity among students and its effect on college performance has been studied extensively by Newcomb (1962, p. 69). Also Jencks and Reisman (1962, p. 794) have expressed the opinion that proximity is an important factor in college life. These authors seem to

agree that the living arrangements of students influence academic outcomes in college. However, Fairchild (1963) has commented on various residence arrangements among upperclassmen and freshmen and indicates that meager knowledge exists regarding the academic impact of such residence patterns.

SUMMARY OF LITERATURE

GENERAL

Although the possibility of a relationship was mentioned by Berdie in 1944, the study of student satisfaction as it relates directly to academic achievement among college students appears to be very scarce in the literature. On the other hand, the study of job satisfaction as it relates to job performance and all the factors (on the job and off) affecting the worker's productivity has been studied thoroughly since the mid-nineteen-thirties. Numerous theories about the relationship of job satisfaction to job performance have evolved and all continue to be tested in research studies including Herzberg's two factor theory of motivators and hygienics. Scores of such studies appear, for instance, in the Journal of Applied Psychology Index for the period 1964 to 1974. (See Appendix E for additional discussion on theories relating to performance and satisfaction.)

STUDENT SATISFACTION

The application of the study and research on worker satisfaction to the college environment and student satisfaction began with Berdie's adaptation of the Hoppock Job Satisfaction Blank in his attempt to predict student satisfaction with curriculum choice. The issue lay dormant for several years although some researchers reported student satisfaction results from survey type questionnaires without reference to worker satisfaction studies or parallels. Not until the late sixties, however, did significant development occur in the identification of factors (dimensions) in student satisfaction. These dimensions were logically derived by Betz, Klingensmith and Menne (1970) from the writing on worker satisfaction and from the knowledge of unique characteristics of the college environment. As factor analysis was applied and refinements in the groupings of items occurred, the resulting questionnaire was administered to students in several reported studies with some success in relating satisfaction to dropping out of college, to place of residence, to sex differences and to age. Reference to academic achievement and satisfaction is inferred in discussions of congruency between the student and the college environment but few studies are reported.

ACADEMIC ACHIEVEMENT

The use of academic achievement as reflected by the grade point average as an independent variable has considerable precedent although the majority of research is concerned with the accuracy in the prediction of academic achievement particularly in the transition of high school graduates to college. Currently the theory associated with the prediction of academic achievement recognizes the influence of three types of factors: (1) intellective and ability, (2) non-intellective or personality characteristics, and (3) the interaction between aspects of the student's personality and the school environment. The most recent of these factors to emerge is that of the personality interaction with the social environment. This coincides with the present study. If the accuracy of prediction of grades is contingent upon the student's interaction with the school environment, then some measures of satisfaction with selected aspects of the college environment may be related to academic success.

Grouping of college students according to procedures supported by research on measuring and analyzing academic achievement data suggests that all except those associated with sex differences may require qualifying explanations and control of extraneous variables. For example, a grouping by grade average reflects only the result of numerous

intellective, non-intellective, and personality factors. That is, grade point average is often not reflective of ability. Similarly, grade point average has been shown to lack comparability between certain disciplines and curricula. Grouping according to sex is well supported in the literature as women characteristically achieve higher grades than men and perform more consistently according to their abilities.

RESIDENCE

As residence of the subjects in this study is limited to residence halls, several studies relating residence factors to academic achievement were reported. Some authors describe residence halls as having certain advantages with respect to academic achievement while others find little significant difference when scholastic aptitude and ability are controlled in the comparisons. Overall, residence halls and their affect upon academic achievement requires further study before unanimous agreement is to be reached.

CONCLUSION

From the literature it appears that the interest in student satisfaction is shared by relatively few researchers who have found their instruments for measuring this variable somewhat limited. The development of the

C.S.S.Q. with its modest but hopeful standardization data provides the opportunity of testing the relationship of a large array of variables to student satisfaction.

CHAPTER III

METHODOLOGY

SUBJECTS

The subjects in this study consisted of 952 of the 3373 students residing in the residence halls at Oregon State University during the 1975-76 spring term. Approximately seventeen students from each of the fifty-six residence hall floors participated in the completion of the College Student Satisfaction Questionnaire although eighty-six answer sheets were unusable resulting in 866 in the sample. Care was taken to assure a near even distribution of men and women while no controls were exercised to select on the basis of age, class, school or other variables. The element of control on the sex of the subjects resulted in a stratified sample of 432 women and 434 men. The accidental sampling of the subjects by class reflected the involvement of 369 freshmen, 265 sophomores, 135 juniors, 91 seniors and 6 others. This sample compares to the total group of residence hall students as reflected in the following table:

Class	% in Residence Halls	% in Sample
Freshmen	53	43
Sophomores	22	30
Juniors	13	16
Seniors	7	10
Others	5	1

The sample reflects a slightly lower number of freshmen and higher number of upperclassmen. The discrepancy in the

"other" category may be related to the inclusion of one "over 21" hall in the residence hall group and its omission in the study.

Each subject was approached by the Resident Assistant (a junior or senior undergraduate student serving as a staff member on a floor accommodating approximately sixty residents) and was asked to participate in this study by signing an agreement to release academic data (See APPENDIX B) and by completing a 70 item questionnaire on satisfaction with the college environment.

[illegible]

The instrument that was utilized is the College Student Satisfaction Questionnaire, Form B. The CSSQ is a seventy item questionnaire relating to various aspects of college life. The five-choice LIKERT-type scale offers response alternatives ranging from "very dissatisfied" through "satisfied" to "very satisfied." Five scale scores are derived as well as a total satisfaction score. The CSSQ Manual (Starr, Metz, and Menne 1971) describes the five scales as follows:

> Compensation: The amount of input (e.g. study) required relative to academic outcomes (e.g. grades), and the effect of input demands on the student's fulfillment of his other needs and goals;
>
> Social Life: Opportunities to meet socially relevant goals, such as dating, meeting compatible or interesting people, making friends, participating in campus events and informal social activities;

Working Conditions: The physical conditions of the student's college life, such as the cleanliness and comfort of his place of residence, adequacy of study areas on campus, quality of meals, facilities for lounging between classes;

Recognition: Attitudes and behaviors of faculty and students indicating acceptance of the student as a worthwhile individual;

Quality of Education: The various conditions related to the individual's intellectual and vocational development, such as the competence and helpfulness of faculty and staff, including advisors and counselors, and the adequacy of curriculum requirements, teaching methods, and assignments.

The College Student Satisfaction Questionnaire is modeled after a job satisfaction measure, The Minnesota Satisfaction Questionnaire (Weiss, Davis, England and Lofquist 1967). Each of the five scale scores is based on the sum of fourteen items. The "total satisfaction" score is obtained by summing item responses for all seventy items. Internal consistency reliabilities range from .78 to .84 with a median of .82 (Starr et al. 1971).

Similarly, the authors report validity studies that relate to satisfaction of college students in much the same way as job satisfaction relates to worker satisfaction and turnover. That is, in a study of 1968 students attending Iowa State University in the 1968-69 school year, it was learned that the non-dropouts were most satisfied, followed by the non-academic dropouts, and, at the lowest satisfaction level were the academic dropouts.

ACADEMIC ACHIEVEMENT

Measures of academic achievement were obtained through the official records of the Registrar. Both the cumulative grade point average and the spring term grade point average were acquired for each participating student in this study. Official designation of class was also taken from the Registrar's records. Specifically, the designation for freshmen coincided with up to 44 accumulated quarter hours; up to 89 for sophomores; up to 134 for juniors and those exceeding 135 quarter hours were designated as seniors. The category of "other" in this study referred to graduate students and non-degree participants.

PROCEDURES

(a) APPROVALS

At Oregon State University all research dealing with human subjects is reviewed by a special committee prior to actual research. Following the approval of the proposal of the writer's Guidance Committee at Michigan State University, the research plan was submitted to the Human Subjects Committee at Oregon State University for their review. Upon that approval, a formal request was submitted to the Registrar for clearance to use academic information to be taken directly from the official records of Oregon State University. In this case, the Registrar was interested in the ability of the research plan to safeguard confidential information. As agreements had been signed by participating

students with the understanding that only social security numbers would be utilized as identifiers, the Registrar gave approval for the use of the academic data (See APPENDIX C for the RESEARCH PARTICIPATING AGREEMENT and REGISTRAR APPROVAL Form).

(b) COLLECTION OF DATA ON SATISFACTION

The College Student Satisfaction Questionnaire was handed to residence hall students on their floor by the Resident Assistants. Twenty students were contacted on each of the fifty-six floors except in the case of four "half-floors" where only ten individuals were asked to participate. Normally each residence hall floor contains approximately sixty individuals but in a group of four halls, the first floor is a half-floor containing only thirty individuals. Each participant signed and returned an agreement (APPENDIX J) prior to accepting the College Student Satisfaction Questionnaire booklet (SEE APPENDIX A). Follow-up for the return of the test instrument was done through the use of the room location on the agreement. A special instruction sheet in the test booklet advised the student to restrict personal identification on the machine scorable answer sheet to the social security number in the special grid.

The distribution of the CSSQ occurred between the third and eighth week of the spring term after the period of orientation to classes and prior to "dead week" and

finals. A maximum of 300 [illegible] booklets were available for distribution at any one time. The distribution throughout each particular residence hall was simultaneous although the retrieval varied somewhat with each staff member designing the schedule for the return of the test materials.

Spring term was selected in order that each subject would have had at least two grading periods in the record and yet would have received the last grade report at least three weeks before taking the [illegible]. Residual effects of factors relating to grades in the previous terms may possibly be operative although the time interval may have been helpful in minimizing those effects.

As the answer sheets for each of the residence hall floors were returned, coding was applied for the identification of the particular hall, the specific floor within the hall and the sex of the participant. This coding provides the means for manipulation of the variables and the recovery of data related to sex and type of hall for research application.

Upon receipt of the [illegible] answer sheets, Central Iowa Associates, Ames, Iowa (the distributors of the [illegible]) prepared punched cards reflecting each of the five scale scores and the total satisfaction score for each of the 352 participants. These cards provided the mechanical capability for all the data manipulation that ensued.

(c) COLLECTION OF DATA ON ACADEMIC ACHIEVEMENT

As the OSIS scale punched cards became available, the social security number identifying each card was matched with the computerized student records to produce a punch card containing the social security number, the class standing of the individual, the cumulative grade point average and the 1975-76 spring term grade point average. The total group for which all academic data was retrievable was 866. The N for this study, therefore, was 866.

(d) DATA PREPARED FOR COMPUTER MANIPULATION

When all data were introduced into the computer and a tape was prepared reflecting all items of information for each subject, immediate retrieval and massive group data manipulation become possible.

STATISTICAL TREATMENT OF DATA

The hypotheses under investigation were analyzed through the application of simple linear regression since only two major variables were involved. Term grade point average (X) was the independent variable for the purpose of linear regression analysis and satisfaction scores (Y) was determined to be the dependent variable. The linear regression model is stated as

$$Y = a + b \cdot X$$

where b = slope of the regression line

and a = the point of the Y intercept.

Linear correlation coefficients (r) reflected the results of correlating the variations in the observed value of Y with the variations in the reported values of X. The linear correlation coefficient formula is stated as

$$r = \frac{N\sum XY - \sum X \sum Y}{\sqrt{[N\sum X^2 - (\sum X)^2][N\sum Y^2 - (\sum Y)^2]}}$$

The test of significance of the linear correlation coefficient (r) was achieved through interpolation of values in the table for (r) in the book by Chao (1969). Degrees of freedom were paramount in determining significance.

To further verify the significance of the linear correlation coefficients, "t" values were computed and placed in the tables of data. The "t" value formula took the form of

$$t = r\sqrt{\frac{n-2}{1-r^2}}$$

Significance for the data in this study was reported at the .05 level and at the .01 level where "t" values met the test of significance at the appropriate number of degrees of freedom.

CHAPTER IV

ANALYSIS OF DATA AND DISCUSSION

The principal objective of this research was to determine if a relationship existed between academic achievement as reflected by the grade point average and five dimensions of student satisfaction with the college environment as measured by the College Student Satisfaction Questionnaire. This chapter is devoted to presenting, analyzing and discussing the data relative to the search for this relationship.

Total satisfaction scores as a sum of the five scale scores provided the focal point in analyzing the data except in Hypothesis Three where the five scale scores were separately identified and analyzed in relation to the grade point average of the sub-groups.

Hypothesis testing was achieved through the derivation of the simple linear correlation coefficient (r) and the conversion of r to a "t" score. The results of the data for each hypothesis are presented in the form of statistical tables.

PRESENTATION OF RESULTS

HYPOTHESIS ONE

"There will be no significant positive correlation between the TOTAL

> SATISFACTION scores of the entire sample group of 366 as measured by the College Student Satisfaction Questionnaire and academic achievement as reflected by the grade point average for the term in which the CSSQ was administered."

FIGURE 1 illustrates the distribution of the TOTAL SATISFACTION scores of the 366 participants in this study. A near normal curve is suggested by the vertical bars placed at equal intervals along the base representing TOTAL SATISFACTION scores. It will be recognized that a fully completed CSSQ answer sheet would provide a maximum range from 70 to 350. An average mark of 3 at the midpoint of the five point response scale on all 70 items would reflect a TOTAL SATISFACTION score of 210. Figure 1 indicates that 410 or 47% of the total sample group averaged 206 or higher in their responses.

FIGURE 2 provides in bar-graph form the placement of the participants of this study along the accumulative grade point average continuum of 0.00 to 4.00. The eight intervals of .49 include all 366 participants with 304 or 92.8% at 2.00 or above. It should be noted that Figure 2 reflects the accumulative grade point average following the spring term of the 1975-76 academic year. Attrition following the fall and winter terms may be a factor in this distribution as those remaining as participants in this study were relatively successful in grade point acquisition.

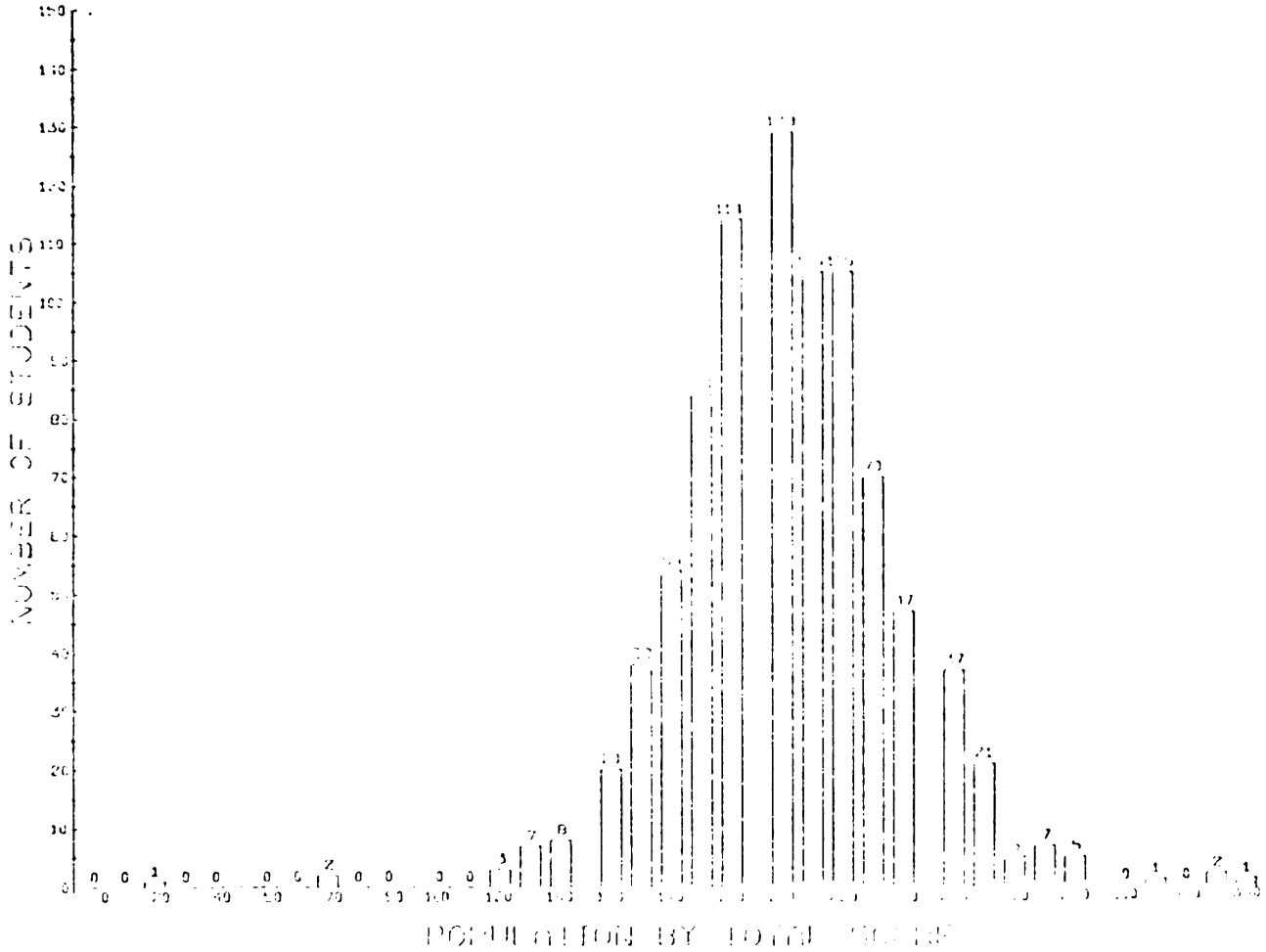


figure 1

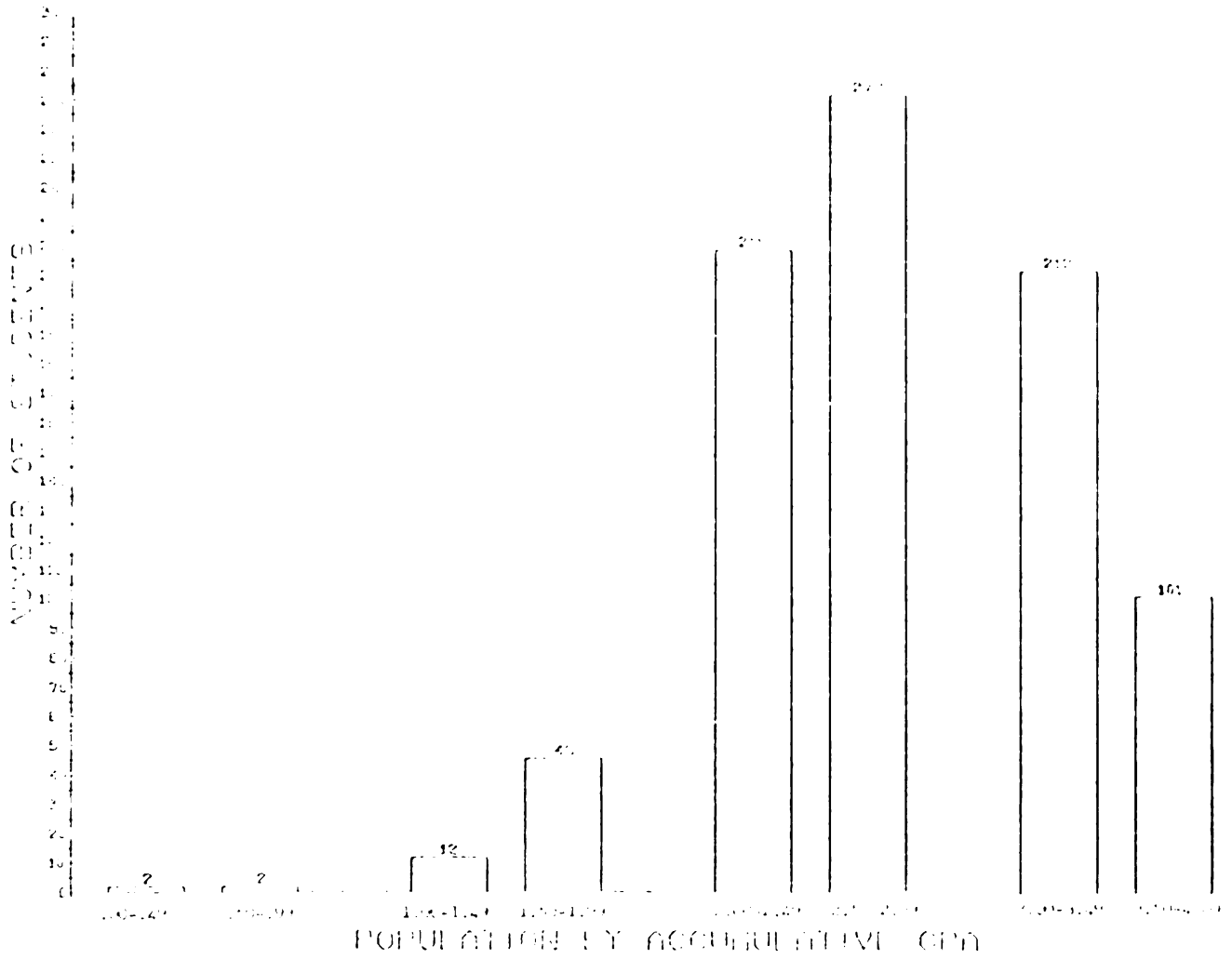


Figure 2

Observing the data presented in TABLE 1, it is clear that no significant positive correlation existed between the term grade point average and the TOTAL SATISFACTION scores for the entire sample group. While the participants reflected a mean g.p.a. of 2.73 and a mean total score of 208.49, the variability of the scores was indicated by a standard deviation of 31.73. A linear correlation coefficient (r) of .1015 converted to the "t" value of 1.73 was not significant at either the .05 or .01 level. Therefore, the null hypothesis is supported by the data.

Separate scale scores, however, indicated a slight relationship in the areas of [illegible] and RECOGNITION. Significance at the .01 level is indicated for [illegible] which is described as "student satisfaction with the amount of study required relative to grades and the effect of these demands with respect to fulfillment of other needs and goals." To a lesser degree a level of significance at .05 on the RECOGNITION scale indicated a relationship between the g.p.a. and the measure of satisfaction described as "attitudes and behaviors of faculty and students indicating acceptance of the student as a worthwhile individual."

The negative linear correlation coefficients indicated for the scale scores of SOCIAL LIFE and WORKING CONDITIONS, although not significant, provides a result that could merit further research and analysis. That is,

TABLE 1

Total Satisfaction and Scale Scores for 866 Subjects Compared Statistically with Term G.P.A. Resulting in Linear Correlation Coefficients (r) and "t" Values

N = 866 G.P.A. = 2.78	Mean Scores	SD	r Value	t Value
Total Satisfaction	208.49	31.75	.0605	1.78
Compensation	41.11	7.34	.1736**	5.18****
Social Life	44.1?	9.52	-.0423	1.24
Working Conditions	41.47	8.17	-.0117	.34
Recognition	40.07	7.61	.0835*	2.46***
Quality of Education	41.73	7.93	.0535	1.57

* Significant at .05 level
**Significant at .01 level
SD = Standard Deviation
*** t = 1.96 at .05 level
**** t = 2.58 at .01 level

if satisfaction with social life varies inversely with the attainment of higher grade point averages and does so consistently, some uses could be made of that result. Similarly, an inverse relationship of working conditions to g.p.a. acquisition, if proven through further research, could be utilized in facilities planning and operation.

HYPOTHESIS TWO

> "There will be no significant positive correlation between TOTAL SATISFACTION scores as measured by the JSSQ (when grouped by sex and grade point average) and academic achievement as reflected by the grade point average for the term in which the JSSQ was administered."

The TOTAL SATISFACTION scores for male students are shown in TABLE 2 according to the term g.p.a. groupings. While the three lower g.p.a. groupings resulted in a sample size too small from which to draw conclusions, the groupings for the more academically successful students provide numbers sufficient for analysis. The group of males (120) earning g.p.a. from 2.00 to 2.49 provided the larger linear correlation coefficient of .1421 when TOTAL SATISFACTION scores were correlated with term g.p.a.'s. The result was not significant, however, at the .05 or .01 level. The null hypothesis relating to the males must be accepted although a pattern of increasing mean total scores as g.p.a. groupings advance from low to high appear to reflect increasing overall satisfaction as higher grades are

TABLE 2

Total Satisfaction Scores of 434 Male Subjects Grouped According to Term G.P.A. Intervals and Compared Statistically Resulting in Linear Correlation Coefficients (r) and "t" Values

Term G.P.A. Intervals	N	Mean Total Scores	SD	r* Value	t*** Value
0.00-0.49	1				
0.50-0.99	1				
1.00-1.49	6	199.50	41.40	-.1496	.30
1.50-1.99	19	202.16	25.08	-.0319	1.32
2.00-2.49	120	202.63	30.99	.1421	1.56
2.50-2.99	134	204.06	33.93	.1187	1.37
3.00-3.49	99	207.27	28.73	.0297	.29
3.50-4.00	54	208.50	29.76	-.0552	.40

SD = Standard Deviation * = No r Values Significant ** = No "t" Values Significant

achieved. As will be seen later, however, this pattern did not emerge with the identical g.p.a. groupings of females.

TABLE 3 provides a similar display of mean TOTAL SATISFACTION scores for females grouped by term grade point averages. The lower number of subjects in the groupings below 2.00 permit no conclusions although a correlation of .1945 resulted in the 1.50-1.99 grouping of 27 students. Generally the correlation coefficients in TABLE 3 fall far below .05 or .01 levels of significance with no apparent trends. As mentioned earlier the mean TOTAL SATISFACTION scores for females in this study followed no regular pattern of low to high even though a low of 200.00 appeared with the low g.p.a. grouping while 218.94 was the mean TOTAL SATISFACTION score for the 3.50 to 4.00 group. Nevertheless, the resulting correlation coefficients for females below the level of significance fails to reject the null hypothesis.

HYPOTHESIS THREE

> "There will be no significant positive correlation between the term grade point average for either sex and the scores on the College Student Satisfaction Questionnaire scales of COMPENSATION, SOCIAL LIFE, WORKING CONDITIONS, RECOGNITION and QUALITY OF EDUCATION."

The data in TABLE 4 indicate that the 434 males in the sample group responded to the items in the COMPENSATION

TABLE 3

Total Satisfaction Scores of 432 Female Subjects Grouped According to Term G.P.A. Intervals and Compared Statistically Resulting in Linear Correlation Coefficients (r) and "t" Values

Term G.P.A. Intervals	N	Mean Total Scores	SD	r* Value	t** Value
0.00-0.49	1				
0.50-0.99	1				
1.00-1.49	6	200.00	20.27	.0039	.00
1.50-1.99	27	211.44	42.23	.1945	.99
2.00-2.49	99	214.12	30.12	.0385	.38
2.50-2.99	138	211.31	32.00	-.0209	.24
3.00-3.49	113	209.11	30.18	-.0771	.81
3.50-4.00	47	218.94	35.78	.0660	.44

* = No r Values Significant SD = Standard Deviation
**= No "t" Values Significant

TABLE 4

CSSQ Scales Scores and Total Satisfaction Score for 434 Male Subjects Compared Statistically With Term G.P.A. Resulting in Linear Correlation Coefficients (r) and "t" Values

N = 434 Mean g.p.a. = 2.75	Mean Scores	SD	r Value	t Value
Compensation	41.37	7.42	.1743*	3.67**
Social Life	41.91	9.27	-.0438	.81
Working Conditions	40.94	7.95	.0192	.39
Recognition	39.70	7.45	.1430*	3.00**
Quality of Education	40.98	8.13	.0827	1.72
Total Satisfaction	204.89	31.07	.0911	1.90

* = r is significant at .01 level
**= t is significant at .01 level
SD = Standard Deviation

and RECOGNITION scales consistently enough in relation to the term grade point average to provide correlations of .1743 and .1490 at the .01 level of significance. The variability of these scale scores as reflected by the standard deviation was relatively low while the variability of the scale scores on SOCIAL LIFE were relatively high with a slight negative measure of correlation.

Similarly the data for 432 females in the sample group reflect a correlation coefficient of .1762 on the COMPENSATION scale which is significant at the .01 level. No other scale scores indicate any significant degree of relationship. The absence of significance in the RECOGNITION scale for females provide the basis for speculation about sex-differentiated differences in perceptions about "attitudes and behaviors of faculty and students indicating acceptance of the student as a worthwhile individual" (CUES manual description of the RECOGNITION scale).

Null hypothesis three is rejected for the COMPENSATION scale for both sexes and for the RECOGNITION scale for men. It is accepted, however, for the scales of SOCIAL LIFE, WORKING CONDITIONS and Quality of Education for both sexes as well as RECOGNITION for women.

TABLE 5

CSSQ Scale Scores and Total Satisfaction Score for 432 Female Subjects Compared Statistically With Term G.P.A. Resulting in Linear Correlation Coefficients (r) and "t" Values

N = 432 Mean G.P.A. = 2.81	Mean Scores	SD	r	t
Compensation	40.85	8.20	.1762*	3.71**
Social Life	46.33	9.26	-.0670	1.39
Working Conditions	41.10	8.36	-.0466	.96
Recognition	40.45	7.75	.0220	.45
Quality of Education	42.48	7.67	.0150	.31
Total Satisfaction	212.11	32.05	.0224	.46

* = r is significant at .01 level
** = "t" is significant at .01 level

To further explore the indication of significant correlations on the COMPENSATION scale for both sexes and on the RECOGNITION scale for males, TABLE 6 (Compensation) and TABLE 7 (Recognition) were prepared to show the extent of the relationship when the sub-populations by sex were further refined by grade point average groupings. In TABLE 6 no significant correlations are shown although negative correlations of -.2449 and -.0007 appear at g.p.a. intervals of 1.50-1.99 and 3.50-4.00 for males and much lower comparable correlations at these intervals for females. The size of the groups at these intervals are relatively small, however, permitting no sound conclusions to be drawn.

In TABLE 7 a correlation of .1973 at the .05 level of significance for males in the 2.00-2.49 g.p.a. interval is accompanied by a negative correlation of -.0670 for a group of 99 females at the same g.p.a. interval. All other intervals in TABLE 7 reveal no significant correlations. Negative figures in the slight correlations for females at the 3.00-3.49 interval and for males at the 3.50-4.00 interval present the question of possible perceptual inconsistencies among the more capable students and their feelings of satisfaction with respect to the dynamics surrounding COMPENSATION and RECOGNITION.

TABLE 7

Recognition Scale Scores For 434 Males and 432 Females Grouped According to Term G.P.A. Intervals and Compared Statistically Resulting in Linear Correlations (r) and "t" Values

Term G.P.A. Intervals	N	Mean Scale Scores	SD	r Value	t Value
0.00-0.99					
Males	2	---	---	---	---
Females	2	---	---	---	---
1.00-1.49					
Males	6	38.50	6.80	.0565	.14
Females	6	41.66	8.29	-.0960	.23
1.50-1.99					
Males	19	37.36	7.32	.0546	.24
Females	27	39.66	9.85	.1969	1.00
2.00-2.49					
Males	120	38.96	7.35	.1973*	2.13**
Females	99	40.57	7.82	-.0872	.86
2.50-2.99					
Males	134	40.17	7.89	.1630	1.86
Females	138	40.36	7.70	.0412	.48
3.00-3.49					
Males	99	40.00	7.42	.0369	.37
Females	113	40.26	7.35	-.1485	1.57
3.50-4.00					
Males	54	40.72	6.83	-.1126	.82
Females	47	41.38	7.81	.1000	.68

* r Value is significant at .05 Level SD = Standard Deviation
**t Value is Significant at .05 Level

HYPOTHESIS FOUR

> "There will be no significant positive correlation between the USU TOTAL SATISFACTION scores of either sex in each class category (freshmen, sophomores, juniors or seniors) and academic achievement as reflected in the grade point average for the term in which the USU was administered."

TABLE 8 summarizes the data on the correlation of TOTAL SATISFACTION scores with the term grade point averages of freshmen, sophomores, juniors and seniors in the sample population. A division of class by sex provided a basis for comparison within the classification categories. In order to confine the data to the space of one table, the standard deviations for the various groups were not shown. In observing TABLE 8 it becomes apparent that grade point averages for both sexes increased from one classification to the next with no observable increase in satisfaction. All correlations were below .21 and none were significant at the .05 or .01 levels. The null hypothesis, therefore, was accepted.

The data in TABLE 8 does show, however, a pattern of consistent difference between the males and females. Not only were the grade point averages for the females higher at each class level, thus supporting the conclusion by A. W. Astin (1971) that females earn consistently higher grades, but the TOTAL SATISFACTION scores were also higher at each class level for females. Since no significant

relationship between student satisfaction and grade point average is evident in the data of TABLE 8, other reasons should be explored for females indicating higher mean total scores with higher mean grade point averages than did males.

Additional data shown in TABLE 9 concerning the CSSQ scale for COMPENSATION for subjects grouped by class revealed a correlation of .2444 which is significant at the .01 level for 144 freshmen males. A term g.p.a. for this group was 2.49 and was accompanied with a mean scale score of 41.21. One possible interpretation is that the freshmen males in this study were reasonably well satisfied with the amount of study required for grade attainment and were not adversely affected in other endeavors.

Also in TABLE 9, junior females and senior males reflected correlations of .3434 and .2627 which are significant at the .05 level. The mean scale scores for COMPENSATION were 41.87 and 40.43 indicating a similar level of satisfaction with freshmen males. The sample size for these two groups, however, were too small to permit broad conclusions.

TABLE 10 is presented as follow-up data on the discussion of RECOGNITION scale scores in HYPOTHESIS THREE where a relationship was found between term g.p.a. and RECOGNITION scale scores for the 434 males in the study. When grouped by class (as indicated in TABLE 10), male

TABLE 10

Recognition Scale Scores For 429 Males and 431 Females Grouped By Class and Compared Statistically Resulting in Linear Correlation Coefficients (r) and "t" Values

Groups By Class	N	Mean Term G.P.A.	Mean Scale Scores	r Value	t Value
Freshmen					
Males	144	2.49	39.44	.1564	1.85
Females	225	2.02	40.07	-.0207	.31
Sophomores					
Males	142	2.73	39.04	.2421*	2.80**
Females	123	2.96	41.13	.0527	.58
Juniors					
Males	80	2.95	40.01	.0095	.08
Females	55	2.99	40.18	.0412	.31
Seniors					
Males	63	3.03	40.14	.0507	.40
Females	28	3.13	41.07	.0960	.51

* r Value is significant at .01 level
** "t" Value is significant at .01 level

sophomores reflected scores that were correlated (.2421) with term g.p.a. at the .01 level of significance. That other groups of males were not correlated significantly thwarts any far-reaching conclusions but the identification of the sophomore male group for further study in respect to RECOGNITION may be indicated.

HYPOTHESIS FIVE

> "There will be no significant positive correlation between the JSSQ TOTAL SATISFACTION scores and the term grade point average of sample groups whose term grade point average varies from the accumulative grade point average by plus or minus 0.5 or more."

An N of 200 or 33% of the total sample population earned grade point averages for the 1975-76 spring term that varied from their accumulative grade point averages by a minimum of plus or minus 0.5. Of the 200 subjects, 96 were males and 104 were females. Those varying by a plus 0.5 or more totaled 104 while 96 varied by at least 0.5 in the negative direction.

TABLE 11 provides a summary of the data relative to the impact of varying grade point averages upon the feelings of satisfaction expressed at the time of completion of the JSSQ instrument. While the mean grade point averages vary from 1.73 to 3.32 for these four groups, the corresponding range of the mean TOTAL SATISFACTION scores range from 201.05 to 209.59. This TOTAL score range contains the

TABLE 11

Total Satisfaction Scores of Subjects Whose Term G.P.A. Varied ± 0.5 From Accumulative G.P.A. Compared Statistically Resulting in Linear Correlation Coefficients (r) And "t" Values

Groups		N	Mean Term G.P.A.	Mean Total Scores	SD	r* Value	t** Value
Males	± 0.5	44	3.32	208.07	33.74	-.1930	1.26
Females	± 0.5	60	3.31	210.70	34.38	-.1395	1.07
All	± 0.5	104	3.32	209.59	33.97	-.1619	1.66
Males	- 0.5	52	1.76	197.10	25.12	-.1705	1.21
Females	- 0.5	44	1.69	205.73	26.67	.1090	.12
All	- 0.5	96	1.73	201.05	26.06	-.0488	.47

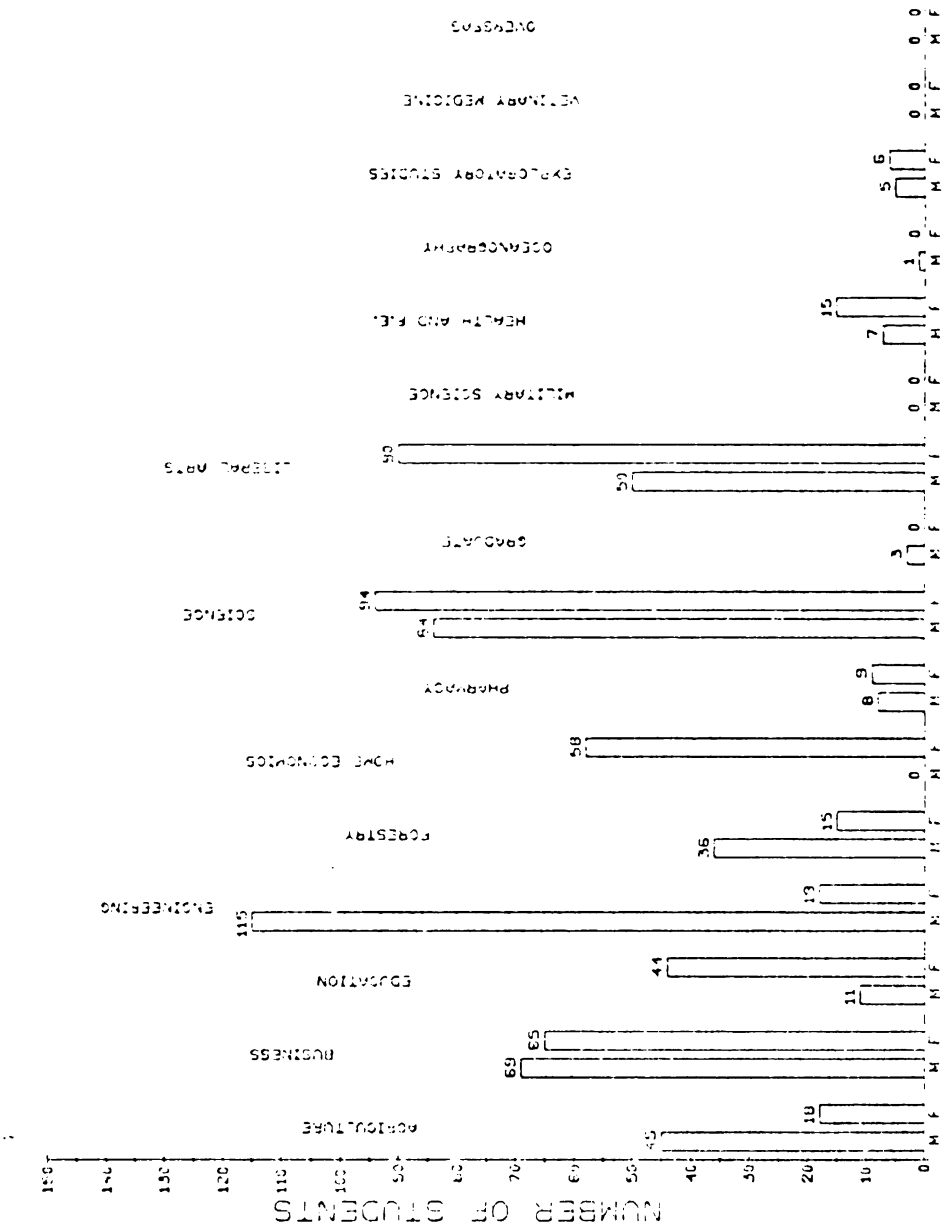
* No "r" value is significant SD - Standard Deviation
** No "t" value is significant

MEAN TOTAL SATISFACTION SCORE (208.49) for the entire sample group of 466 subjects. The correlations for these four groups range from -.1619 for those earning grades higher than their accumulative g.p.a. to .0478 (females). Since none of these correlations are significant at the .05 or .01 levels, the null hypothesis was supported by the data.

ADDITIONAL DATA AND DISCUSSIONS

In the search for a relationship between academic achievement and satisfaction with five aspects of the college environment, the possibility of a relationship unique to a particular school within the university stimulated the identification of subjects with respect to the school of their major. In addition, the school populations were divided by sex. The distribution of the subjects is presented in FIGURE 3. From this array of groups, the subjects from five schools were selected for analysis. These schools were: (1) BUSINESS, (2) ENGINEERING, (3) HOME ECONOMICS, (4) SCIENCE, and (5) LIBERAL ARTS.

TABLE 19 provides the comparative data for the males and females in the selected schools. Utilizing the TOTAL SATISFACTION scores, a correlation of .3090 appeared for females in the School of Home Economics. The level of significance of the correlation coefficient of .05



POPULATION BY SCHOOL AND SEX/SCHOOL
Figure 3

TABLE 12

Total Satisfaction Scores For Subjects Grouped According to Sex and School Compared Statistically Resulting in Linear Correlation Coefficients (r) and "t" Values

Selected Schools	N	Mean Term G.P.A.	Mean Total Scores	SD	r Value	t Value
Business						
Males	69	2.62	209.30	25.34	-.1408	1.15
Females	65	2.75	211.32	28.66	.1205	.96
Engineering						
Males	114	2.82	206.12	25.28	.0393	.42
Females	18	2.70	225.72	31.59	.0138	.17
Home Economics						
Males	0					
Females	98	2.84	211.02	29.16	.3090*	2.24**
Science						
Males	84	2.81	199.31	37.44	.2134	1.91
Females	94	3.01	207.89	31.97	-.1438	1.38
Liberal Arts						
Males	50	2.66	208.00	37.24	.0552	.39
Females	90	2.78	210.34	29.20	.0185	.18

* r value is significant at .05 level SD = Standard Deviation
** "t" value is significant at .05 level

accompanied a relatively high mean score (211.02) on TOTAL SATISFACTION although this mean score was exceeded (225.72) by the 18 female Engineering students. While no other significant correlations appeared in TABLE 12, the range of mean TOTAL SATISFACTION SCORES and the apparent differences in grade point averages among the selected schools suggest uniqueness in the dynamics related to either satisfaction or academic achievement. For example, the 18 females in Engineering exceed all the mean TOTAL scores in this study but fall below the male grade point average as a group for the first and only time in this research study. The number of subjects, however, prevent the drawing of conclusions on this point.

Continuing the attention on the COMPENSATION scale scores as applied to the subjects associated with the selected schools, TABLE 13 presents the data in similar format. The highest correlation coefficient in the study (.4631) appeared in relation to the COMPENSATION scale score for females in Home Economics. The sample group of 58 was small but the correlation coefficient was very significant at the .01 level. Similarily males in Science also reflected a correlation of .3055 which was significant at the .01 level. Females in Science provide the only significant negative correlation in this research project while providing a slightly higher satisfaction score than

TABLE 13

Compensation Scale Scores For Subjects Grouped According to Sex and School Compared Statistically Resulting in Linear Correlation Coefficients (r) and "t" Values

Selected Schools	N	Mean Term G.P.A.	Mean Scale Scores	SD	r Value	t Value
Business						
Males	69	2.62	42.00	5.67	-.0531	.44
Females	65	2.75	40.30	6.03	.2010	1.59
Engineering						
Males	114	2.82	41.73	6.75	.1477	1.59
Females	18	2.70	43.00	8.27	19.55	.81
Home Economics						
Males	0					
Females	58	2.84	39.82	7.78	.4631**	3.12****
Science						
Males	84	2.81	40.53	9.20	.3055**	2.08***
Females	94	3.01	41.02	8.91	-.2198*	2.08***
Liberal Arts						
Males	50	2.66	41.22	8.16	.1365	.96
Females	90	2.78	41.02	8.36	.1858	1.73

* r value is significant at .05 level
** r value is significant at .01 level
*** "t" value is significant at .05 level
SD = Standard Deviation
**** "t" value is significant at .01 level

did the males in Science.

TABLE 14 provides data that indicated slight correlations between the RECOGNITION scale scores and the term g.p.a. The females in the School of Home Economics reflected a correlation of .3152 that was significant at the .05 level. Males in Science reached a correlation of .3430 also significant at the .05 level. The satisfaction scores for males in Science were relatively low on the RECOGNITION scale compared to females in Home Economics.

The configuration of the data provided for the selected schools in TABLES 12, 13 and 14 indicate that there may be sufficient differences associated with students in various academic areas to warrant additional research on achievement and satisfaction. It is possible, however, that the uniqueness reflected here is due to local conditions not to be found elsewhere.

TABLE 14

Recognition Scale Scores For Subjects Grouped According to Sex and School Compared Statistically Resulting in Linear Correlation Coefficients (r) and "t" Values

Selected Schools	N	Mean Term G.P.A.	Mean Scale Scores	SD	r Value	t Value
Business						
Males	69	2.62	39.84	5.98	.0068	.06
Females	65	2.75	39.69	7.50	.2054	1.62
Engineering						
Males	114	2.82	40.70	5.69	.0054	.06
Females	18	2.70	43.94	8.23	-.1558	.65
Home Economics						
Males	0					
Females	58	2.84	40.67	6.86	.3152*	2.27
Science						
Males	84	2.81	37.78	8.87	.2430*	2.16**
Females	94	3.01	40.20	7.86	-.0979	.94
Liberal Arts						
Males	50	2.66	40.90	9.12	.1604	1.12
Females	90	2.78	39.83	7.18	-.1328	1.24

* r value is significant at .05 level
** "t" value is significant at .05 level

SD = Standard Deviation

CHAPTER V

SUMMARY, CONCLUSIONS, DISCUSSION, INFERENCES AND SPECULATION AND RECOMMENDATIONS

Summary

This research was stimulated by an interest in studying the impact of satisfaction among college students upon academic achievement in much the same way as researchers have sought to establish a relationship of worker satisfaction to performance on the job in business and industry. While numerous researchers continue to study the performance and productivity of the worker with respect to the level of satisfaction in the job situation, few attempts have been made to explore the academic performance of students as a function of satisfaction within the college environment. Berdie's use of the MINNESOTA JOB SATISFACTION BLANK in studying student satisfaction with the curriculum (1944) opened the area for further research but little was done until the work of Betz, Menne, Starr and Klingensmith (1971) in developing the College Student Satisfaction Questionnaire (CSSQ).

In this study the CSSQ was utilized as the instrument to quantitatively measure the satisfaction of 800 students at Oregon State University on the five scales of COMPENSATION, SOCIAL LIFE, WORKING CONDITIONS, RECOGNITION and QUALITY OF EDUCATION. A TOTAL SATISFACTION score was

derived from the sum of the scale scores.

The design of the study made it possible to statistically compare the satisfaction scores with the grade point average for the term in which the CSSQ was administered. The various sub-populations selected from the total sample for statistical comparison were males and females, groups of academic class, groups by g.p.a. level, and groups whose term g.p.a. varied $\pm$ 0.5 from the accumulative grade point average.

CONCLUSIONS

Five null hypotheses were tested and the results were as follows:

HYPOTHESIS ONE

There will be no significant positive correlation between the TOTAL SATISFACTION scores of the entire sample group of 866 as measured by the College Student Satisfaction Questionnaire and academic achievement as reflected by the grade point average for the term in which the CSSQ was administered.

RESEARCH CONCLUSION FOR HYPOTHESIS ONE

When taken as one group the 866 students provided TOTAL SATISFACTION scores that did not correlate significantly with the term grade point average. However, the scale scores for COMPENSATION correlated significantly at the .01 level while the scale scores for RECOGNITION correlated

with g.p.a. at the .05 level. Nevertheless, Hypothesis One was not rejected by the analysis of the data.

HYPOTHESIS TWO

There will be no significant positive correlation between TOTAL SATISFACTION scores as measured by the CSSQ when grouped by sex and grade point average and academic achievement as reflected by the grade point average for the term in which the CSSQ was administered.

RESEARCH CONCLUSION FOR HYPOTHESIS TWO

The division of the total sample group into groups by sex and further divided into groups according to similar grade point averages provided an apparent pattern of increasing mean scores from the low g.p.a. group to the high g.p.a. group of males, but only suggested a like pattern in the female groups. No significant correlations between g.p.a. and TOTAL SATISFACTION scores were found for either sex. Therefore, Hypothesis Two was accepted.

HYPOTHESIS THREE

There will be no significant positive correlation between the term grade point average for either sex and the scores on the College Student Satisfaction Questionnaire scales of COMPENSATION, SOCIAL LIFE, WORKING CONDITIONS RECOGNITION AND QUALITY OF EDUCATION.

RESEARCH CONCLUSION FOR HYPOTHESIS THREE

In analyzing each of the five scale scores on the

CSSQ for both males and females, significant linear correlation coefficients evolved for males on the COMPENSATION and RECOGNITION scales and for females only in relation to the COMPENSATION scale scores. No significant correlations were found for either sex on the scales of SOCIAL LIFE, WORKING CONDITIONS and QUALITY OF EDUCATION.

Therefore, the null hypothesis was rejected for the CSSQ scales of COMPENSATION and RECOGNITION for males and for COMPENSATION for females. The null hypothesis was accepted, however, for the CSSQ scales of SOCIAL LIFE, WORKING CONDITIONS and QUALITY OF EDUCATION for both males and females.

HYPOTHESIS FOUR

There will be no significant positive correlation between the CSSQ TOTAL SATISFACTION scores of either sex in each class category (freshman, sophomore, junior or senior) and academic achievement as reflected in the grade point average for the term in which the CSSQ was administered.

RESEARCH CONCLUSION FOR HYPOTHESIS FOUR

As students were grouped according to academic class and further grouped by sex within the class, TOTAL SATISFACTION scores failed to correlate significantly with the term grade point average for any particular class or sex within the class. It was apparent, however, that females

did consistently earn higher grades than did males in the same class.

As a result of the analysis of the data the null hypothesis was accepted.

HYPOTHESIS FIVE

There will be no significant positive correlation between the CSSQ TOTAL SATISFACTION scores and the term grade point average of sample groups whose term grade point average varies from the cumulative grade point average by plus or minus 0.5 or more.

RESEARCH CONCLUSION FOR HYPOTHESIS FIVE

Extracting those students whose term g.p.a. varied plus or minus 0.5 from their accumulative grade point average and analyzing the relationship of the g.p.a. to TOTAL SATISFACTION revealed no significant correlations. The general level of satisfaction reflected in TOTAL SATISFACTION scores were not dissimilar to those of the entire sample group. Therefore, the null hypothesis was accepted.

Additional data compiled for males and females in selected schools of Business, Engineering, Home Economics, Science and Liberal Arts reflected only one correlation at low level significance ($P < .05$) for females in Home Economics with respect to TOTAL SATISFACTION scores. Means for these scores, however, ranged from 199.31 to 225.72 indicating considerable variation from one sex to another

within a particular school and also from school to school. Significant correlations did appear on the COMPENSATION scale for Home Economic females and all students in Science. The COMPENSATION scores for females in Science, however, were negatively correlated with grade point average. RECOGNITION scale scores for Science males were significant at the .05 level. The uniqueness in these data, however, may be due to local conditions and dynamics.

DISCUSSION

The lack of significant correlations, between term grade point averages and TOTAL SATISFACTION scores on the CSSQ irrespective of sub-populations tested, raises fundamental questions about a number of components in this study including the relative importance of grades as satisfiers among college students. Before conclusions are drawn, however, it is necessary to recognize that the measures of satisfaction taken in this study preceded the student's knowledge about the actual grades received for the term. While the assumption implicit in the research design was that a student could anticipate the level of academic achievement from cues received throughout the term and from the experience of the grades from two previous terms, the accuracy of the perception may have been influenced by numerous factors varying from individual to individual.

The restriction of the sample to residence hall students, while intentional as a means of controlling the influence of different styles of living upon the results, may have succeeded in identifying students whose sense of well-being and satisfaction with the college environment was greater than might have been true of a random sample of the general student population. Supporting this possibility is the normative table in the CSSQ MANUAL (Starr, et. al., 1971) which indicates a mean TOTAL SATISFACTION score for 2,287

public university students of 204.83 compared to 208.49 for the 866 students in this study. Similarly, the variability of the scores as reflected by the standard deviation was less in this study (31.75) compared to 32.13 on the normative table for the 2287 students. The more intense interaction occurring in residence halls may also have been a factor in diverting feelings about the importance of grades in relation to other factors in the reward system operative in the residence halls at the time the CSSQ was administered.

In addition to the limiting factors in the design of the study, the separate scales in the CSSQ provides the basis for inferring a slight but significant relationship between the g.p.a. and certain components of total satisfaction particularly COMPENSATION and RECOGNITION while other components of satisfaction reflected no significant relationship to the g.p.a. One might conclude that as a student is asked specifically about his feelings associated directly with the instructional functions, a more definite relationship between these feelings and grade point average emerges.

Given the above qualifications, the data presented here gives little support to the supposition that the grade point average plays an important role in a student's assessment of personal "satisfactoriness" (Davis, Lofquist and Weiss, 1968)

for remaining in the college environment particularly after the minimum g.p.a. is attained. Rather, the data implies that satisfaction in the college environment is related to other factors irrespective of the grades being achieved. If the theory of "Correspondence," discussed earlier in this paper, is applicable to the college student and is dependent upon grades as a part of the reward system in the college environment, then, at best, this researcher could only suggest that each student develops a personal standard with which to evaluate academic performance rather than accept any absolute standards inferred in the 0.0-4.0 system of grading. One is led to infer that as the personal standard for grades is met, other factors in the college environment play a more important role in feelings of satisfaction. While there is no data in this study which identify those factors, demographic data and other measures of social and academic achievement compared to CSSQ results might be helpful in developing a profile of the satisfied student.

The capability to manipulate the data in this study by computer has been thoroughly utilized in order that no possibility would be overlooked for identifying a sub-population where strong correlations would appear. The computer was used for extending the analysis and computing linear correlation coefficients through all the CSSQ scales for each sub-population including sex, class, school,

g.p.a. group and accumulative g.p.a. variation group in the research for a relationship between g.p.a. and student satisfaction. The data have been fully explored within the limits of the sample, the instrument and the design of the study resulting in the conclusion that the g.p.a. of students and their feelings of satisfaction, though quantifiable, are independent of each other.

This conclusion is graphically presented in Figure 4 on the following page and in other selected scattergrams of the raw data in Appendix F. Each subject's satisfaction score is placed above the "x" axis in relation to the term g.p.a. on the "y" axis. The number of subjects (N) in each scattergram is identical with the number of symbols (+) placed on the page. This number corresponds to the data presented earlier in tabular form. The scattergrams in Figure 4 through Figure 16 (Figures 5 through Figure 16 are in Appendix F) present the data for the total population, for the sub groups of men and women, for all subjects by class and for all subjects whose term g.p.a. varied from the accumulative g.p.a. by $\pm$ 0.5 or more. As will be seen, the most consistent pattern is a heavy vertical concentration around the mean of the satisfaction scores with very little visual discernable distribution on a 45° diagonal which would represent high correlation between the two variables.

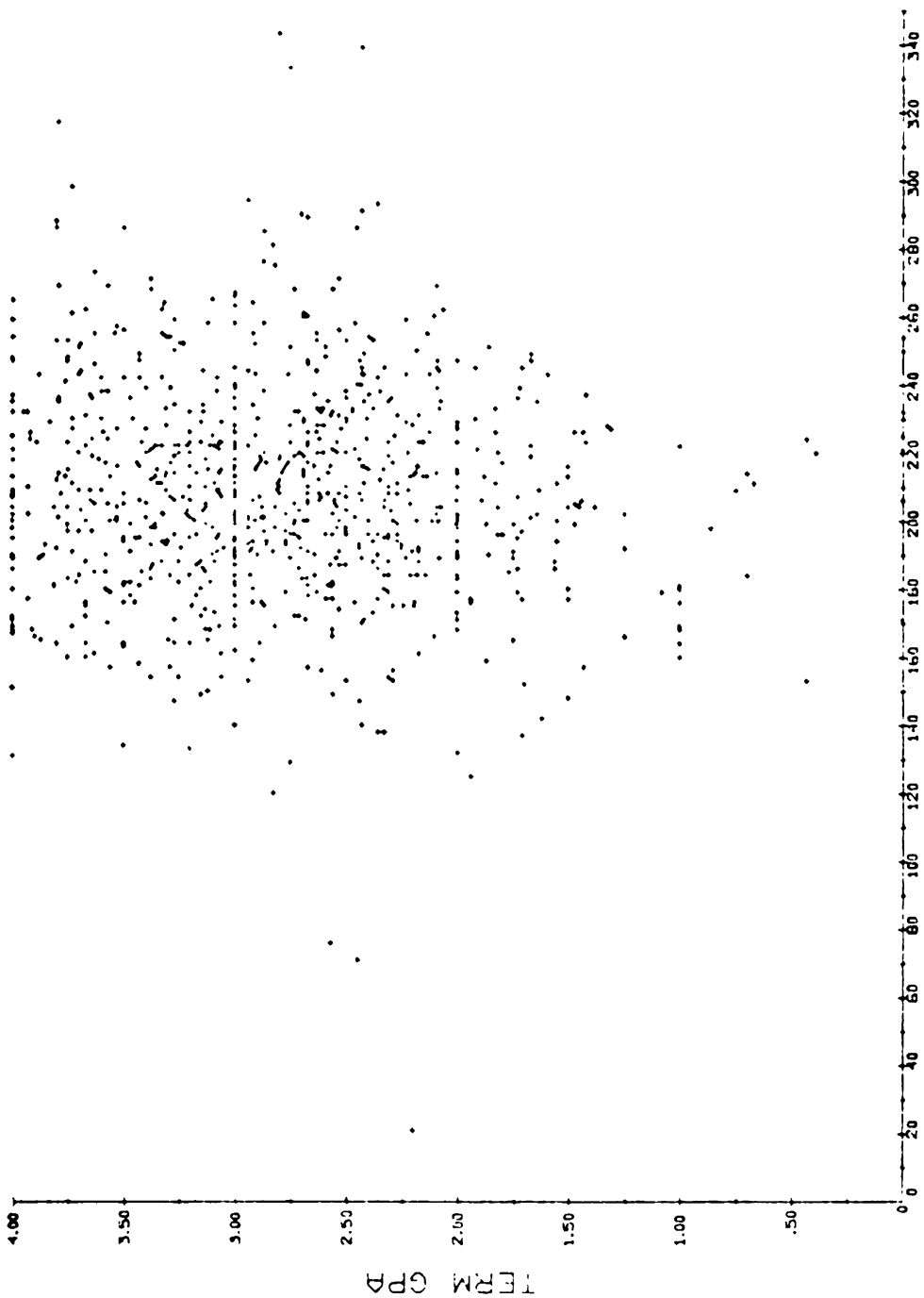

TERM GPA
4.00
3.50
3.00
2.50
2.00
1.50
1.00
.50
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
TOTAL POPULATION - TOTAL SCORE

Figure 4

INFERENCES AND SPECULATION

Overall satisfaction with the university environment as measured by the CSS$_4$ in this study did not demonstrate a significantly correlated relationship to the grade point average of these residence hall students. However, COMPENSATION and RECOGNITION Scale Scores (Table 1) as components in the measure of the total level of satisfaction revealed a relationship suggesting a link connecting the affective domain of the student to academic achievement. Also, the progression of the means of the TOTAL SATISFACTION Scores for the male students in this sample from 199.50 to 208.50 in conjunction with grade groupings from 1.00-1.49 to 3.50-4.00 (Table 2) suggests a relationship although the same consistent progression of the mean TOTAL SCORES for females in TABLE 3 is not evident. The mean of the TOTAL SCORES for females in the 1.00-1.49 grade group was 200.00 and rose to 218.94 for the 3.50-4.00 grade group. Variation at the 2.00-2.49 grade group and immediately above for females suggests that other dynamics may have been operative. Nevertheless, a basis has been established for further analysis of performance and satisfaction among college students.

As the results of any research study are contemplated, the strength and accuracy of any of the measures are susceptible to scrutiny. In this case, the use of the CSS$_4$

to measure the level of satisfaction with the college environment and the use of the grade point average to measure achievement and performance in the college setting are no less suspect. The CSSQ is an instrument designed to be administered to the broad range of college student personalities in all types of living situations. Some of the items may have seemed somewhat foreign to the residence hall students in this study but the rate of completed returns and the absence of written remarks on the answer sheets and test booklets reveal no particular difficulty. The distribution of 866 TOTAL SCORES in Figure 1 approach the semblance of a normal distribution and suggests no apparent skewness or problems. In addition, a comparison of the responses from selected floors within the residence halls seem to verify intuitive expectations of the satisfaction level. That is, the CSSQ generally reflected the satisfaction levels that were intuitively expected. Questions relative to the use of the grade point average as a measure of academic performance and achievement have been addressed in the literature review and nothing in this study adds or detracts from the credibility of grade point average as a measure.

The premise stated earlier in this study suggested that an individual will seek to achieve and maintain "correspondence" with the environment through responding

to the requirements of that environment while individual needs are being fulfilled. This reciprocal relationship when mutually satisfied provides the setting for continuing in the "correspondence" state. It is believed by this writer that the students in this study are generally in a state of "correspondence" with Oregon State University although a number of individuals may be found to be exceptions where their "satisfactoriness" is in question or their needs unsatisfied. Generally, however, requirements of the university setting are minimal and the intrinsic rewards so great and varied that the individual can feel relatively satisfied overall even though the personal g.p.a. varies extensively from the ability level or hovers around the minimal level. To accurately relate satisfaction to achievement levels of college students, one would need to build broad profiles in all endeavors and measure achievement on all facets of the profile. Then, satisfaction and performance might possibly show a relationship. It appears that college student attitudes are no less complex than those of the worker in business and industry. Similarly, the complexity of the intrinsic and extrinsic satisfiers are as pronounced in the university setting as elsewhere. Future research on relating performance to satisfaction in the university setting as well as in business and industry would aid understanding of the factors involved.

RECOMMENDATIONS

While the grade point average as one measure of academic achievement has not been proven to be related to overall student satisfaction as reflected by the CSSQ, the question of student performance in the college setting versus satisfaction with the environment as a parallel to worker performance versus satisfaction in the industrial setting is still to be confronted. What may be needed with future analyses of student satisfaction is a more complete and accurate profile of the student including values, interests, abilities, activities, goals and other measures of academic performance. Utilizing the profile, the relationship of satisfaction to performance in several areas of endeavor could be analyzed. The degree of satisfaction with respect to low and high levels on the components of the student profile could lead to a better understanding of the reward system to which the student is attuned.

As this study was restricted to students who were living in residence halls, a similar study of students in various types of living situations might provide clarification about the impact of the living environment upon the grade average and upon the general level of satisfaction. The presence or absence of greater variability in either g.p.a. or TOTAL SATISFACTION scores would suggest a degree

of sample bias in this study affecting the relationship sought. Possibly the greatest potential in the use of the CSSI in acquiring data applicable to environmental manipulation for college students would be the pre and post test technique. When administered prior to an educational change in procedure or routine and then again, as the time was appropriate, an analysis of the variation in responses could be most enlightening and helpful if the feelings of students became a part of the dynamics for further change and improvement. The pre and post test technique might also be applied to groups of students similar to the 200 in this study whose term g.p.a. varied ± 0.5 from the accumulative g.p.a. The follow-up after receipt of the grades might be very revealing particularly if some of the students were not appropriately reading the cues during the grading period.

Whatever the application of the results in this study to future research, the search must continue for a more accurate profile of student satisfaction with the college environment. This is crucial if higher education is to be adaptive to an ever-changing clientele whose numbers may dwindle when administrative responsiveness is self-serving or improperly focused.

BIBLIOGRAPHY

Astin, A. W. The college environment. Washington, D.C., American Council on Education, 1968.

Astin, A. W. The impact of dormitory living on students. Educational Record, 1973 (Summer), Vol. 54, No. 3.

Astin, A. W. Predicting academic performance in college; selectivity data for 2300 American colleges. New York: Free Press, 1971.

Astin, A. W. Further validation of the environmental assessment technique. Journal of Educational Psychology, 1963, Vol. 54, 217-226.

Astin, A. and Holland, J. The environmental assessment technique: a way to measure college environments. Journal of Educational Psychology, 1961, Vol. 52, 308-316.

Baird, L. L. The effects of college residence groups on students' self concepts, goals, and college achievement. Personnel and Guidance Journal, 1969 (June), Vol. 47, No. 10, 1015-1021.

Baird, L. L. The prediction of accomplishment in college: a study of achievement. Journal of Counseling Psychology, 1968.

Baker, S. R. The relationship between student residence and perception of environmental press. Journal of College Student Personnel, 1966, 7, 222-224.

Beal, Philip E., Williams, Daniel A. An experiment with mixed class housing assignments at the University of Oregon. Student Housing Research, ACUHO Research and Information Committee Newsletter, February 1968.

Bendat, J. S., and Piersol, A. G. Random data: analysis and measurement procedures. New York: Wiley-Interscience Inc., 1971.

Berdie, R. F. Likes, dislikes and vocational interests. Journal of Applied Psychology, 1943, 27, 180-189.

Berdie, R. F. The prediction of college achievement and satisfaction. Journal of Applied Psychology, 1944, Vol. 28, 239-245.

Berdie, R. F., Pilapil, B., and Im, I. J. Graduating seniors' satisfaction with the University. Minneapolis: University of Minnesota, Bureau of Institutional Research, 1968.

Berman, L. The glands regulating personality. New York: Macmillan, revised edition, 1928, pp. 341.

Betz, E. L. An investigation of job satisfaction as a moderator variable in predicting job success. Journal of Vocational Behavior, 1971, Vol. 1, 123-127.

Betz, E. L., Klingensmith, J. E., and Menne, J. W. The measurement and analysis of college student satisfaction. Measurement and Evaluation in Guidance, 1970, Vol. 3, 110-118.

Betz, E. L., Menne, J. W., Starr, A. M., and Klingensmith, J. E. A dimensional analysis of college student satisfaction. Measurement and Evaluation in Guidance, 1971, Vol. 4, 99-106.

Betz, E. L., Starr, A. M., and Menne, J. W. An assessment of college student satisfaction in ten public and private colleges and universities. Journal of College Student Personnel, 1972 (September), Vol. 13, 456-461.

Bevington, P. R. Data reduction of error analysis for physical sciences. New York: McGraw Hill Inc., 1969.

Bhatnagar, R. P. A study of some EPPS variables as factors of academic achievement. Journal of Applied Psychology, 1969, 53, 107-111.

Bloomberg, M. The prediction of scholastic success through the use of a forced-choice problems-and-attitude inventory. Dissertation Abstracts, 1955, p. 2566.

Bodelson, G. R. Environmental perceptions of freshman college students as related to selected ability and achievement levels. Doctoral dissertation, Bloomington, Indiana University, 216 Numb. Leaves, 1967. (Microfilm.)

Brayfield, A. H., and Crockett, W. H. Employee attitude and employee performance. Psychological Bulletin, 1955, Vol. 52, 396-424.

Califf, S. N. Perception of college environment of achieving and non-achieving freshmen. Doctoral dissertation, Claremont, Claremont Graduate School at University Center, 126 Numb. Leaves, 1967. (Microfilm.)

Chao, L. L. Statistics: methods and analysis. New York: McGraw Hill, Inc., 1969.

Chickering, A. W. Commuting versus resident students. San Francisco: Jossey-Bass, 1974.

Chickering, A. W. The experience of the college questionnaire. Saratoga Springs, New York, 1970.

Claunch, W. Cognitive and motivational characteristics associated with concrete and abstract levels of conceptual complexity. Unpublished doctoral dissertation, Princeton University, 1964.

Crew, J. L., and Giblette, J. Academic performance of freshmen males as a function of residence hall housing. Journal of College Student Personnel, 1965, Vol. 6, 167-170.

Cronbach, L. J. The two disciplines of scientific psychology. American Psychologist, 1957, 12, 671-684.

Cross, K. Patricia. Assessment of student development. Paper presented at the annual meeting of the American College Personnel Association (50th Atlanta, Georgia, March '75) 21 pp.

Davie, J. S. "Satisfaction and the college experience." In B. Wedge (Ed.), Psychological problem of college men. New Haven, Connecticut: Yale University Press, 1958.

Dawis, R. V., Lofquist, L. H., and Weiss, D. J. A theory of work adjustment. (A revision.) Minnesota Studies in Vocational Rehabilitation, 1968, p. 23.

Dewey, E., and Bentley, A. F. Knowing and the known. Boston: Beacon, 1949.

Draper, N. R. Applied regression analysis. New York: Wiley and Son, 1967.

Dressel, P. L., and Lehmann, I. J. Impact of higher education on student attitudes, values and critical thinking abilities. Educational Records, 1965, Vol. 46, 248-258.

Elton, C. F., and Bate, W. S. The effect of housing policy on grade point average. Journal of College Personnel, 1966 (March), 73-77.

Fairchild, E. Evaluating residence halls through trifocals. Journal of College Student Personnel, 1963, Vol. 4, 171-176.

Feder, Daniel. Factors which affect achievement and its production at the college level. Journal of American Association of College Registrars, 1940, 15, 107-117.

Green, George E. Instrumentality theory of work motivation: some experimental results and suggested modifications. Journal of Applied Psychology, Monograph, Vol. 53, April 1969.

Guenther, W. C. Concepts of statistical inference. New York: McGraw Hill, 1965.

Hersey, R. B. Workers' emotions in shop and home. Philadelphia. University of Pennsylvania Press, 1932, 440 pp.

Herzberg, F., Mausner, B., Peterson, R. D., and Capwell, D. F. Job attitudes: review of research and opinion. Pittsburg: Psychological Services, 1957.

Hoppock, R. Job satisfaction. New York and London: Harper and Brothers, 1935.

Hountras, Peter T., and Brandt, Kenneth R. Relation of student residence to academic performance in college. Journal of Educational Research, 63, 3, April 1970, p. 351-354.

Jahoua, M. A social-psychological approach to the study of culture. Human Relations, 1961, 14, 23-30.

Jencks, C. S., and Reisman, D. In Sanford, Nevitt (Ed.), Patterns of residential education: a case study in the American college. New York: John Wiley, 1962.

Johnson, R. W., and Kurpius, D. J. A cross-sectional and longitudinal study of students' perceptions of their college environment. The Journal of College Student Personnel, 1967, Vol. 8, 199-203.

Keith, J. A. The relationship of the congruency of environmental press and student need systems to reported personal satisfaction and academic success. Dissertation Abstracts, 1965, 25, 7081.

Kelly, J. G. Ecological constraints on mental health services. American Psychologist, 1966, 21, 535-539.

Korman, Abraham K. Environmental ambiguity and locus of control as interactive influences on satisfaction. Journal of Applied Psychology, 1971, 55, 339-342.

Korman, Abraham K. Relevance of personal need satisfaction for overall satisfaction as a function of self-esteem. Journal of Applied Psychology, 1967, 51, 533-538.

Lauterback, C. G., and Vielhaber, D. P. Need - press and expectation press indices as predictors of college achievement. Educational and Psychological Measurement, 1966, Vol. 26, 965-972.

Landis, H. L. Dissonance between student and college variables related to success and satisfaction. Dissertation Abstracts, 1964, 25, 1047.

Lavin, David E. The prediction of academic performance. Russell Sage Foundation, New York, 1965.

Lenning, Oscar T. et al. The many faces of college success and their non-intellective correlates. The published literature through the decade of the sixties. Monograph #15, American College Testing Program, Iowa City, Iowa, 1974, 554pp.

Levine, E. L., and Weitz, J. Job satisfaction among graduate students: intrinsic versus extrinsic variables. Journal of Applied Psychology, 1968, Vol. 52, 263-271.

Locke, E. A. Job satisfaction and job performance, a theoretical analysis. Organizational Behavior and Human Performance, 1970, 5, 484-500.

Lunnebourg, Patricia. Longitudinal criteria for college achievement predicted from aptitude achievement and interest measures. Educational Assessment Center Report, Washington University, Seattle, October, 1975.

Malleson, N. Operational research in the university. British Medical Journal, 1959, 1, 1031-1035.

Martin, R. D. Freshmen satisfaction with college. Journal of College Student Personnel, 1968, Vol. 9, 382-383.

Miles, R. E., Porter, L., and Craft, J. A. "Three models of leadership attitudes" in Paul Pigors, Charles Myers and F. T. Malm, Management of Human Resources (New York, MacGraw-Hill, 1961), pp. 48-49.

Moos, Rudolph H. Evaluating treatment environments: A social-ecological approach, New York, Wiley, 1974.

Murray, H. A. Explorations in personality. New York: Oxford University Press, 1938.

Nasatir, D. A contextual analysis of academic failure. The School Review, 1963 (Autumn), Vol. 71, 290-298.

Netusil, A. J., and Hallenback, D. A. Assessing perceptions of college satisfaction. National Association of Student Personnel Administrators Journal, 1975 (Spring), No. 4, 263-268.

Newcomb, T. M. "Student peer-group influence." In Personality factors on the college campus. The Hogg Foundation for Mental Health, The University of Texas, Austin, Texas, 1962, (p. 85).

Newcomb, T. M. The prediction of interpersonal attraction. American Psychologist, 1956, 11, 575-586.

Newcomb, T. M., and Feldman, K. A. "The input of colleges upon their students." A report to the Carnegie Foundation for the Advancement of Teaching, 1968.

Pace, C. R. College and university environment scales technical manual (2nd edition). Princeton, New Jersey, Educational Testing Services, 1969.

Pace, C. R., and Stern, G. G. An approach to the measurement of psychological characteristics of college environments. Journal of Educational Psychology, 1958, Vol. 49, 269-277.

Peak, H. Attitude and motivation. In M. R. Jones (Ed.) Nebraska Symposium on Motivation, Lincoln, University of Nebraska Press, 1955.

Pervin, L. A. A twenty college study of student and college interaction using TAPE (Transactional Analysis of Personality and Environment): rationale, reliability and validity. Journal of Educational Psychology, 1967, Vol. 58, 290-302.

Pervin, L. A. Performance and satisfaction as a function of individual environment fit. Psychological Bulletin, 1968, 69, 56-58.

Pervin, L. A. Satisfaction and perceived self-environment similarity: a semantic differential study of student-college interaction. Journal of Personality, 1967, 35, 623-634.

Pervin, L. A., and Rubin, D. B. Student classification with college and the college dropout: a transactional approach. Journal of Social Psychology, 1967, Vol. 72, 285-295.

Porter, L., and Lawler, E. E. Managerial attitudes and performance. (Homewood, Illinois: Irwin, 1968) p. 157.

Prusok, R. E., and Walsh, W. B. College students residence and academic achievement. The Journal of College Student Personnel, 1964 (March), Vol. 4, 180-184.

Raab, N. E. Congruence and dissonance between need and press in determining satisfaction or dissatisfaction in the university environment. Dissertation Abstracts, 1963, 24, p. 1923.

Rand, L. P. Effect on college choice satisfaction of matching students and colleges. Personnel and Guidance Journal, 1968, Vol. 41, 34-39.

Reeves, T. G. The relationship between accuracy of perception of environment and achievement, attrition, satisfaction with the environment and sex of first semester freshmen. Doctoral dissertation, Commerce, East Texas State University, 1968, 152 Numb. Leaves. (Microfilm.)

Roberts, B. B. "Academic Performance of Off-Campus Freshmen Men at Oregon State University." Unpublished Report, 1963-64.

Roberts, K., Miles, R. E., and Blankenship, L. V. Organizational leadership satisfaction and productivity: a comparative analysis. Academy of Management Journal, 1968, 11:4, 401-414.

Rock, R. T. A study of the constancy of responses to the items on the Strong vocational interest blank. Psychological Bulletin, 1934, 31, 705-708.

Sanford, N. "Factors related to the effectiveness of student interaction with the college social system." In Barger, B., and Hall, E. E. (Eds.). Higher Education and Mental Health. Proceedings of conference, University of Florida, Gainesville, 1963.

Schoen, M. P. The campus climate: student perception and faculty idealism. The Journal of Educational Research, 1966, Vol. 60, 3-7.

√Schroeder, Wayne L., and Sledge, George W. Factors related to collegiate academic success. Journal of College Student Personnel, 1966, 7, 97-104.

Schultz, L. K. "Personality correlates of college student satisfaction." Unpublished M.S. Thesis, Iowa State University, 1972.

Shaw, Marvin E., and Blum, J. Michael. Group performance as a function of task difficulty and the group's awareness of member satisfaction. Journal of Applied Psychology, 1965, 49, 151-154.

Smallwood, F. D., and Klas, L. D. A comparison of academic, personal, and social effects of four different types of university residential environments. The Journal of College and University Student Housing, 1973 (Fall), Vol. III, No. 2.

Snyder, B. R. Adaptation, education and emotional growth. In L. A. Pervin, L. E. Reik, and W. Dalrymple (Eds.), The College Dropout and the Utilization of Talent, Princeton: Princeton University Press, 1966, pp. 155-175.

Standing, G. R., and Parker, C. A. The college characteristics index as a measure of entering students preconceptions of college life. The Journal of College Student Personnel, 1964, Vol. 6, 2-6.

Stark, J. S. Providing consumer protection for students, in New Directions For Higher Education, Jossey-Bass, Inc., Vol. IV, Spring 1976.

Starr, A. M., Betz, E. L., and Menne, J. W. College student satisfaction questionnaire manual. Ames, Iowa: Central Iowa Associates, Incorporated, 1971.

Starr, A. M., Betz, E. L., and Menne, J. W. Differences in college student satisfaction: academic dropouts, nonacademic dropouts and nondropouts. Journal of Counseling Psychology, 1972, Vol. 19, 318-322.

Stern, G. G. Congruence and dissonance in the ecology of college students. Student Medicine, 1960, 8, 304-339.

Stern, G. G. People in context: measuring person-environment congruence in education and industry. New York: Wiley, 1970.

Stern, G. G. "Environments for learning." In Nevitt Sanford (Ed.), The American College, New York: Wiley, 1962.

Stone, L. A., and Foster, J. M. Academic achievement as a function of psychological needs. Personnel and Guidance Journal, 1964, 43, 52-56.

Sturtz, S. A. An analysis of age differences in college student satisfaction. Journal of College Student Personnel, 1971, Vol. 12, 220-222.

Summerskill, J. Dropouts from college: directions in future research, chapter 19. The American College, Sanford, Nevitt (Ed.) John Wiley and Sons, Inc., New York, 1967.

Super, D. Career development: self-concept theory. New York, College Entrance Examination Board, 1963.

Sutermeister, Robert A. Employee performance and need satisfaction--which comes first? California Management Review, 1971, 13, 43-47.

Taylor, R. G. Effects of living environment on achievement and study habits. St. Paul, Minnesota: American College Personnel Association, University of Minnesota, Student Counseling Bureau, 1970.

Thistlewaite, D. L. College press and student achievement. Journal of Educational Psychology, 1959, 50, 183-191.

Tuckman, B. W. Conducting educational research. New York: Harcourt Brace Jovanovich, Inc., 1972.

Vroom, V. H. Work and motivation. New York: Wiley, 1964.

Walsh, Bruce W. Theories of person-environment interaction: implications for the college student. The American College Testing Program, Monograph Ten, 1973, p. 218.

Wanos, J. P. A causal-correlational analysis of job satisfaction and performance relationship. Journal of Applied Psychology, 1974, 59, 139-144.

Webb, S. C. The relations of college grades and personal qualities considered within two frames of reference. Multivariate Behavioral Research Monograph, 1967, No. 67-2.

Weiss, D. J., Dawis, R. V., England, G. W., and Lofquist, L. H. Manual for the Minnesota Satisfaction Questionnaire. Minnesota Studies in Vocational Rehabilitation, 1967, (p. 22).

APPENDIX A

College Student Satisfaction Questionnaire

Instructions to Students

Test Items

Answer Sheet

DO NOT WRITE ON THIS BOOKLET.

COLLEGE STUDENT SATISFACTION QUESTIONNAIRE

(CSSQ)

Form C - 1971 Revision

By Ellen L. Betz and John W. Menne
Iowa State University
and John E. Klingensmith
Arizona State University

DIRECTIONS
FOR
RESIDENCE HALL STUDENTS

P L E A S E DISREGARD THE DIRECTIONS ON THE OPPOSITE PAGE

This booklet contains 70 items regarding satisfactions and dissatisfactions of college students. It's purpose is to give you a chance to tell how you feel about Oregon State University . . . what things you are satisfied with and what things you are not satisfied with.

HOW TO FILL OUT THE ANSWER SHEET

1. Record ONLY your Social Security Number in the upper right Grid of the answer sheet in the spaces 1 thru 9, directly under the words "Identification Number".

2. Using a # 2 (soft lead) pencil, fill in the Grid by blacking in the space that corresponds to your Social Security Number at the top of the column.

3. In the questionnaire booklet, you will find 70 statements about Oregon State University.

   READ each statement carefully.

   DECIDE how satisfied you are with that aspect of the University described in the statement.

4. MARK your response on the answer sheet by blackening the space 1, 2, 3, 4, or 5 which best represents how satisfied you are. (First impressions are best).

   1 -- If you are very DISSATISFIED.

   2 -- If you are SOMEWHAT DISSATISFIED.

   3 -- If you are SATISFIED, no more, no less.

   4 -- If you are QUITE SATISFIED.

   5 -- If you are VERY SATISFIED.

PLEASE NOTE: Be sure to use a No. 2 (soft lead) pencil, NO PENS.

The items on the answer sheet are numbered ACROSS THE PAGE from LEFT to RIGHT not from top to bottom.

Key

1 means: I am VERY DISSATISFIED.
2 means: I am SOMEWHAT DISSATISFIED
3 means: I am SATISFIED, no more, no less.
4 means: I am QUITE SATISFIED.
5 means: I am VERY SATISFIED.

INDICATE HOW SATISFIED YOU ARE WITH:

1. The opportunity to make close friends here.
2. The amount of work required in most classes.
3. The way teachers talk to you when you ask for help.
4. The competence of most of the teachers in their own fields.
5. The amount of study it takes to get a passing grade.
6. The chances of getting a comfortable place to live.
7. The chance you have of doing well if you work hard.
8. The amount of personal attention students get from teachers.
9. The chance "to be heard" when you have a complaint about a grade.
10. The friendliness of most students.
11. The help that you can get when you have personal problems.
12. The availability of good places to live near the campus.
13. The ability of most advisors in helping students develop their course plans.
14. The cleanliness of the housing that is available for students here.
15. The chance to take courses that fulfill your goals for personal growth.
16. The kinds of things that determine your grade.
17. The preparation students are getting for their future careers.
18. The chance to have privacy when you want it.
19. The chance to work on projects with members of the opposite sex.
20. Teachers' expectations as to the amount that students should study.
21. The availability of good places to study.
22. The fairness of most teachers in assigning grades.
23. The interest that advisors take in the progress of their students.
24. The places provided for students to relax between classes.

Key

1 means: I am VERY DISSATISFIED.
2 means: I am SOMEWHAT DISSATISFIED.
3 means: I am SATISFIED, no more, no less.
4 means: I am QUITE SATISFIED.
5 means: I am VERY SATISFIED.

INDICATE HOW SATISFIED YOU ARE WITH:

25. The social events that are provided for students here.
26. Teachers' concern for students' needs and interests.
27. The chance to get scheduled into the courses of your choice.
28. The activities and clubs you can join.
29. The difficulty of most courses.
30. The chance to get help in deciding what your major should be.
31. The chance to get acquainted with other students outside of class.
32. The availability of your advisor when you need him.
33. The chances to go out and have a good time.
34. The pressure to study.
35. The chance of getting a grade which reflects the effort you put into studying.
36. The quality of the education students get here.
37. The number of D's and F's that are given to students.
38. The concern here for the comfort of students outside of classes.
39. The things you can do to have fun here.
40. The chance for a student to develop his best abilities.
41. The chance of having a date here.
42. The chances of getting acquainted with the teachers in your major area.
43. The chance to explore important ideas.
44. The quality of the material emphasized in the courses.
45. The chance of getting into the courses you want to take.
46. The noise level at home when you are trying to study.
47. The amount of time you must spend studying.
48. The availability of comfortable places to lounge.

Key

1 means: I am VERY DISSATISFIED.
2 means: I am SOMEWHAT DISSATISFIED.
3 means: I am SATISFIED, no more, no less.
4 means: I am QUITE SATISFIED.
5 means: I am VERY SATISFIED.

INDICATE HOW SATISFIED YOU ARE WITH:

49. The chances for men and women to get acquainted.

50. The counseling that is provided for students here.

51. The chance to prepare well for your vocation.

52. The chance to live where you want to.

53. The chance you have for a "fair break" here if you work hard.

54. The friendliness of most faculty members.

55. The chances to meet people with the same interests as you have.

56. What you learn in relation to the amount of time you spend in school.

57. The choice of dates you have here.

58. The amount of study you have to do in order to qualify someday for a job you want.

59. The kinds of things you can do for fun without a lot of planning ahead.

60. The willingness of teachers to talk with students outside of class time.

61. The places where you can go just to rest during the day.

62. The campus events that are provided for students here.

63. The practice you get in thinking and reasoning.

64. Your opportunity here to determine your own pattern of intellectual development.

65. The chance to participate in class discussions about the course material.

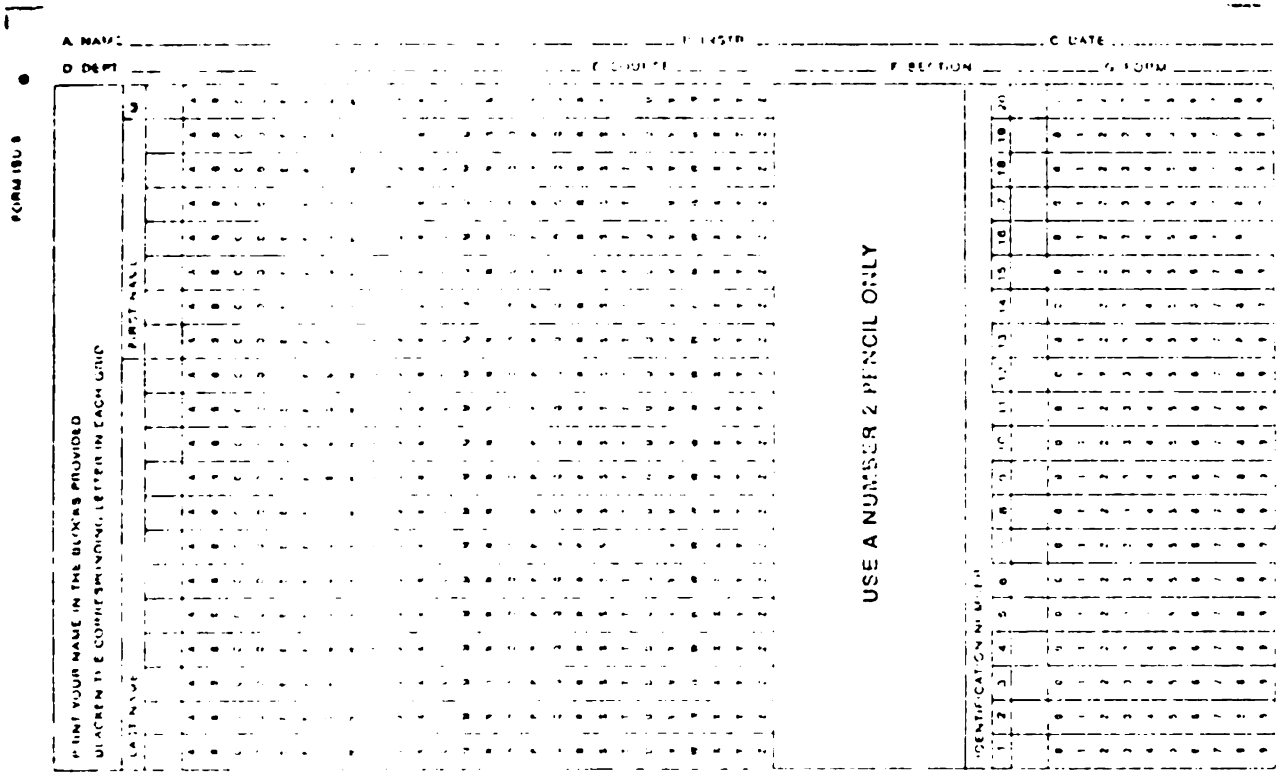
66. The activities that are provided to help you meet someone you might like to date.

67. The sequence of courses and prerequisites for your major.

68. The availability of quiet study areas for students.

69. The chance you have to substitute courses in your major when you think it is advisable.

70. The appropriateness of the requirements for your major.



ANSWER ACROSS PAGE

USE #2 PENCIL

ANSWER ACROSS PAGE

USE #2 PENCIL

ANSWER ACROSS PAGE

APPENDIX B

Explanation Letter to Students

Head Resident Instructions

Instructions for Resident Assistants

Student Housing and
Residence Programs

Oregon State University

Corvallis, Oregon 97331 (503) 754-4771

Dear Student:

How a student feels about his/her experiences in the college environment can be a potent resource for change. A research project is underway at Oregon State University to analyze student satisfaction in relation to academic achievement with the hope that a correlation will lend credence for administrative response in improving factors that affect student satisfaction.

As the chief administrator in Student Housing and the Principal investigator in this research project, I am limiting the study to residence hall students whose total involvement in the campus environment can provide the most consistent response in the measure of student satisfaction.

You are being invited to participate in this research project by completing the 7-part student satisfaction questionnaire and allowing the results to be paired with your level of academic achievement. The individual results will be kept confidential and reported only in group form.

A PARTICIPATION AGREEMENT appears on the reverse side of this letter. I ask you to complete it and return to your Resident Assistant. Thank you.

Sincerely,

M. EDWARD BRYAN
Director of Student Housing
and Residence Programs

MEB/LJp

Student Housing and Residence Programs

Oregon State University

Corvallis, Oregon 97331 (503) 754-4771

STUDENT SATISFACTION/ACHIEVEMENT SURVEY

HEAD RESIDENT
INSTRUCTIONS

Please see that each of your Resident Assistants receives:

1. A packet of materials
2. A bundle of # 2 pencils
3. An RA Instruction sheet

Each packet has a large red number on it. Please record the packet number and name of the Resident Assistant below. Advise each Resident Assistant of a mutually agreeable time for the return of the packets.

_____
HALL NAME

PACKET NO.	RESIDENT ASSISTANT NAME	FLOOR
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

PLEASE return this sheet with all materials directly to me. (I'll be happy to come by and pick them up).

In a project of this sort, many questions arise. Please feel free to call me at home 753-1090 or at the office 754-4771 at any time. It is very important to me and I'll be glad to come to the hall to help with it.

Your assistance will be appreciated.

MEB/ljp

Student Housing and Residence Programs

Oregon State University

Corvallis, Oregon 97331 (503) 754-4771

STUDENT SATISFACTION/ACHIEVEMENT SURVEY

INSTRUCTIONS
FOR
RESIDENT ASSISTANTS
ON
SURVEY PROCEDURES

For ease in handling the survey of Student Satisfaction, a minimum of writing activity and record keeping is planned.

Packet materials include:
- 20 Explanatory letters to students and Agreement Form (on back of letter)
- 20 Blue Instruction Sheets (In Test Booklets)
- 20 Machine Scorable Answer Sheets (In Test Booklets)
- 20 Test Booklets
- 20 # 2 Pencils

STEPS:

1. Find 20 willing participants in your group (Random selection preferred)
2. Hand each participant an explanatory letter, ask that person to read the letter and complete the Agreement Form on the back.
3. Upon return of the Agreement Form, hand the individual the test booklet and ask immediate completion of the 70 items with responses marked on the answer sheet.
4. Retrieve the Test Booklet, Answer Sheet, Blue Instruction Sheet and PENCILS. (Use Agreement Forms to assure return of all test materials)
5. Return all materials to Head Resident.

THANK YOU FOR YOUR HELP!

MEB/ljp

APPENDIX J

Research Participation Agreement Form

RESEARCH PARTICIPATION AGREEMENT

My signature below attests to my willingness to participate in a research project on student satisfaction and academic achievement at Oregon State University. I understand that the following agreements will be strictly observed:

1. My active participation will be limited to the completion of the self-administered [illegible]-item COLLEGE STUDENT SATISFACTION QUESTIONNAIRE.

2. Only my Social Security Number will appear on the questionnaire for identifying purposes and my name will never appear with data.

3. Only group results will be reported; no identification of individuals will be made.

4. In signing this agreement, permission is given to utilize academic data (class, school, current G.P.A., and cumulative G.P.A.) obtained from the Registrar's computer tapes in a statistical analysis of these factors and satisfaction scores obtained from the test.

I AGREE TO PARTICIPATE IN THIS SATISFACTION-ACHIEVEMENT STUDY

YES ____ NO ____

______________________________ SIGNATURE

______________________________ SOCIAL SECURITY NUMBER

______________________________ RESIDENTIAL HALL

______________________________ ROOM NUMBER

PLEASE RETURN TO YOUR RESIDENT ASSISTANT AS SOON AS POSSIBLE.

APPENDIX D

Request For Support Of Computing Services

Abstract

Response Letter

Second Request For Support Of Computing Services

CSU Computer Services Extension Request

Second Response Letter

Submit 2 copies **Please Print or Type**

REQUEST FOR SUPPORT OF COMPUTING SERVICES FROM
OREGON STATE UNIVERSITY COMPUTER CENTER

Name M. Edward Bryan Date 10 November, 1975

Department Housing Faculty Member X Student ____

Funds Requested $ 750.00/00

NOTE: This figure should not include data preparation such as keypunching.

Title of Project or Research Activity Satisfaction/Achievement Correlati

Brief description of computing to be done Statistical Moment and Regressi

Analysis of Student Population Satisfaction/Achievement Data

Approximate period for which services are requested (month/year).

From 1 December, 1975 To 1 April, 1976

Is this research otherwise funded: Yes ___ (Indicate source below),

No X

Has the Computer Center been consulted in preparation of estimate?

Yes If yes, give name of consultant

Current unsponsored research job number this grant is to be placed under, if any

Signature
(Student)

Signature
(Major Prof)

Major Prof (typed) Dr. Mr. M. Edward Bryan Ms.

(If request is on behalf of a student, it must be signed by both student and major professor.)

- -

A brief description of the project (two copies) should accompany this request. The computational services should be outlined in sufficient detail that an estimate of computer time can be made in consultation with the Computer Center.

If the request is on behalf of a student, the nature of the student's participation relative to his academic program and to the sponsoring faculty member's research activities should be described.

ABSTRACT

A study to quantitatively assess the degree of correlation between the level of student satisfaction and student achievement level is proposed. The College Student Satisfaction Questionnaire (CSSQ), a 70-item instrument, will be utilized to poll the sample populations under consideration. The measures of satisfaction fall into five broad base categories: working conditions, compensation, quality of education, social life and recognition.

An attempt will be made to utilize cumulative grade point distributions as an independent measure of student achievement.

Data analysis will consist of standard statistics, means, standard deviations, skewness and kurtosis. Correlation techniques will be applied to similar and dissimilar sample populations. Time base profiles will be constructed for populations and individual members of given populations. Numerous SORT/MERGE operations will also be necessary. Some magnetic tape handling and graphic production is assumed.

An estimated $750.00 will be utilized on computer-related expenditures.

Computer Center | Oregon State University | Corvallis, Oregon 97331 (503) 754-2494

December 11, 1975

Mr. M. Edward Bryan
Housing
Oregon State University

Dear Mr. Bryan:

Your recent request for computer time for unsponsored research has been reviewed and approved. We are pleased to inform you of the following award:

Name:	M. Edward Bryan
Student name:	----
Date of request:	November 10, 1975
Title of project:	Satisfaction/Achievement Correlation
Amount approved:	$500.00

If you will contact Gayle, MCC 140, she will arrange a job number for this project.

Please note that it will be your responsibility to cancel all files and tapes charged to your job number when this project is completed.

We look forward to serving you at the Computer Center, and trust you will let us know if we may be of further help.

Yours very truly,

Larry C. Hunter

Larry C. Hunter
Director

cc: Dr. Roy A. Young
Gayle Zandofsky

Submit two copies

Oregon State University Computer Center

REQUEST FOR SUPPORT OF COMPUTING SERVICES
FOR UNSPONSORED RESEARCH

Please type or print.

Name (Dr. / Mr. / Ms.) M. Edward Bryan faculty Date September 21, 1976

Name _____ Department _____
student or second faculty member

Funds Requested $ 750.00 NOTE: This figure should not include data preparation such as keypunching.

Title of Project Satisfaction/Achievement Correlation

Is this research otherwise funded? X No ____ Yes (indicate source)

_____

Has the Computer Center been consulted in preparation of estimate? Yes

If yes, give name of consultant James Simpson (Oceanography)

Current unsponsored research job number this grant is to placed under, if any 75[illegible]7 BRYA. Previous funds granted $ 500.00.

Signed _____
Major Professor

Signed _____
( ) student or ( ) second faculty member

If request is on behalf of a student it must be signed by both student and major professor.

- -

A brief description of the project (two copies, typed or printed) should accompany this request. This should include the aim and scope of the project, as well as an outline of computational services needed in sufficient detail so that an accurate estimate of computer time can be made.

Students should state if this is for thesis work, and if so, for which degree. (M.S., Ph.D., etc.)

Faculty members who are applying for support of their own research should state if research is expected to lead to publication or to proposals for funded grants. Faculty who have received previous unsponsored research support should state if the research led to published articles, grants from other agencies, or other significant results.

OSU COMPUTER SERVICES EXTENSION REQUEST

Linear regression analysis on 70 sets of data will be performed. Both weighted and unweighted regression models will be calculated. Weights will be constructed from the number of points in the sample as well as the reciprocal of the variance. A total of 270 regressions are anticipated with a projected costs of $1.00 to $2.00 per regression.

Additional graphic requirements are anticipated. Histogram plots of the sample populations and sub-populations will be done using COMPLOT and the Gerbes plotting devise.

Additional tests for normalcy will be performed on the parent and sub-populations. A total of $750.00 in additional computer related costs are anticipated to successfully complete this project.

The result will be published in a doctoral dissertation and through dissertation abstracts as well as summary articles in appropriate journals. In addition there will be direct feedback to Oregon State University through appropriate administrative channels.

Computer Center Oregon State University Corvallis, Oregon 97331 (503) 754-2424

October 4, 1976

Mr. M. Edward Bryan
Student Housing
Oregon State University

Dear Mr. Bryan:

We have your request for additional computer time, and are pleased to notify you of the following action by the committee on unsponsored research:

Amount of award:	$750.00
Job number:	758137
Name:	M. Edward Bryan
Student name:	----
Date of request:	September 21, 1976
Title of project:	Satisfaction/Achievement Correlation

You are urged to avail yourself of discount rates on computing done during second and third shift hours at the Computer Center--evenings, nights and week-ends.

As you are aware, responsibility for cancelling files and tapes upon completion of the project rests with you. Gayle, MCC 140, will be glad to add time to your job number when you present this letter.

Please let us know if we may be of further assistance.

Yours very truly,

Thomas L. Yates
Director

cc: Dr. John V. Byrne
Gayle Zandofsky

RECEIVED OCT 6 1976

APPENDIX E

Review Of Literature On The Relationship of Performance To Satisfaction

REVIEW OF LITERATURE ON THE RELATIONSHIP OF PERFORMANCE TO SATISFACTION

Theories relative to the relationship of performance to satisfaction are still evolving. No unanimity of opinion exists and definitive statements are subject to controversy. Brayfield and Crockett established in 1955 that "satisfaction with one's position in a network of relationships need not imply strong motivation to outstanding performance within that system" (Brayfield and Crockett, 1955). Roberts et al. conclude "there is no present technique for determining cause and effect of performance and satisfaction" (Roberts, Miles and Blankenship, 1968). Porter and Lawler state that the greatest future research need is for data to provide evidence on the direction of causality in their model relating performance and satisfaction (Porter and Lawler, 1968).

A number of authors state or imply that satisfaction contributes to improved performance and productivity. Herzberg et al. examined studies in which the effect of job attitudes on productivity was measured. They found "that in 54 percent of the reported surveys high morale was associated with high productivity" although the correlations in many of these studies were low; they concluded there was "frequent evidence for the often suggested opinion that positive job attitudes are favorable to increased productivity" (Herzberg, 1957, p. 103).

Other authors state or imply that outstanding performance leads to greater satisfaction of needs. Miles, Porter and Craft state that work satisfaction may improve as a by-product of subordinates making full use of their resources; that satisfaction is intrinsic in the work; that subordinates get a major portion of their rewards merely from their own feelings of accomplishment and from doing the job well (Miles, Porter, and Craft, 1961).

Locke, in a theoretical analysis of the relationship between job performance and job satisfaction summarized the progress of theory development at that time (1971) by saying:

> "Although the inadequacy of the old bromide 'the happy worker is a productive worker' is now widely recognized, no clear conceptualization of the relationship between satisfaction and productivity has yet been proposed" (Locke, 1970).

He suggested that satisfaction should be regarded primarily as a product of performance and only very indirectly as a determinant of performance. Past satisfaction, Locke says, reflects the degree to which one's past actions attained or failed to attain one's values and thus serves as an incentive to maintain one's course of action or change it (Locke, 1970).

According to Sutermeister (1971), the most complete model of a performance-satisfaction relationship has been developed by Porter and Lawler. Their model asserts that if an individual is attracted by the value of the reward

he envisions for a higher level of performance, and if it is perceived as highly probable that increased effort will lead to that reward, he will increase his effort. And, if he has the required abilities and accurate role perceptions, his performance or accomplishment will improve. If the intrinsic and extrinsic reward he receives from improved performance are perceived as equitable, then satisfaction will result. Satisfaction is the difference between perceived equitable and actual rewards (Sutermeister, 1971). On this model Sutermeister applied the concept of a series of cycles varying with each individual. A cycle would end for the individual when the reward (intrinsic or extrinsic) was received. To the cycle concept Sutermeister (1971) added the human life cycle with fluctuating aspiration levels according to age.

There is little evidence, however, that the Porter-Lawler model with the Sutermeister refinements has satisfied the theorists or allayed the controversy. A recent research study done by Manos in 1974 with a small group (80) of telephone operators (women) caused the author to conclude "that performance causes intrinsic satisfaction and extrinsic satisfaction causes performance (Manos, 1974).

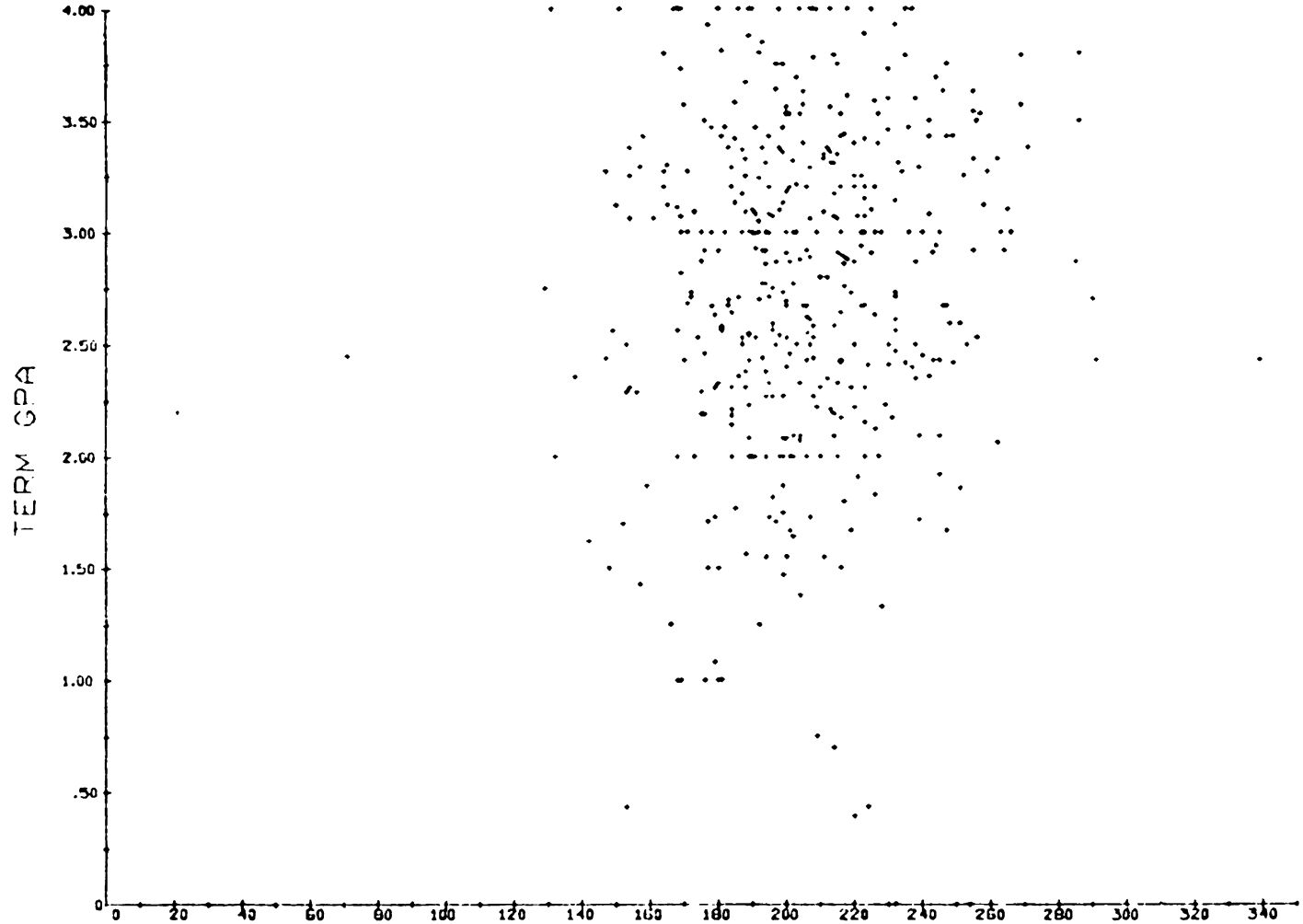
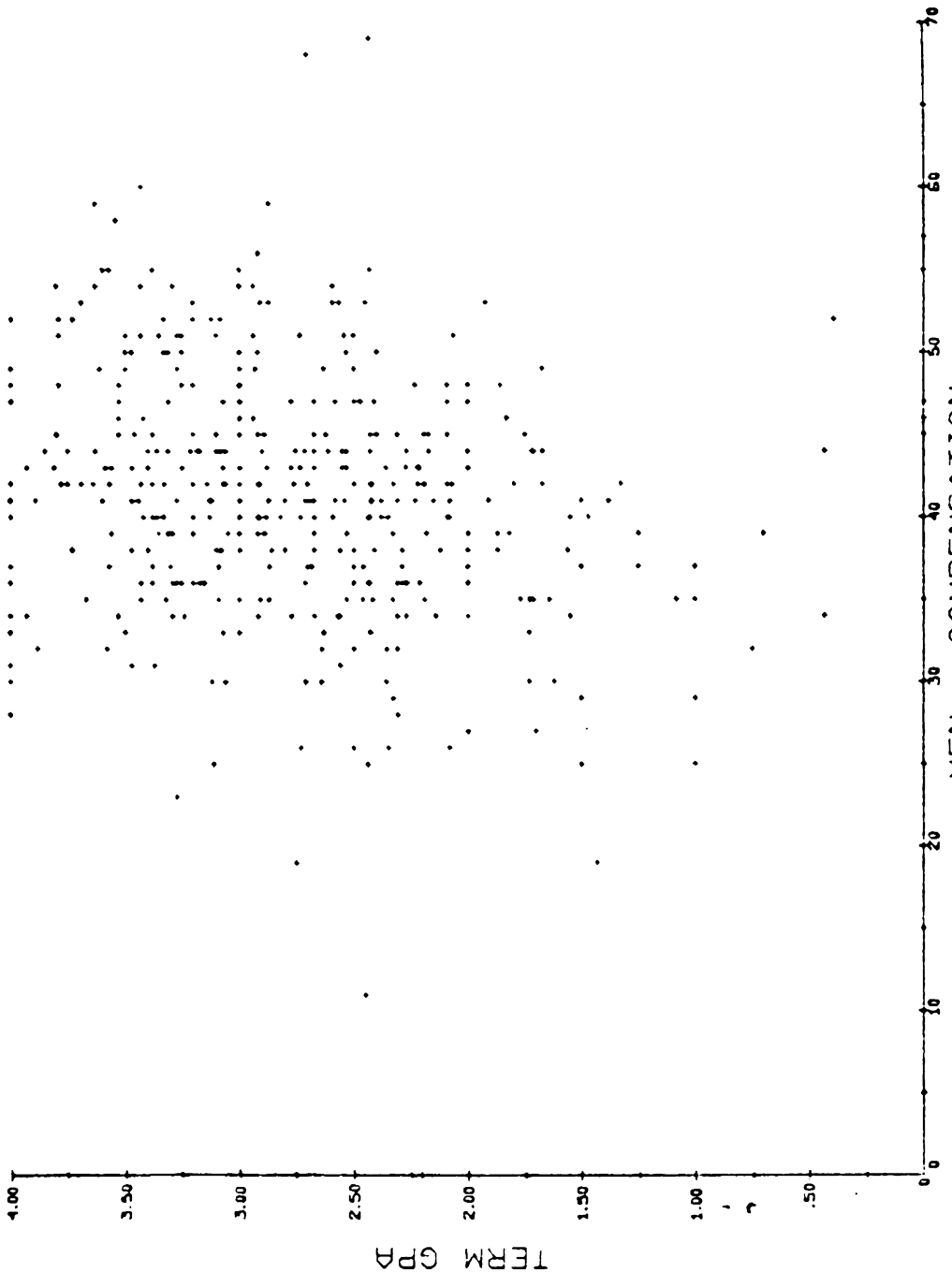

TERM GPA
4.00
3.50
3.00
2.50
2.00
1.50
1.00
.50
0
0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340
MEN - TOTAL SCORE

Figure 5



MEN - COMPENSATION
Figure 6

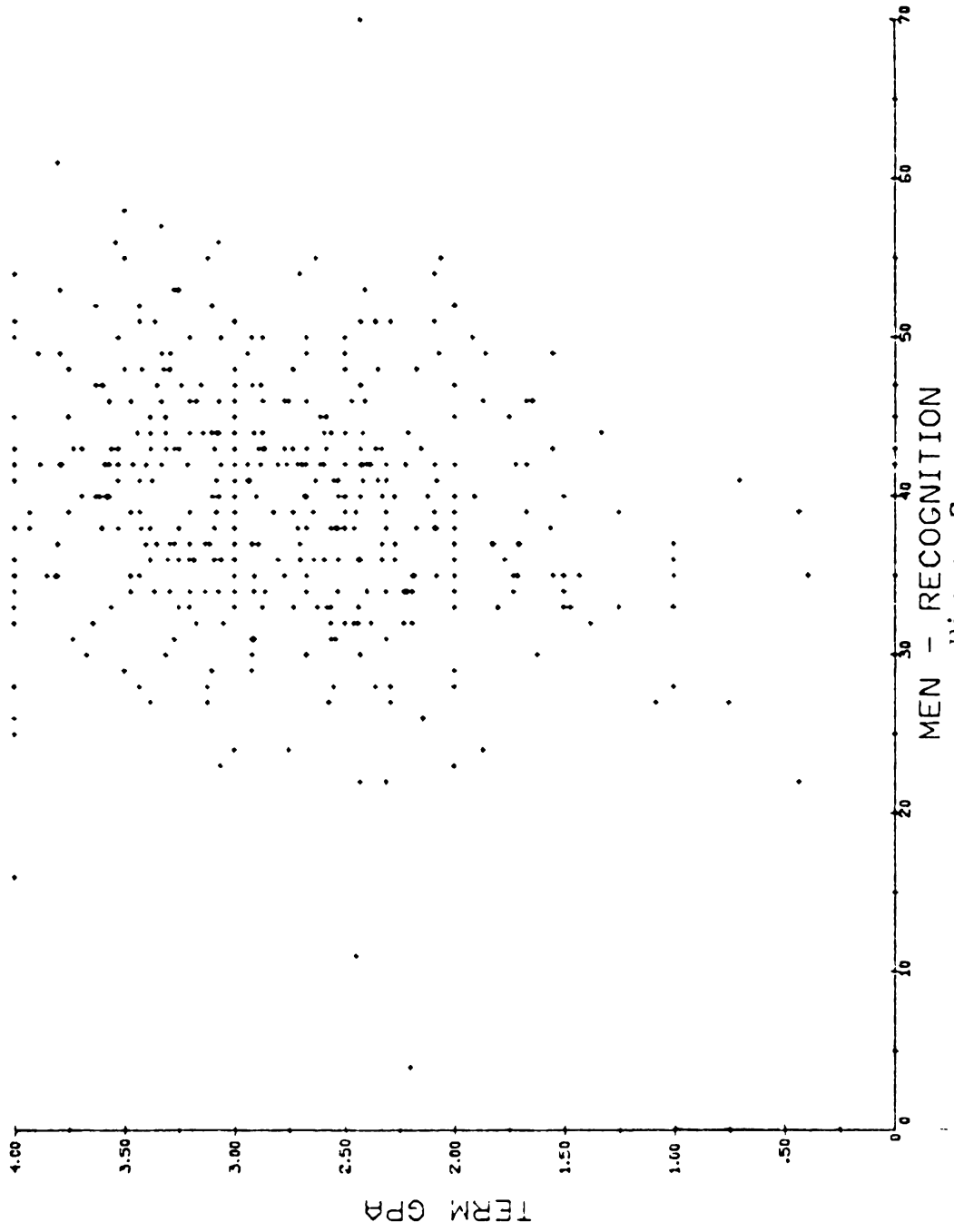

TERM GPA
4.00
3.50
3.00
2.50
2.00
1.50
1.00
.50
0
10
20
30
40
50
60
70
MEN - RECOGNITION

Figure 7

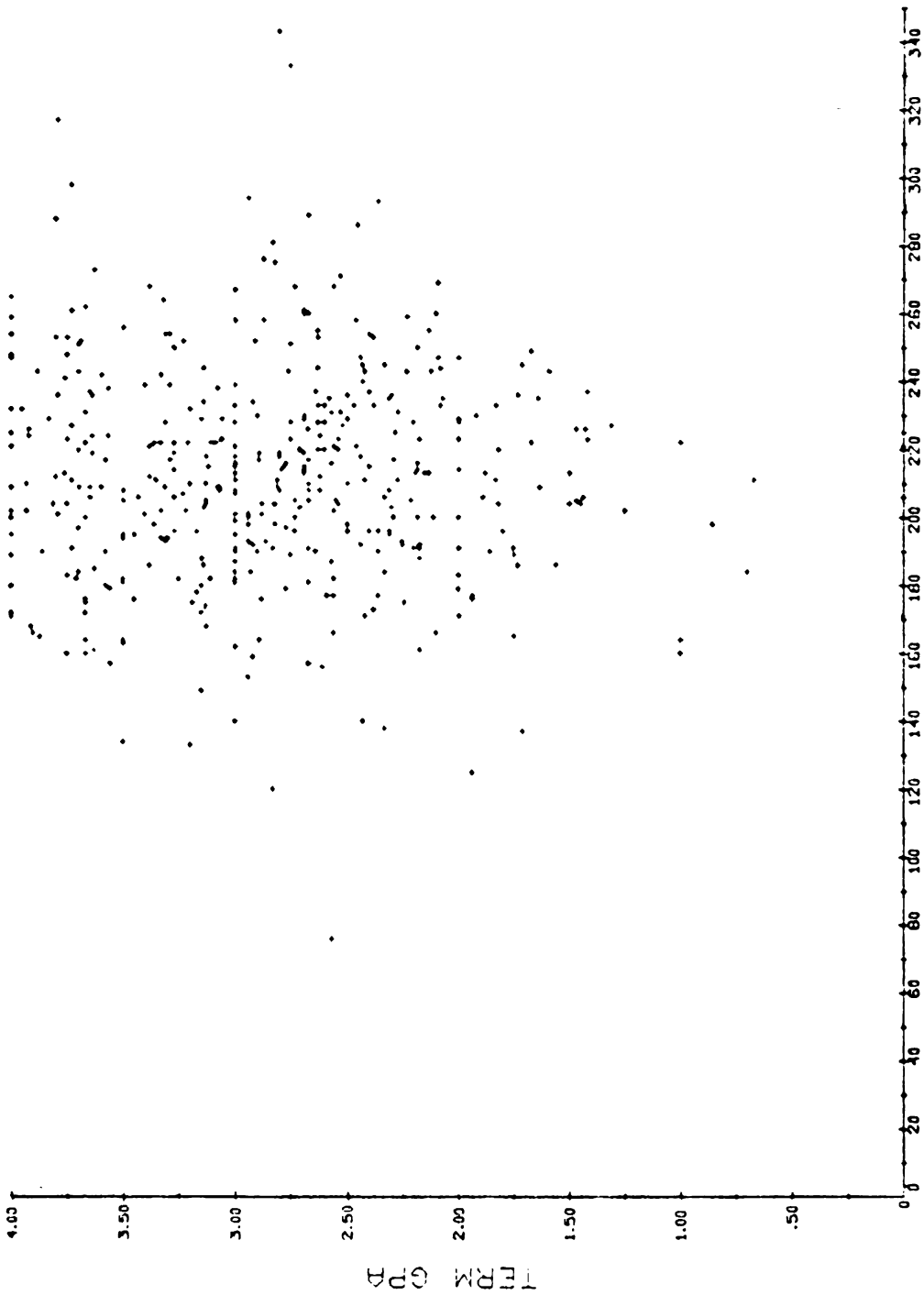

TERM GPA
4.00
3.50
3.00
2.50
2.00
1.50
1.00
.50
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
WOMEN - TOTAL SCORE

Figure 8

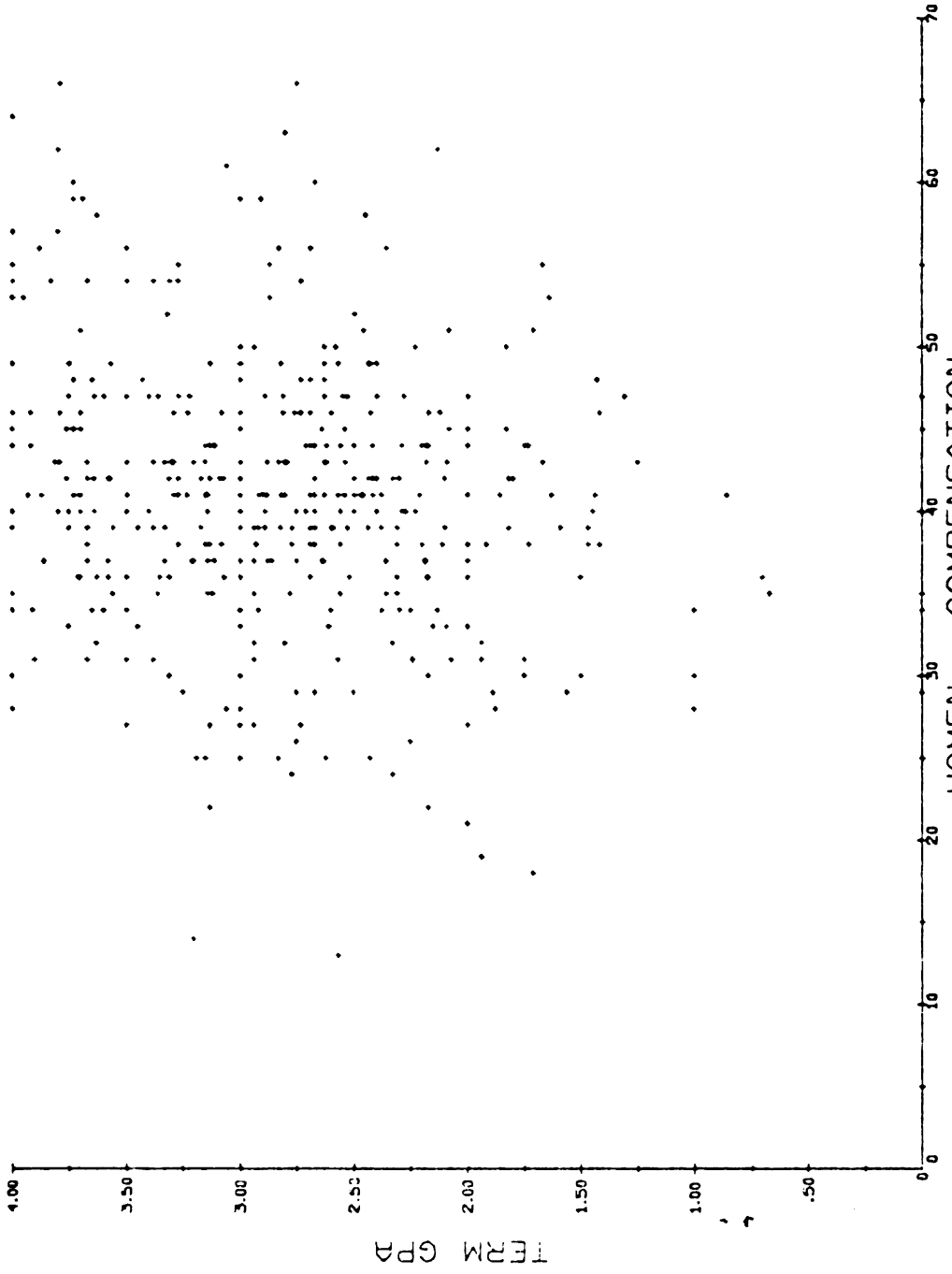
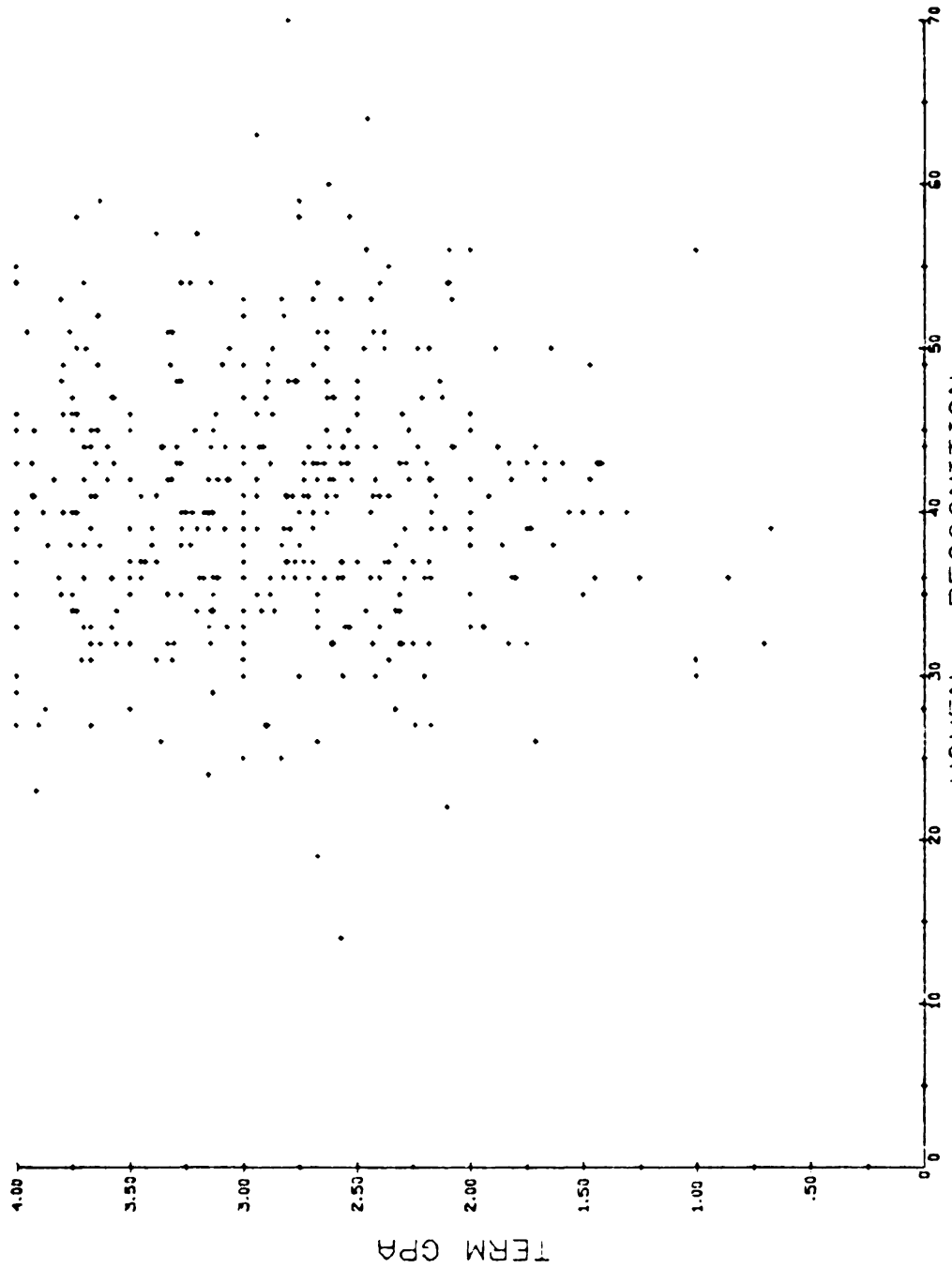

TERM GPA
4.00
3.50
3.00
2.50
2.00
1.50
1.00
.50
0
10
20
30
40
50
60
70
WOMEN - COMPENSATION

Figure 9



WOMEN - RECOGNITION
Figure 10

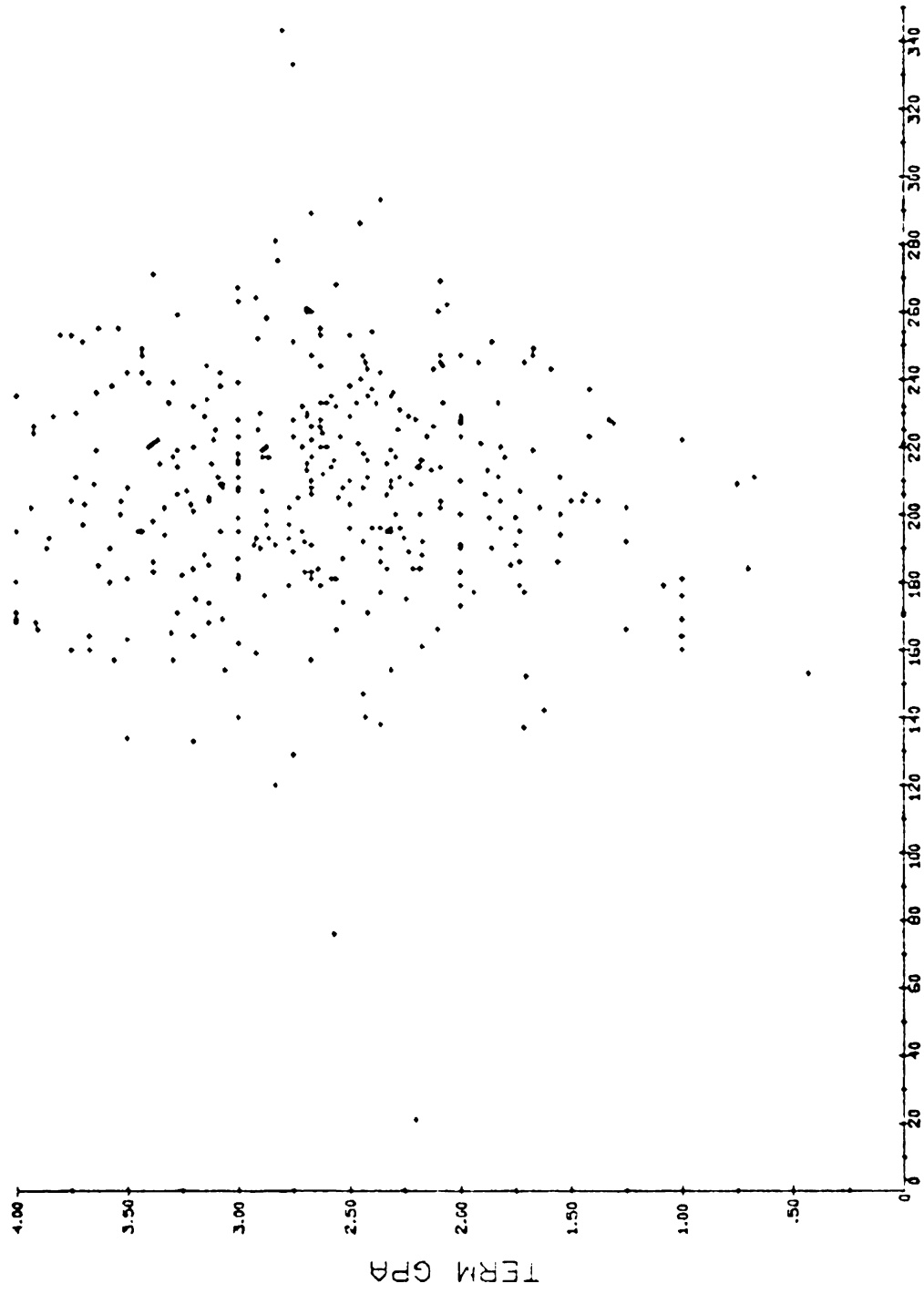

TERM GPA
4.00
3.50
3.00
2.50
2.00
1.50
1.00
.50
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
FRESHMEN - TOTAL SCORE

Figure 11

APPENDIX F

Figure

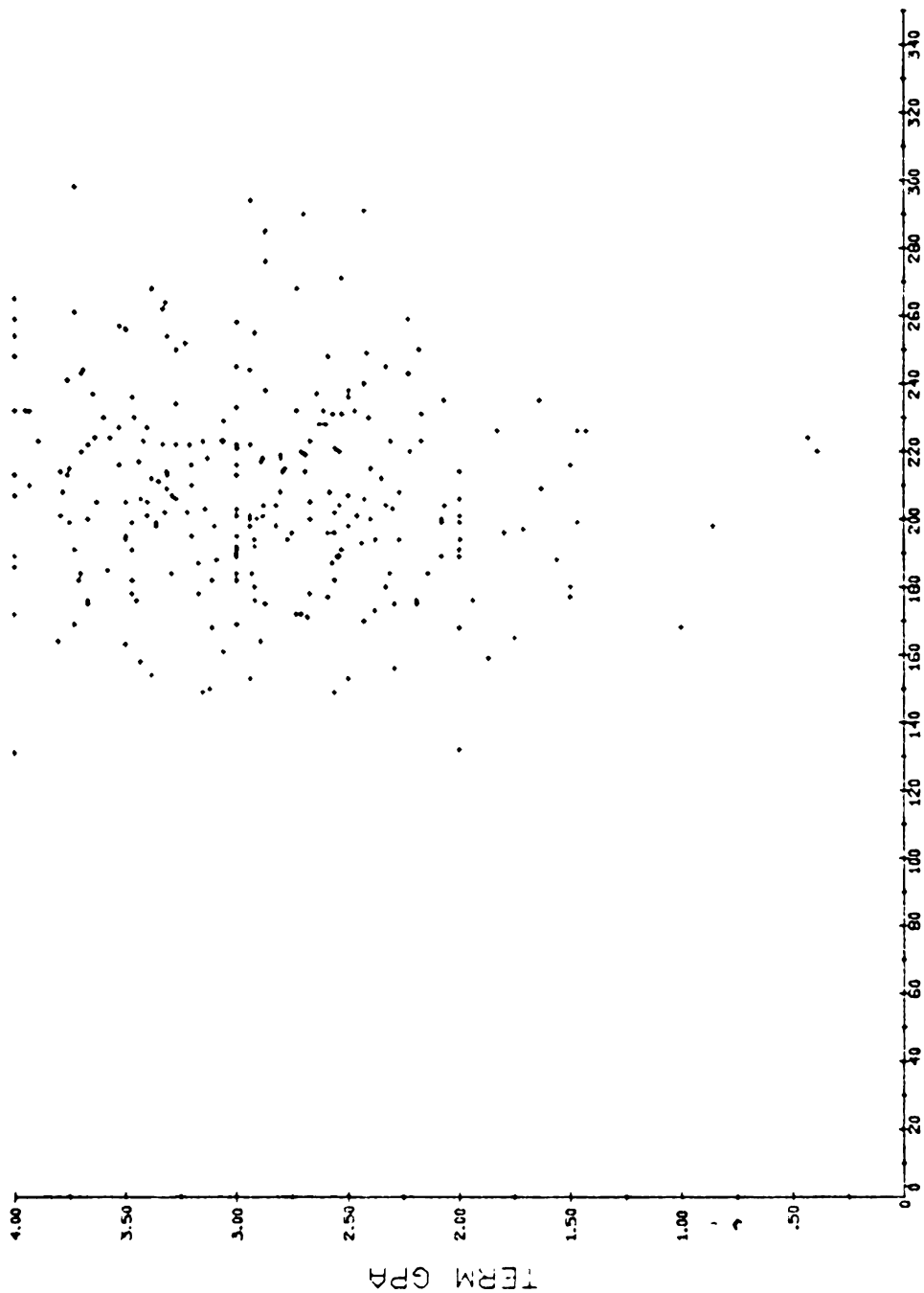
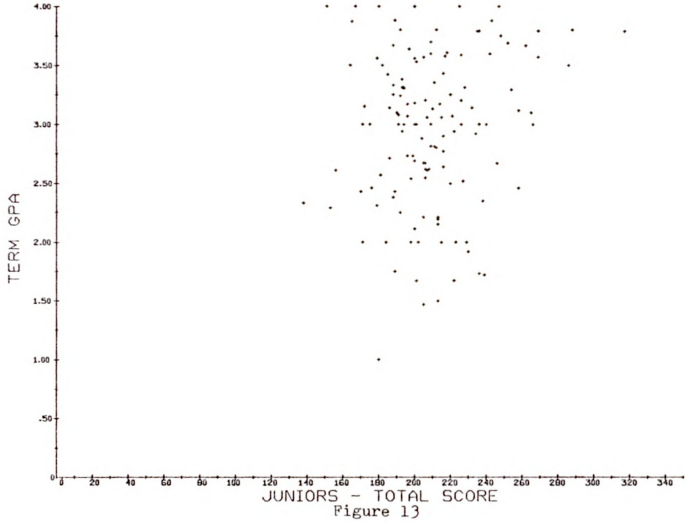

TERM GPA
4.00
3.50
3.00
2.50
2.00
1.50
1.00
.50
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
SOPHOMORES - TOTAL SCORE

Figure 12


TERM GPA
4.00
3.50
3.00
2.50
2.00
1.50
1.00
.50
0
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
JUNIORS - TOTAL SCORE
Figure 13

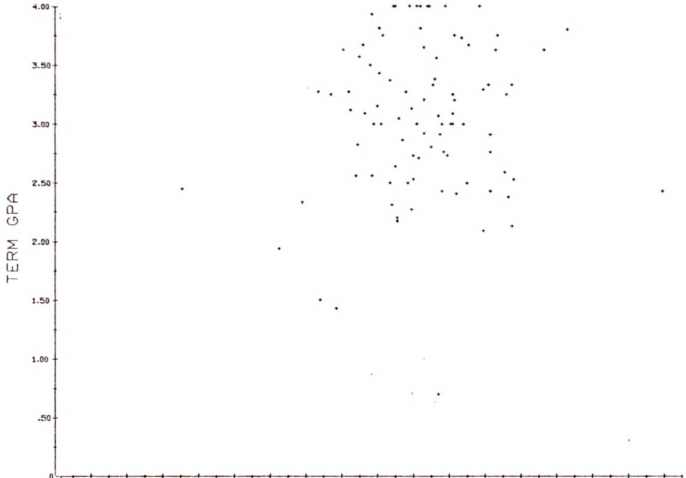

TERM GPA
4.00
3.50
3.00
2.50
2.00
1.50
1.00
.50
0
0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340
SENIORS - TOTAL SCORE

Figure 14

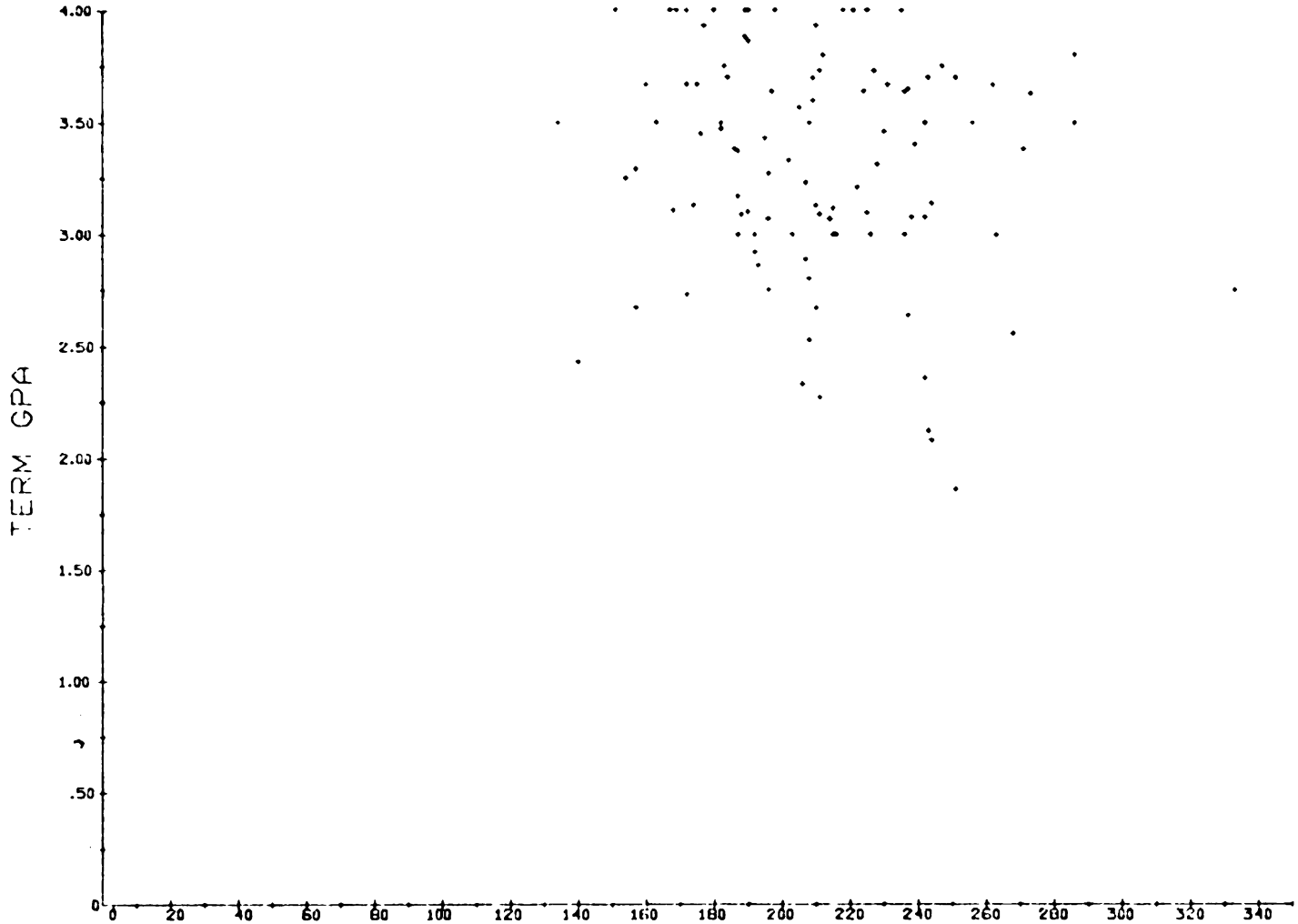

TERM GPA
4.00
3.50
3.00
2.50
2.00
1.50
1.00
.50
0
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
POSITIVE GPA DIFF - TOTAL SCORE

Figure 15

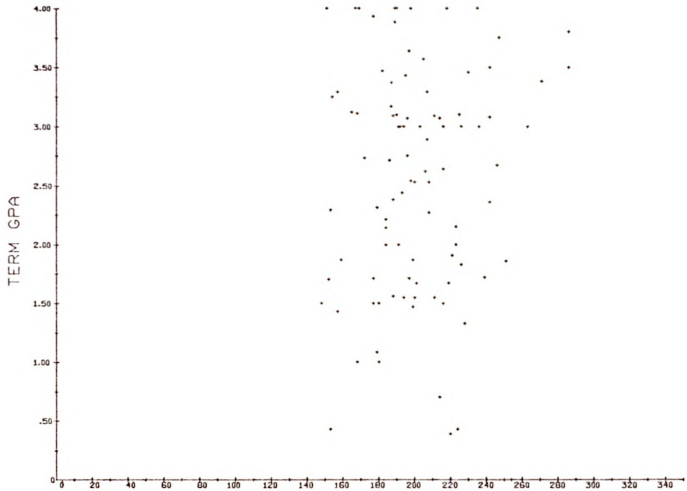

TERM GPA
4.00
3.50
3.00
2.50
2.00
1.50
1.00
.50
0
0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340
NEGATIVE GPA DIFF - TOTAL SCORE

Figure 16