A MEASURE OF PROPENSITY-TO-CHANGE IN SELECTED LIBERAL ARTS COLLEGES IN THE NORTH CENTRAL ASSOCIATION OF COLLEGES AND SECONDARY SCHOOLS

Thesis for the Degree of Ph. D.

MICHIGAN STATE UNIVERSITY
HERBERT RANDALL HENGST

1960

This is to certify that the

thesis entitled

A MEASURE OF PROPENSITY-TO-CHANGE IN SELECTED LIBERAL ARTS COLLEGES IN THE NORTH CENTRAL ASSOCIATION OF COLLEGES AND SECONDARY SCHOOLS

presented by

HERBERT R. HENGST

has been accepted towards fulfillment of the requirements for

Ph.D. degree in Educational Administration

K Hereford

Major professor

Date April 18, 1960

A MEASURE OF PROPENSITY-TO-CHANGE IN SELECTED LIBERAL ARTS COLLEGES IN THE NORTH CENTRAL ASSOCIATION OF COLLEGES AND SECONDARY SCHOOLS

by

Herbert Randall Hengst

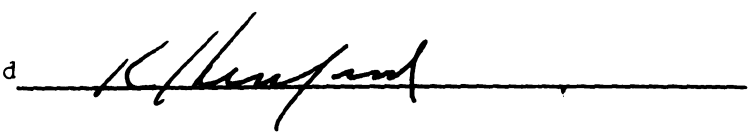
AN ABSTRACT

Submitted to the School for Advanced Graduate Studies of
Michigan State University of Agriculture and
Applied Sciences in partial fulfillment of
the requirements for the degree of

DOCTOR OF PHILOSOPHY

Department of Administrative and Educational Services

1960

Approved 

It was the purpose of this study to construct a pre-theoretical statement descriptive of propensity-to-change and to test its utility for prediction of institutional behavior among selected liberal arts colleges. A pretheoretical statement was developed from assumptions identified with perceptual psychology and reference group theory. The colleges were classified according to pre-theoretical models derived from the assumptions. Hypothetical differences in institutional behavior consistent with the models were constructed and tested.

In the study, it was assumed that:

1. A college is what it is conceived to be by its members.
2. Members of colleges behave consistently with their perceptions of the college.
3. Member behavior changes when members perceive need for change, believe resources and conditions necessary for change are available, and feel a willingness to initiate or accept change.
4. The components of members' concept of college are:
   a. a concept of college as it presently exists
   b. a concept of college as it should ideally be

Need for change was defined as the imbalance between a) and b) in assumption (4) above. Ability to change was defined as the congruence among members in their concept of college. Willingness to change was defined as the belief that a new practice or condition is consistent with the values and therefore desireable, and measured by the relationship between the self and peer acceptance of college.

It was hypothesized that members of liberal arts colleges differ significantly in their willingness to change; and that the variables of need and ability vary consistently with the extent of members willingness to change. It was predicted that colleges reflecting a high propensity-

to-change would differ signficantly from colleges reflecting low propensity-to-change in nine institutional behavior:

1. Number of problems reported
2. Number of external problems reported
3. Number of participations in organized activities
4. Number of participations in off-campus activities
5. Number of participations in informal groups
6. Number of individuals identified as leaders
7. Number of status leaders identified
8. Number of sources of pride
9. Number of people-related sources of pride

The hypotheses were tested with data obtained from three liberal arts colleges in the North Central Association of Colleges and Secondary Schools. Five of the nine hypotheses were found to be valid beyond chance. The following conclusions were justified by the study:

1. The propensity-to-change of a college can be measured by a perceptual instrument.
2. The instrument developed for that purpose measured some perceptions of colleges held by college members reliably.
3. Overvaluing and lowvaluing colleges differ significantly in the problem perception, loculs of organizational participation, and leadership perceptions of their members.
4. Overvaluing and lowvaluing colleges did not differ significantly in the perception of sources of pride or number of organizational participations reported by their members.
5. The evidence of this study indicates that further investigation is warranted.

A MEASURE OF PROPENSITY-TO-CHANGE IN SELECTED LIBERAL ARTS COLLEGES IN THE NORTH CENTRAL ASSOCIATION OF COLLEGES AND SECONDARY SCHOOLS

by

Herbert Randall Hengst

A THESIS

Submitted to the School for Advanced Graduate Studies of
Michigan State University of Agriculture and
Applied Sciences in partial fulfillment of
the requirements for the degree of

DOCTOR OF PHILOSOPHY

Department of Administrative and Educational Services

1960

ACKNOWLEDGEMENTS

Grateful acknowledgement is made to Dr. Karl T. Hereford, my major advisor, for his ideas, advice, assistance, and patience throughout the course of the study.

To Dr. William W. Farquhar for his advice and suggestions.

To Dean Ernest O. Melby for his assistance and inspiration.

To the North Central Association, College and University Commission.

To my fellow graduate students whose friendship made even more meaningful the experiencing of this study.

And most especially to my wife Jane, without whose understanding and patience and consideration the completion of this study would have been impossible.

TABLE OF CONTENTS

Chapter		Page
	Acknowledgements	ii
	List of Tables	v
	List of Figures	vii
I	Definition of The Problem	1
	The Problem Values of the Study An Overview of The Study	
II	A Theory	7
	A Definition of the College The Concept of a College Propensity-to-change Classification of Colleges Relationship of Index of Valuing to Propensity-to-change Summary	
III	Design of The Study	17
	The Design Statement of Hypotheses The Statistical Analysis Summary	
IV	Study Methods and Procedures	31
	The Population and The Sample The Measures of Independent Variables The Measures of Dependent Variables Administration of the Instruments Limitations of the Study Summary	
V	The Perceptual Classification	48
	Classification Factors Classification Procedures The Classification of the Colleges Selection of Colleges for Analysis Summary	

Chapter		Page
VI	The Analysis	61
	Tests of the Intra-Instrument Criteria Tests of External Criteria Summary	
VII	Summary, Conclusions, Implications	79
	Summary Conclusions Implications	
	Bibliography	90
Appendix A	The Index of Institutional Characteristics . .	94
Appendix B	Original Data - Individual Scores on the Six Scales of the I.I.C. by Respondent	104

LIST OF TABLES

Table		page
2.1	College Classification According to an Index of Valuing: The Perceptual Classification	11
2.2	Elements of Propensity-to-Change as Related to the College Classification	14
4.1	Distribution of Total Membership and Actual Membership in Three Colleges	33
4.2	Reliability of Six Sub-Scales of The Index of Institutional Characteristics	40
4.3	Least Squares Analysis of Two-Way Classification with Unequal Frequencies in the Sub-Cells of All I.I.C. Scales for all Colleges	42
5.1	Results of the Administration of the Index of Institutional Characteristics in Three Colleges	54
5.2	Self Acceptance and Peer Acceptance Mean Score Analyses for Classification Purposes - College A	55
5.3	Self Acceptance and Peer Acceptance Mean Score Analysis for Classification Purposes - College B	56
5.4	Self Acceptance and Peer Acceptance Mean Score Analysis for Classification Purposes - College C	57
5.5	Summary of the Perceptual Classification of Three Colleges	60
6.1	Determination of the Need Scores of Colleges A and C	62
6.2	Result of the 't' Test of the Difference Between Need Scores for Colleges A and C . . .	63

Table		page
6.3	Chi Square Test of the Significance of the Discrepancy of Individual Perceptual Classification of the College and the Determined Perceptual Classification of Colleges A and C	65
6.4	Chi Square Test of Significance of the Discrepancy of the Numbers of Problems Perceived by Members of Colleges A and C . .	66
6.5	Chi Square Test of Significance of Discrepancy of the Numbers of External Problems Perceived by members of Colleges A and C	67
6.6	Chi Square Test of Significance of Discrepancy of the Number of Organizational Participations Reported by Members of Colleges A and C	69
6.7	Chi Square Test of Significance of the Discrepancy of the Numbers of Off Campus Organizational Participations Reported by Members of Colleges A and C	70
6.8	Chi Square Test of the Significance of the Discrepancy of the Members of Informal Group Activities Reported by Members of Colleges A and C	71
6.9	Chi Square Test of Significance of the Discrepancy of the Number of Status Leaders Perceived by Members of Colleges A and C	72
6.10	Chi Square Test of Significance of the Discrepancy of the Number of Status Leaders Perceived by Members of Colleges A and C . .	74
6.11	Chi Square Test of the Significance of the Discrepancy of the Number of Aspects of Pride Perceived by Members of Colleges A and C	75
6.12	Chi Square Test of the Significance of the Discrepancy of the Number of People-Oriented Sources of Pride Reported by Members of Colleges	76
6.13	Summary of Tests of the Hypotheses	78

LIST OF FIGURES

Figure		Page
3.1	The Relationship of Dependent and Independent Variables According to Predictions Consistent with a Theory of Institutional Change	20
5.1	The Defined Possible Relationship Between The Self Acceptance Mean Score of a College and the Self Acceptance Total Group Mean Score	49
5.2	The Defined Relationship Between Peer Acceptance Mean Scores and the Self Acceptance Mean Scores of Individual Colleges	50
5.3	Four Perceptual Classifications of Colleges According to the Self and Peer Acceptance Scale Scores of The Index of Institutional Characteristics	52
5.4	Dichotomous Relationships Within Perceptual Classification System	58

CHAPTER I

DEFINITION OF THE PROBLEM

The reaction of members of colleges to phenomena that effect them in their role as "member-of-college" typically differs. For example, the North Central Association of Secondary Schools and Colleges appoints examiners who regularly report differences between the colleges of the Association. It is on the basis of perceived and reported differences that colleges are either accredited or not accredited. Members of colleges also react differently to the expanding need for higher education. A recent study reported differences among Michigan colleges in relation to the reported attitudes and behaviors of members toward the increasing potential enrollments, replacement and additional facilities, and development of new instructional programs.[1] Some colleges have established enrollment ceilings, for instance, while others actively recruit large numbers of students. Few colleges evidenced over-all planning based on governing board policy, but rather dealt with change-oriented outside phenomena in an expediential manner.

Administrators typically personify colleges, both their own and others, according to their own reaction behavior. Observers have

---

[1]Archie R. Ayers, "Institutional Planning in Face of College-Population Increase." U.S. Office of Education, (Processed), 1958.

commented upon the relationship between the philosophy of education which characterized a college and common practices with the college.[2] Consequently, some colleges are considered to be indifferent to change, either internally or externally motivated. Others are seen to be rigid and unbending, or motivated to change, or even dynamic and flexible. Characteristics are frequently assigned to colleges according to such personifications.

Efforts to predict reaction to change motivators on the basis of an "institutional personality" have proved to be fruitless in the past. The value of such analyses has been limited to the description of colleges in a normative pattern. Prediction according to an institutional personality leads to behavior designed to perpetuate the institution as it exists rather than to provide a direction for growth. Such self-perpetuative behavior contributes to failure to act upon opportunities for growth.

In spite of apparent inadequacies, the observations that administrators tend to personify colleges and that reaction behavior of members of colleges differ suggest a phenomenon which may be predictive of reaction to change. It was demonstrated by Snygg and Combs[3] that values are primary determinants of behavior, while Bills[4] related values to perception. If values do determine behavior and therefore the attitude toward change, and if they can be sampled through an examination of per-

---

[2]Dr. Walter Johnson. Lecture on the relationship of student personnel programs to the philosophy of the college.

[3]Donald Snygg and Arthur Combs, Individual Behavior (New York: Harper and Brothers, 1949), p. 13.

[4]Robert Bills, "About People and Teaching," The Bulletin of the Bureau of School Service, XXVIII (December, 1955), p. 9.

ceptions, then the phenomena of perceiving and valuing evidenced in the practice of personification of institutions may well be predictive of reaction to change.

THE PROBLEM

The problem of this study, then, is to determine differences in perceptions of members of colleges which are theoretically related to changes in behavior. In order for the problem to be studiable the significant components must be identified as sub-problems.

Sub-Problem 1: Theory Development.

A theory must be developed as a first step in analysing the difference in perceptual terms. . Such a theory will (1) define a concept of college that includes the individual members as key elements in the college, (2) relate the perceptions of individual members to the behavior of individual members, (3) identify and describe the specific perceptions to be measured, and (4) describe the resultant differences between colleges.[5]

Sub-Problem 2: Instrument Development.

A battery of instruments which are (1) consistent with the theory, (2) operationally reliable, and (3) provide data required by the study must be constructed.

Sub-Problem 3: Identification of Institutional Differences.

The generalizability of the theory will be described by several

---

[5]The differences between colleges in perceptions of college as reported by members are defined as the "perceptual differences" of the colleges.

classifications of colleges based upon the theoretical constructs previously developed. The classification of colleges will be according to the differences perceived and reported by the members of the colleges. It will also be necessary to identify appropriate classification techniques.

Sub-Problem 4: Testing the Theoretically Related Perceptions Internally.

The relationship of the perceptual variables as reported by the several scales of the instrument to the theoretically predicted relationships must be examined. That is to say, are the various scales of the instrument related in predictable fashion? One measure of the validity of the instrument would then be available.

Sub-Problem 5: Testing the Theoretically Related Perceptions with External Criteria.

The handling of this problem makes necessary the developing and testing of predictions from theoretically related perceptions to observable behavior of college members. Colleges can be described, in part, according to such "objective" characteristics as the number of student and staff organizations, the nature of problems perceived by the members, and the type of leadership acceptable to the college members. It was the function of this aspect of the problem to examine the predictableness of such practices of college members according to the theoretically defined perceptual classification.

VALUE OF THE STUDY

From an exploratory study of the problem as defined, it should be possible to make several contributions to the literature of higher

education. In the course of the study, an opportunity to develop a design employing an individual point-of-view in the description of colleges is provided. More traditional descriptions of colleges have concentrated on aspects of the environment of a more quantifiable nature. The definition of a college according to the perceptions of the members represents an attempt to present a characteristic long recognized as a significant part of the college setting.

The design employs a validation technique that is based on the individual perceptions of the college. The technique related the observed behavior of the individual members to the reported perceptions they hold and consequently served a validation function. The examination of such instrumentation through this technique would perhaps be the major value of the study. It would make possible a more objective commentary on a previously non-objectified characteristic of the college setting.

Another value of the study is the focus it places on attitudes toward change. The development of a concept of "propensity-to-change" as an integral part of the theory (see Chapter II) is significant. The instrumentation developed to describe the level of propensity-to-change also represents a contribution of value.

In sum, then, the anticipated contribution of this study is three-fold: (1) focusing attention on the propensity-to-change of colleges; (2) describing colleges according to the perceptions of members; and (3) measuring the perceptions of members through a specially designed instrument.

AN OVERVIEW OF THE STUDY

The development of a theoretical frame-of-reference pertinent to the study will be presented in Chapter Two. Chapter Three will contain the design of the study and the study procedures used, while the development and description of the instruments used will be reported in Chapter Four. The classification of the colleges in the study will be presented in Chapter Five. The analysis, which includes the testing of the predicted relationships and behaviors, will be reported in Chapter Six. The conclusions and implications of the study will be discussed in Chapter Seven.

CHAPTER II

A THEORY

The major elements of a theory of institutional change are (1) a definition of a college, (2) a concept of a college consistent with the definition, (3) a classification of colleges, and (4) the propensity-to-change of a college. Certain limitations of the theory will also be discussed.

A DEFINITION OF THE COLLEGE

A college has been traditionally defined as "a society of scholars incorporated for study or instruction". (Webster's Collegiate Dictionary) The definition implies that a college is a group of people associated for a specific and educative purpose. The present study extended the traditional definition into the operational realm by asserting that a college is what it is perceived to be by the individuals who are in membership in the college.

Such a definition was developed logically from the work of perceptual theorists. Perceptual theory holds that individuals act consistently with their perceptions of reality, that values affect perceptions and behavior and that behavior is motivated by a need to maintain and enhance the phenomenal self.[1] Consequently, it

---

[1]Bills, op. cit. p. 13.

is assumed that membership in a college implies that the individual finds opportunities to either maintain or enhance his phenomenal self through his membership in the college. This relationship of the individual as a member of the college to the group that is the college suggests further necessary elements of a theory of college characteristics.

THE CONCEPT OF A COLLEGE

The concept of the college consistent with the above definition includes elements which make possible an operational description. The concept "college" includes a present status dimension, a value of present status, and an ideal condition of the college. If such dimensions exist, they can be measured by sampling the perceptions individual members have of their college.

Perceptual theory holds that individuals perceive elements of their environment according to their needs.[2] Consequently, it can be assumed that individuals who are members of colleges, and therefore demonstrate a need of (i.e. attach value to) the college, perceive the college in terms of present and ideal status.

The discrepancy between the perception of present and ideal status represents an apparent need for change according to the individual member. Because of the assumption that membership implies identification with group norms, it follows that the mean discrepancy between present and ideal status for all members of a college represents the "need for a change" factor in the concept of college.

---

[2]Bills, op. cit. p. 6.

The idea of a college pertinent to the study includes, then, the following elements: (1) a present status dimension, (2) a value of present status, (3) an ideal status, and (4) a need for a change factor. The elements can be measured by sampling pertinent perceptions of members.

PROPENSITY-TO-CHANGE

The idea "propensity-to-change" is defined as a "persistent and directional tendency of people to respond in characterisitc ways to a given situation".[3] It seems to be descriptive of the general characteristic described by observers of the college scene as an institutional personality, an "atmosphere", or a traditional "character" of a college with respect to introduction of novelty. If such a definition can be assumed, the nature of the concept requires examination, for it must be related to the preceding elements of the theory of institutional characteristics as a pivotal concept.

In order for propensity-to-change to be consistent with the definition of college developed above, it must be describable in perceptual and individual terms. It is necessary also to admit the assumption that propensity-to-change implies that members respond in a directional, persistent, and predictable way in given situations which provide opportunities for change in the college.

---

[3]Karl Hereford and Fred Vescolani, "A Theory of Community Development," p. 12, (Unpublished manuscript).

Given the above need and assumption, propensity-to-change can be defined by examining three factors that influence or modify it in a given college.

1. Need - is considered as a belief by the members that the introduction of some new practice or condition would satisfy a human need within the college. Need can be measured by the discrepancy between present status and ideal status perceived by the members.
2. Willingness - is a belief of the members that the new practice or condition is consistent with their values and is therefore, desireable. Willingness can be measured by the level of valuing of a college demonstrated by its members.
3. Ability - is described as a condition that suggests the college is able to organize available resources to incorporate the new practice or condition. Ability can be measured by the level of agreement among members in the value they ascribe to self and perceptions of college. Therefore, a relatively high level of agreement should suggest a high ability to utilize whatever new practice is within the prevailing value system of the members of the college.

CLASSIFICATION OF COLLEGES

The theory of institutional characteristics includes the elements necessary for a meaningful classification of colleges according to the

nature of the valuing of the members. Becker suggests the method of constructed typology as a valid tool for use in the analysis of social phenomena.[4] Following his general pattern, a classification system based on the components of the theory was developed.

The measure of valuing of the college by its members is defined as the relationship between the value ascribed to the individual's own perception of the status of the college (self-acceptance), and the value he perceived his peers to ascribe to the college (peer acceptance). Such relationships, taken in view for all members, are seen as an index of valuing for the college. A four-point classification based on the inter-relationships of self and peer perception of value are apparent: highvaluing, overvaluing of self, undervaluing of self, and lowvaluing.

TABLE 2.1

COLLEGE CLASSIFICATION ACCORDING TO AN INDEX OF VALUING: THE PERCEPTUAL CLASSIFICATION

Self Valuing (Scale II)	Peer Valuing (Scale II)	
	High	Low
High	(High-High) Highvaluing	(High-Low) Overvaluing of Self
Low	(Low-High) Undervaluing of Self	(Low-Low) Lowvaluing

[4]Howard Becker, Through Values To Social Interpretation, (Durham, North Carolina: Duke University Press, 1950), pp. 93-127.

Highvaluing Colleges would be comprised of members who evidence high levels of valuing of self perceptions of the institution, and who ascribe equally high (or higher) levels of valuing to their peers. Individuals of these characteristics would be those who had adequate phenomenal selves.[5] A college composed of such individuals would be expected to deal successfully with its environment.[6]

Overvaluing Colleges are those whose members characteristicly place greater value on their own perceptions of the college than on those they ascribe to their peers. Overvaluing leads to inaccurate perception of the environment. The self tends to overestimate its status and underestimate the gravity of problems, issues, and opportunities.[7] The overvaluing self demonstrates an inability to recognize the need for changed conditions in its environment.[8] A college comprised or overvaluing members would evidence rejection of change on the grounds that it was less worthwhile than the existing situation. Real threat would be met by derision.[9] Overvaluing colleges tend to perpetuate themselves unmodified by external forces.

Undervaluing Colleges are those in which the members tend to value self perceptions as less worthy than the perceptions they ascribe to peers. A characteristic response to threat by undervaluing individuals is to re-define the self so as to eliminate the threat.[10] The self is not

---

[5]Bills, op. cit., p. 18.

[6]Snygg and Combs, op. cit., pp. 1-35.

[7]Bills, op. cit., p. 23.

[8]Snygg and Combs, op. cit., p. 141.

[9]Robert Bills, "Attributes of Successful Educational Leaders," Bulletin of Bureau of School Service, (December, 1957). p. 28.

[10]Snygg and Combs, op. cit., p. 142.

perceived as being capable of dealing with a threatening situation. Colleges peopled by under-valuing members would be characterized as being incapable of coping with major problems. They would be seen as inferior in many ways by their members, as being institutionally inadequate.

Lowvaluing Colleges are those in which the members evidence little acceptance of self perceptions and perceptions ascribed to peers. It is assumed that low valuing individuals would find no cause for interacting with peers and no cause for confidence in self. Therefore, colleges populated by such members would be characterized by an appeal to authority - a non-peer authority - as the basis for continued operation. Change would find an unfriendly welcome in lowvaluing colleges for it would suggest a serious threat to the "authority" which provides guidance.

RELATIONSHIP OF INDEX OF VALUING TO PROPENSITY-TO-CHANGE

The index of valuing represents the willingness component of the propensity-to-change. The classification of colleges according to the index provides a design for the analysis of colleges. Certain characteristics of the three components are related to the classification consistently with the theory. The relationships are presented in Table 2.2.

TABLE 2.2

ELEMENTS OF PROPENSITY TO CHANGE AS RELATED TO THE COLLEGE CLASSIFICATION*

Propensity to Change Elements	College Classification			
	Highvaluing	Overvaluing of Self	Undervaluing of Self	Low-Valuing
Need	2	4 (Least)	1 (Most)	3
Willingness	2	4 (Least)	1 (Most)	3
Ability	1 (Most)	2	4 (Least)	3

*Relationship Scale - 1 to 4 signifying from most to least of the propensity elements present in the classification

It is apparent from Table 2.2 that the most pronounced differences among the classes of colleges appear in the ability component. An explication of the table, therefore, is in order.

Highvaluing College. The classification is now further defined to identify the greatest relative propensity with highvaluing colleges. It is assumed that such colleges demonstrate the highest level of agreement among members in willingness to act upon opportunities for college growth. Again, such colleges would be characterized by the perception of least threat in the environment. Having the highest relative propensity-to-change, high valuing colleges would be expected to evidence the most relative growth according to whatever growth criteria were established.

Overvaluing of Self College. Such colleges would be characterized by the lowest level of propensity-to-change. Its members perceive the least need to act upon new stimuli and evidence the least willingness to act upon that which they do perceive. A relatively high level of ability to actualize whatever they do perceive, however, is also a consistent characteristic. It would be anticipated that such institutions would include a high proportion of members who subscribe to a similar generalized "value system". That is to say, there would be a relatively high agreement in willingness (comparative valuing) of the members to act upon innovation, but the phenomenon of innovation would not itself be highly valued.

Undervaluing of Self College. Undervaluing colleges include members who perceive the highest relative need for change, who evidence the highest willingness to act on new phenomena, but who demonstrate the lowest level of ability to activate change. It would be expected that the greatest degree of divergence in institutional valuing by the members would be apparent in undervaluing colleges.

Lowvaluing Colleges. The basic characteristic of such colleges is a relatively low level of performance in each of the three elements of propensity-to-change, and consequently, little propensity-to-change.

SUMMARY

Chapter Two has included the major elements of a theory of institutional change. The theory has defined a college as the aggregate of the perceptions of the individual members of the college. It described a college concept perceptually (i.e. by self concept of college and self concept ascribed to peers) to include a present status, a level of

valuing, and an ideal status. It included a four point classification system for colleges based on the level of valuing of its members. A key concept of the theory was the propensity-to-change of a college, which was defined as a tendency of the college members to respond in characteristic ways to a given situation. Propensity-to-change was described in three basic components: need, willingness and ability. The theory also related perceptual classification (index of valuing) to the propensity-to-change and predicted institutional performance on the components of propensity consistently.

CHAPTER III

DESIGN OF THE STUDY

There are several statistical treatments and various designs available for use in the analysis of studies in education. The present study is based on a design that made possible the comparison of a perceptual classification of colleges with selected behaviors of members of the colleges. Such a design made possible the development of hypotheses regarding the anticipated behavior according to the theory of college characteristics presented above. It also provides for testing the hypotheses according to appropriate statistical techniques.

THE DESIGN

The colleges in the study were classified according to the willingness of the members to change. The classification instrument will be discussed in detail in Chapter Four, and the classification procedure in Chapter Five. The classification became the independent variable in the design, and selected external criteria the dependent variables. In addition, the design provides for testing the perceptual variables within colleges.

The dependent variables identified for study were (1) the elements of propensity-to-change - need and ability, (2) the organizational activity of members of colleges, (3) the problems of the colleges perceived and reported by the members, (4) the aspects of the college per-

ceived pridefully by the members, and (5) the nature of the leadership structure as perceived by the members. The examination of the propensity-to-change elements provides a test of the validity of the classification according to predictable differences within the specific college. Variables two through five provide opportunities for examining the validity of the classification according to predictable differences between colleges of different classification.

Although a multitude of different behavior variables were available for study, the choice was limited by the purposes of the present study, established and conventional practices (i.e. - those having "face validity"), the interests and experience of the observer, and by the practical limiations of obtaining and handling the needed responses of members of colleges. Consequently, the organizational activity of members of colleges was assumed to be a measure of centripetalness within the college, and therefore, predictable according to its perceptual classification. Likewise, problem-perception and pride-in-college were considered to be related to the valuing of the members of the colleges. Also, they were deemed to be predictable according to the perceptual classification of the college. In a similar fashion, the leadership structure of the colleges was considered as predictable according to the perceptual classification of the college.[1] Others factors, such as age distribution of members, sex differences, socio-economic status, personality classification, and intellectual capacity were not included in the study for the reasons presented above.

---

[1]See Chapter Four for a further discussion of dependent variables.

The relationships among and between the several dependent and the independent variables form the basis for the analysis of the problem. It is from these inter-relationships that the hypotheses to be tested are drawn. Consequently, the relationships are presented in Figure 3.1.

Figure 3.1. The Relationship of Dependent and Independent Variables According to Predictions Consistent With a Theory of Institutional Change

Code: 1 - The most; 2 - second order; 3 - third order; 4 - the least

Dependent Variables	Independent Variables			
	Perceptual Classification of Colleges			
	High Valuing (H_V)	Overvaluing of Self (O_V)	Undervaluing of Self (U_V)	Low Valuing (L_V)
1. Propensity to change				
a. Need	2	4 (Least)	1 (Most)	3
b. Ability	1 (Most)	2	4 (Least)	3
2. Organizational				
a. Total Activity of Members	1 (Most)	4 (Least)	2	3
b. # Off-Campus Organizations	2	4 (Least)	1 (Most)	3
c. # Informal Groups	2	4 (Least)	1 (Most)	3
3. Problem Perception				
a. Total Number of problems perceived	3	4 (Least)	2	1 (Most)
b. # External Problems Reported	1 (Most)	3	2	4 (Least)
4. Sources of Pride				
a. Total Number of aspects of pride reported	2	1 (Most)	3	4 (Least)
b. # of People-Centered Aspects Reported	1 (Most)	3	2	4 (Least)
5. Leadership Structure				
a. Total Number of Leaders identified	1 (Most)	4 (Least)	2	3 (Least)
b. # of Status Leaders Reported	3	1 (Most)	2	4 (Least)

STATEMENT OF HYPOTHESES

Statistical procedures usually are concerned with the testing of the "null" hypotheses, or the hypothesis that there is no true difference between the variables being tested. The hypothesized relationships are apparent in the preceding pages. In as much as the alternate hypotheses are directional, they are stated. The hypotheses are listed according to instrument or external criteria tests, and the specific variable involved.

Hypotheses Testing Differences Within the Construct

In order to examine the theoretically related perceptions internally, the two components of propensity-to-change were related to the classification system. Each hypothesis is stated in the null form.

Need and Perceptual Classification. The need component was defined as the discrepancy between the present and ideal status of the college as perceived by its members. It is related hypothetically to perceptual classification as follows:

> H_0: The descrepancy between the present status and ideal status is equal among the four perceptual classifications of colleges.

The four classifications of colleges are expected to be related in the following manner with regard to the need element of propensity and according to the prediction from the theory:

Undervaluing > Highvaluing > Lowvaluing > Overvaluing

Ability and Perceptual Classification. The ability element of propensity-to-change was defined as the degree of agreement among members in the value they ascribe to self and peer perceptions of the college. It

is related to perceptual classification as follows:

> H_0: The degree of congruence in the perceptual classification ascribed to colleges by the individual members is equal among the four perceptual classifications of colleges.

"Degree of congruence" refers to the agreement of the classification assigned to the college by each member with the actually derived classification of the college and the classification assigned by the other individual members of the college. In other words, does the modal group of individuals agree in classification of the college with the derived classification, and if so, to what extent? The testing of this hypothesis should provide an indication of the strength of the particular classification for the particular college.

A second factor should be described in part by this analysis. Although the direction of the difference in this measure of the ability component of propensity-to-change, as was the case above, is not hypothesized directly, it is theoretically anticipated that observable directional difference will appear. The data will be inspected for differences among the perceptual classifications according to the following pattern: Highvaluing $>$ Overvaluing $>$ Lowvaluing $>$ Undervaluing. This relationship is interpreted to mean that Highvaluing colleges will evidence the greatest ability to maximize the propensity-to-change; that is, they will evidence the highest degree of agreement in the perceptual classification ascribed to colleges by each individual member. Undervaluing colleges will evidence the least ability.

Hypotheses Testing Difference Between the Classification and External Criteria.

The theory needs to be tested by examining the predictive state-

ments derived from its assumptions. Predictions regarding member behavior in colleges of different perceptual classification are verbalized in the hypotheses which appear below. The null form of the hypotheses is used, with applicable directional alternate also included.

Organizational Activity of Members and Perceptual Classification. Three types of organizational activity were identified: the number of organizational participations reported by members, the locus of the organizational activity, and the extent of the informal group activity. The hypothesized relationships are presented below.

> H_0: The number of organizational participations of members of colleges is equal among the four perceptual classifications of colleges.

This null hypothesis is translated into operational null hypotheses as follows according to the theoretical relationships (Hv-High-valuing colleges; Ov-Overvaluing colleges; Uv-Undervaluing colleges; and Lv-Lowvaluing colleges):

$H_0: H_v = U_v = L_v = O_v$ $\qquad$ $H_1: H_v > H_v > L_v > O_v$

> H_0: The number of off-campus organizational participations reported by members of colleges is equal among the four perceptual classifications of colleges.

The first hypothesis drafted to test the nature of organizational participation according to the perceptual classification deals with the locus of the participation. The theory predicts a difference among the classifications which is expressed in the following null and alternate forms:

$H_0: U_v = H_v = L_v = O_v$ $\qquad$ $H_1: U_v > H_v > L_v > O_v$

H_0: The number of informal organizational participations reported by members of colleges is equal among the four perceptual classifications of colleges.

The nature of the organizational participations is also considered to be described in part by the kind of groups members participate in. The difference between formal and informal groups is one of the measures of this aspect of the organizational activities of college members. It is predicted from the theory of institutional change that a difference will appear among colleges of different perceptual classification according to the alternative hypothesis that are stated below following the null form.

$H_0: U_v = H_v = L_v = O_v$ $\qquad$ $H_1: U_v > H_v > L_v > O_v$

Problem Perception and Perceptual Classification. Two areas of interest regarding problem perception behavior of members of colleges have been identified for examination: the number of problems reported and the source of the perceived problems. The hypothesized relationships between these aspects of problem perception and perceptual classification are expressed below.

H_0: The number of members reporting many problems is equal among the four perceptual classifications of colleges.

The phrase "many problems," is defined to include the numbers of problems reported that were above the mean number of problems reported by the members of each college. The above null hypothesis is stated in operational terms according to the relationships between each of the pairs of college classificationa. The alternate hypothesis is directional according to the theoretical predictions and is also stated.

$H_0: L_v = U_v = H_v = O_v$ $\qquad$ $H_1: L_v > U_v > H_v > O_v$

H_0: The number of external problems reported by members of colleges is equal among the four perceptual classifications of colleges.

"External problems" are those the source of which lies outside the college. The operational definition of this term is stated completely in Chapter Six. The difference among colleges of different perceptual classification is expressed in directional alternative hypothesis drawn from the theoretically predicted relationships and expressed below.

$H_0: H_v = O_v = L_v = O_v$ $\qquad$ $H_1: H_v > U_v > L_v > O_v$

Sources of Pride and Perceptual Classification. The relationships between sources of pride and the perceptual classification have been predicted according to the number of sources reported and the number of those that are people-centered.

H_0: The number of sources of pride reported by the members of colleges is equal among the four perceptual classifications of colleges.

"Sources of pride" is defined as the aspects of the college that members report pridefully. The theoretically predicted differences among the colleges are stated as directional alternative following the specific null hypothesis which appear below.

$H_0: O_v = U_v = H_v = L_v$ $\qquad$ $H_1: O_v > U_v > H_v > L_v$

H_0: The number of people-centered sources of pride reported by members of colleges is equal among the four perceptual classifications of colleges.

One of the measures of difference between classifications is the part of the college that members regard pridefully. The aspects that are related directly to individuals rather than traditions or objects are defined as "people-centered" sources of pride. The complete opera-

tional definition appears in Chapter Six. The theoretically predicted relationships among the perceptual classifications of colleges are stated below as alternatives following the specific null hypothesis.

$H_0: H_v = U_v = O_v = L_v$ $\qquad$ $H_1: H_v > U_v > O_v > L_v$

Leadership Structure and Perceptual Classification. It is hypothesized that both the size and the nature of the leadership structure of colleges would vary according to perceptual classifications. Two aspects of leadership structure are, therefore, the number of leaders reported and the number of status leaders reported by members of colleges.

> H_0: The number of members reporting many leaders is equal among the four perceptual classifications of colleges.

A report of "many leaders" is defined as one in which the individual reports more than the mean number of leaders reported by the members of the college. The direction of the predicted relationship among the classifications of colleges is stated in the alternative to the null hypothesis, both of which are reported below.

$H_0: H_v = U_v = L_v = O_v$ $\qquad$ $H_1: H_v > U_v > L_v > O_v$

> H_0: The number of status leaders reported by members of colleges is equal among the four perceptual classifications of colleges.

"Status Leaders" are defined as those who were identified by members of colleges as leaders because of their position rather than their role. The complete operational definition appears in Chapter Six. The direction of the predicted relationship among the classification of colleges is stated in the alternatives to the null hypotheses, both

of which are reported below.

$H_0: O_v = U_v = H_v = L_v$ $\qquad\qquad$ $H_1: O_v > U_v > H_v > L_v$

Each of the hypotheses was of equal concern to the present study. The exploratory nature of the study suggested that any significant relationship observed among the several variables and classifications would be meaningful. The statistical tools used to test the hypotheses are discussed in the next section.

THE STATISTICAL ANALYSIS

In order to test the hypotheses, it will be necessary to treat the data with appropriate statistical techniques. The reliability of the classification instrument (see Chapter Four) will be tested with an analysis of variance technique. After determining the reliability, the hypotheses testing the relationships within the instrument (propensity-to-change components) will be tested with the Student's "t" mean analysis. The Chi-square method will be used to test the hypotheses regarding the relationships between the colleges of different perceptual classification and external criteria.

Analysis of Variance; Reliability

The Hoyt method for estimating the reliability for unrestricted item scoring was selected to test the reliability of the classification instrument. Conventional analysis of variance techniques require a dichotomous item scoring pattern, and the instrument developed to classify the colleges perceptually required a scoring range of one-to-five (see Chapter Four). The Hoyt method regards the matrix of item scores as a two-way factorial design for the analysis of variance.

The analysis of variance assumes that (a) contributions to the variance are additive, (b) observations are independent, (c) variance within the sets are equal, and (d) the variances are normally distributed. Assumptions (a) and (b) were met within the data. All responses within the sets are additive, and each response was to a different item and, therefore, assumed to be independent. Guilford[2] demonstrated that the Hoyt analysis of variance estimation of reliability was identical with the Kuder-Richardson Formula 20, and reported an experiment by Brogden[3] which demonstrated that the K-R Formula 20 results showed little bias even though the assumptions were not met. Therefore, it was concluded that the Hoyt method produced an acceptable estimation of reliability without assumptions (c) and (d) being met. Admittedly this is a risky assumption, but one that appears reasonable.

The Student's "t"

The data by which the hypotheses of relationships within the classification instrument will be tested appears as mean scores for the appropriate scales of the instrument. The data is reported in scores on an additive interval scale. The populations were assumed to be normal, to have the same variance, and to be independent.[4] Consequently, the conditions were appropriate for the use of the Student's "t" as the most powerful test of the data differences.

---

[2]J. P. Guilford, Psycometric Methods (New York: McGraw-Hill Book Company, Inc., 1954), pp. 353-355.

[3]H.E. Brogden, "The Effect of Bias Due to Difficulty Factors in Product Moment Item Inter-Correlations on the Accuracy of Estimation of Reliability," Educational and Psychological Measurement, 6:517-520, 1946. As cited in J. P. Guilford, Psychometric Methods.

[4]Sidney Siegel, Nonparametric Statistics For the Behavioral Sciences (New York: McGraw-Hill Book Company, Inc.), pp.19-20.

The Chi-Square

When data available to test the relationship between variables are in a measurement of less strength than an interval scale, a non-parametric test is called for. The present study contains some data that were of a frequency nature. Therefore, the examination of the relationships between the perceptual classification and some of the external criteria will be conducted with the chi-square test.

The chi-square test assumes independence among the single responses, theoretical frequencies of adequate size, use of frequency data, and adequate categorizing.[5] To meet the assumptions, the following steps were taken: the data were handled so that independence was assured (i.e. - first choices of respondents were used whenever a question of independence developed); data were grouped to remove all cell frequencies less than five; all non-frequency data were excluded in chi-square tests; and categories analyzed were acceptable only after a 95% level of agreement on classification of specific responses was demonstrated by impartial judges.

Level of Significance

A .05 level of significance was established for rejecting the null hypothesis. It is remembered, however, that this is primarily an exploratory study. Therefore, a specific level of significance will not be permitted to interfere with the identification of trends that might be demonstrated in the examination of the data.

---

[5]Don Lewis and C. J. Burke, "The Use and Misuse of the Chi-Square Test," Psychological Bulletin, 46:434.

SUMMARY

The design of the study provided for the development of a perceptual classification of colleges. The four resultant classifications were identified as the independent variables. Six dependent variables were identified as pertinent to the study. They were two of the elements of propensity-to-change, the organizational activity of members of colleges, the problems of the college perceived and reported by the members, the aspects of the college perceived pridefully by the members, and the nature of the leadership structure as perceived by the members. Hypotheses were stated in both the null and alternate forms for all pertinent relationships between the dependent and independent variables. Statistical tools identified as appropriate were the analysis of variance for a test of reliability, the Student's "t" for the mean analysis, and the chi-square for the non-parametric test. All hypotheses will be tested at the .05 level of significance.

CHAPTER IV

STUDY METHODS AND PROCEDURES

In order to study the problem under consideration, it was necessary to investigate certain related areas. For instance, the nature of the population and the sample must be identified, the proper instruments must be developed, the sample and the instruments must then be brought together in order that the needed data might be collected. It is also pertinent to investigate the limiations imposed upon the study by the nature of the sample and the instrumentation.

THE POPULATION AND THE SAMPLE

The Population

All of the subjects of the present study were members of one of three small, liberal arts colleges in the Middle West. A "member" was defined as a student or staff member (instructional and administrative) of one of the colleges. There was no evidence taken in the present study that makes possible the comparison of the subjects with the universe of college students and staff members in the United States. Similarly, no generalized information beyond the data that appears below was obtained about the colleges as institutions comparable with the universe of institutions throughout the nation. Therefore, the population of this exploratory study is limited to the three colleges involved, even though the nature of the data collected and studied is of interest to all in the field of higher education.

The Sample

Three liberal arts colleges were selected to serve as subjects for the study. All were located in the Middle West and were church related. Two were coeducational and the third included only female students. One was located in an established heavy-industry area, the other two in essentially rural communities. None were accredited by the North Central Association of Colleges and Secondary Schools, the appropriate regional accrediting agency, although each was actively seeking accredidation. All of the colleges had full-time equivalent enrollment of less than 300 students. Each college announced, through its catalog, the offering of liberal arts and pre-professional courses. Each institution depended upon income from student-tuitions and fees as the primary source of revenue. The staffs of the three colleges were somewhat similar in the number of years experience they had in higher education and in the professional preparation, but differed in other characteristics.

The three colleges were pre-selected, however, and not identified specifically for purposes of the study. Consequently, the elimination of uncontrolled variables was impossible. For instance, it was not possible to select three coeducational colleges, or three that were affiliated with the same religious group. Nor was it feasible to select a sample of colleges with similar histories or in similar locales. However, the diversity of the colleges studied marked well the uniqueness that is associated with every institution of higher education. The only type of control that was available was provided by a selection of

appropriate analysis techniques. Sample inadequacies were inherent in the study.

For purposes of study, the colleges were assigned letter identifications. College A was located in the northern lake region. It was a girls school, which resulted in its being the most deviant in several observable characteristics. College B was located in the Midwest in a small town which served as a center for a largely rural economy. College C was situated in the business section of a middle sized industrial town which was part of a larger industrial complex. It served largely as a commuting college.

The actual sample of the study was composed of members of the administrative and instructional staffs and the student bodies of the three colleges. The ideal sample would have included all administrators, instructors, and students of the three colleges. The total membership of the sample colleges was as follows:

TABLE 4.1

DISTRIBUTION OF TOTAL MEMBERSHIP AND ACTUAL RESPONDENTS IN THREE COLLEGES

College	Students			Staff		Adminis.		Total	
	Full Time	Part Time	Respon-dents	Full Time	Respon-dents	Full Time	Respon-dents	Full Time	Respon-dents
A	170	165	175	29	22	7	7	206	204
B	194	80	167	25	14	12	12	231	193
C	262	42	42	34	23	16	9	312	74

It was not practicable to secure 100% participation of the sample. In colleges A and B all available instructors, administrators and students participated. Table 4.1, also includes the actual numbers of useable complete responses resulting from the administration of the Index of Institutional Characteristics. It is obvious from this information that a major portion of the total membership of both A and B provided useable results. The situation was different in college C. The institution lacked facilities to make possible the assembly of all members. Accordingly, appropriate officers of the college were requested to draw and assemble a representative sample of approximately 20% of the student body. The actual useable sample provided was 16%.

Limitations imposed upon the study by the necessities of the sample construction were discussed above. Confidence had to be placed in the professional judgement of the officials of college C who selected its representative sample. The sample included other questionable characteristics also, as an examination of data in Table 4.1 suggests. For instance, approximately 44% and 33% of the faculties of colleges A and B respectively did not participate. However, in as much as the nature of the present investigation is exploratory and descriptive, the data provided is not unduly skewed by the discrepancies in the sample to destroy its usefulness.

THE MEASURES OF INDEPENDENT VARIABLES

The independent variables were identified as the perceptual classifications described by the theory of institutional change. The second major sub-problem of the study posed in the introductory chapter was the development of a battery of instruments which provided the

classification. The requirements for the instrument were (1) to provide the data required by the study, (2) to be consistent with the theory of institutional change, and (3) to be operationally reliable.

The literature suggested a pattern that could be adapted to the needs of the present study. A multi-scale perceptual instrument was developed by Bills, Vance, and McLean.[1] The Bills' instrument measured the relationship between self-concept and acceptance of self, and was called the Index of Adjustment and Values. The IAV sampled a client's concept of self and ideal self and measured the level of self-acceptance by requiring him to respond to forty-nine trait words sample originally from Allport's list of 17,953 traits. It was established that the mean acceptance-of-self score of the standardized group divided the low self values (below mean scores) clients from the high self valuing (above mean scores) clients. It was further observed that the discrepancy scores, the difference between self conept and ideal concept, varied inversely with the acceptance of self score. Bills reported a reliability coefficient significant at the .001 level on each of the scales of the instrument. Validity was also reported in terms of a correlation with the Rorschach test.

In as much as the IAV was developed to measure personality based on perceptual assumptions, it was used as a model for the development of an Index of Institutional Characteristics. It was expected that the IIC would produce measures of the three components of propensity-to-change that were reliable and in accord with the theoretically predicted

---

[1]Robert E. Bills, Edgar L. Vance and Orison S. McLean, "An Index of Adjustment and Values," The Journal of Consulting Psychology, 15:257-263 (All data in this paragraph regarding the IAV were drawn from this source).

directional relationships.

The Scales

The measures required to produce a level of need were a self-concept of the present status of the college and a self-ideal concept of the college. The need component of propensity-to-change was defined as the discrepancy between present status and ideal status of the college as perceived by the individual. Consequently, the perceptual instrument included the following questions, the responses to which produced the required information:

> Scale I How much of the time do you believe each of the following characteristics of your college is adequate?
>
> Scale III Ideally, how much of the time do you believe each of the following characteristics of your college should be adequate?

Scale I will be identified as "self-adequacy" and Scale III as "ideal adequacy" in the remainder of the report.

The measures required to describe the level of the willingness component of propensity-to-change were assumed to be the valuing characteristics of the members of the colleges. Following the Bills-Vance-McLean rationale, it was assumed that the relationship between the level of valuing ascribed by self to the college and that ascribed to peers represented the level of acceptance of the college by the individual respondent.

The resultant index of valuing for the college provided the perceptual classification of the college according to the pattern in Table 2.1. The index of valuing, or perceptual classification, is also called the I.I.C., the Index of Institutional Characteristics. Consequently, the members of the colleges were requested to respond to

the following questions:

> Scale II How do you feel about the adequacy of each of the characteristics of your college?
>
> Scale V How does the average person in your peer group feel about the adequacy of each of the following characteristics of the college?

Scale II is to be identified as "self acceptance" and Scale V as "peer acceptance" in the remainder of the report.

Two additional scales were included in the perceptual instrument. They served two basic functions: (1) to provide additional face-validity for the respondents and (2) to facilitate the completion of the instrument. The scales thus required were the present status as ascribed to peers and ideal status as ascribed to peers. Consequently, the following questions were included as scales in the perceptual instrument.

> Scale IV How much of the time does the average person in your peer group believe each of the following characteristics of the college to be adequate?
>
> Scale VI Ideally, how much of the time does the average person in your peer group believe each of the following characteristics of the college to be adequate?

Scale IV will be identified as "peer concept of adequacy" and Scale VI as "peer ideal concept of adequacy" in the remainder of the report.

Summary of Scales

The Scales of the Perceptual Instrument. In order to gather the information necessary to the need and willingness components of propensity-to-change, six scales were developed to be included in the perceptual instrument.

I. Self Concept of Present Status - The perception of adequacy of the college ascribed to the college by the respondents.

II. Self Acceptance of Institution - The Value ascribed to the college by the respondents.

III. Ideal Concept of Institution - The ideal level of adequacy ascribed to the college by the respondents.

IV. Peer - Concept of Present Status - The perception of the adequacy of the college ascribed by respondents to their peers.

V. Peer Acceptance of Institution - The perception of the value of the college ascribed by respondents to their peers.

VI. Peer Ideal Concept of Institution - The perception of ideal level of adequacy of college ascribed by respondents to their peers.

Scores Produced by the Scales. The primary component of the propensity-to-change is measured by the relationship between self acceptance (scale II) and peer acceptance (scale V). This, the willingness scale component, is referred to as the "perceptual classification," the "index of valuing," or the "index of institutional characteristics."

One component of propensity-to-change is measured by the discrepancy between the self adequacy concept and the ideal adequacy concept.

The Items; the College Characteristics

Colleges can be described by many specific characteristics, as evidenced by the experience of Pace and Stearns, who identified 300

different college characteristics.[2] The criterion for selection of those used in the present study was the face-validity of each potential characteristic.[3] The twenty-nine selected characteristics were:

1. Purposes of the college
2. Relationships with other colleges
3. Alumni relationships
4. Relationship with local community
5. Administration-Faculty relations
6. Faculty-Student relations
7. Quality of instruction
8. Quality of research
9. Student personnel services
10. Quality of student body
11. Quality of student organizations
12. Quality of student leadership
13. Opportunities for cultural enrichment
14. Opportunities for scholarly work
15. Intellectual climate and stimulation
16. Opportunities for faculty advancement
17. Planning of educational programs
18. Housing for students
19. Housing for faculty
20. Library facilities
21. Advisement of students
22. Faculty role in academic decisions
23. Administrative role in faculty decisions
24. Faculty role in non-academic decisions
25. Cooperation among faculty
26. Academic standing of college
27. Scope of educational programs and services
28. Social/recreational opportunities
29. Quality of buildings and facilities

The descriptions of the perceptions of colleges by the members according to each of the six scales described above was then accomplished in terms of each of the twenty-nine characteristics.

---

[2]G. Robert Pace and George G. Stern, "An Approach to the Measurement of Psychological Characteristics of College Environments," The Journal of Educational Psychology. 49:269-277.

[3]Face-validity is defined as "the validity that is subjectively determined simply by the 'rightness' of the instrument." G. Lindzey and E. F. Borgatta, "Sociometric Measure," Handbook of Social Psychology. G. Lindzey, Ed. Vol I, pp. 422-23.

Reliability and Discrimination of the Measures of Institutions

Reliability. The reliability of the responses to the Index of Institutional Characteristics was estimated with the Hoyt Test of Weighted Instruments by the Analysis of Variance. In Table 4.2, the data that resulted from this analysis is presented.

Inspection of these data indicates that the I.I.C. scales are acceptably reliable, with the r_{tt} of each scale above .90. The standard error of measurement, also produced by the Hoyt analysis, was included to be used as a base figure for established scale descrepancy scores with a low probability of overlap. The classification schemes, to be discussed in chapter Five, are based on this figure as a measure of difference between extremes.

TABLE 4.2

RELIABILITY OF THE SIX SUB-SCALES OF THE INDEX OF INSTITUTIONAL CHARACTERISTICS

N = 50*

Measure		r_{tt}	SE_m
Scale I	Self Adequacy	.917	4.607
Scale II	Self Acceptance	.932	4.260
Scale III	Ideal Adequacy	.915	3.520
Scale IV	Peer Adequacy	.917	4.460
Scale V	Peer Acceptance	.936	4.070
Scale VI	Peer Ideal Adequacy	.926	3.530

*Equal interval sample of the total sample, proportionally distributed among colleges and membership groups.

Discrimination of Classification. The theoretical differences among colleges as reported by the perceptual classification the, willingness component of propensity-to-change, can be still futher examined in

relation to the reliability of that measure. The critical role of the self acceptance score (scale II) will become apparent in Chapter Five. Because of its critical nature in the theoretical classification being proposed in the present study, it was necessary to determine that the differences it reported were in fact differences among colleges and not caused by some other factor. It was possible to test at least some major source of contribution to difference other than the total institutional scene. The Least Squares Analysis model was used to examine the differences among the colleges in the study after the effects of the differences among the three membership groups (students, faculty, and administration) were removed. The results of that analysis of each scale are reported in Table 4.3.

TABLE 4.3

LEAST SQUARES ANALYSIS OF 2-WAY CLASSIFICATION WITH UNEQUAL FREQUENCIES IN THE SUB-CELLS OF ALL I.I.C. SCALES FOR ALL COLLEGES

N = 50*

Measure		F_a	F_b	ss
Scale I	Self Adequacy	11.621	1.942	.8332
Scale II	Self Acceptance	11.401	1.936	.8420
Scale III	Self Ideal Adequacy	11.743	1.970	.8810
Scale IV	Peer Adequacy	11.422	1.911	.8331
Scale V	Peer Acceptance	11.512	1.885	.8550
Scale VI	Peer Ideal Adequacy	11.089	1.822	.8441

F_a = Variance attributed to institutions (all significant at .01 level)
F_b = Variance attributed to administrative, faculty, and student groups (not significant at.05 level for each scale)
ss = Variance attributed to interaction (not significant at the .05 level for each scale)
* Equal interval sample of the total sample, proportionally distributed among colleges and membership groups

The analysis indicates that with the effects attributed to membership group and interaction taken out, the mean score for the colleges on the self adequacy scale was significant at the .01 level. The same condition was demonstrated for each scale. Also the means of the membership groups for each scale were not significantly different when the differences due to the institutions and interaction were removed. Therefore, there is a statistically significant difference in the means of each scale among the colleges, and there are not significant differences in the mean scores of the membership groups and interaction factors on

each scale. It was logical to assume that the Index of Institutional Characteristics did provide a reliable measure of some factor which was institutional in nature. The nature of the validity of the factor is considered in a following section.

Validity of the Classification. The validity of the perceptual classification is a question of major concern. It will be treated through an analysis of the dependent variables described in Chapter Two. Chapter Six deals with the question of validity in detail.

MEASURES OF DEPENDENT VARIABLES

Dependent Variables Related to Intra-Instrument Predictability.

The dependent variables included the need and ability components of propensity-to-change. The measure of the need was presented on page thirty-six above.

The ability component of propensity-to-change represents the degree of agreement among members in the value they ascribe to self and peer perceptions of the college -- the individual index of valuing. The measure of this component requires the classification that each member of each college produces by his responses to the Index of Institutional Characterisitcs. The distribution of the individual classifications will then be analyzed to test the theoretically predicted relationships among the perceptual classifications of colleges. No additional instrumentation is required for this analysis.

Dependent Variables Related to External Criteria Predictability.

The measurement of the criterion variables was accomplished by including the following questions in the general section of the study instrument:

In what campus organizations or clubs have you held membership during the past six months?

In what community or other non-college organizations or clubs do you participate regularly?

In what informal groups do you regularly participate? (e.g., recreation, discussion groups, etc.)

Taking into consideration the length of time that you have been a member of the college, what do you believe to be the most important problems facing the college at this time?

In what aspects or parts of the college do you find your greatest sources of pride?

Among the student body, faculty, administration, alumni, or other group associated with the college, what eight persons do you consider to be the most important overall leaders of the college, whether or not these persons hold office or are recognized by others to be leaders?

Responses to the above questions were tabulated according to a response classification which is discussed in Chapter Six.

ADMINISTRATION OF THE INSTRUMENTS

Each of the three colleges in the study was visited by competent personnel. It was planned to administer the study instruments to the entire student body and staff during a general convocation. At that time, all available students and staff completed the instrument. The procedure was satisfactorily implemented at colleges A and B. A modification was made necessary for college C, as local conditions made impossible the assembly of all students. Consequently, the representative sample described earlier was developed, and the group was assembled and the instrument administered to the students separately from the staff.

The actual administration of the study instruments presented no difficulties. Explicit instructions and explanations were published with

the test (See Appendix A). The test administrators observed that all but a very few subjects completed the entire instrument in less than one hour.

All instruments were hand tabulated by clerical assistants not otherwise involved in the study. The data were then coded for IBM cards and key-punched for subsequent machine tabulation. Both the machine and hand tabulations were used in the testing of the hypotheses, because it was not possible to compile all the needed information through one technique.

LIMITATIONS OF THE STUDY

Sample

Limitations imposed on the study by the sample were suggested previously. They were basically unequal distribution of respondents according to total size, sex, and within membership groups, and the absence of randomization procedures in the selection of the sample. Size of sample and the distribution limitations were controlled in part through the use of appropriate statistical treatment. However, sample bias was not adequately controlled.

Instrumentation

The study was limited by the use of an untested instrument. Normal control procedures were invoked in the pre-administration phase, but opportunities for refinement following an application were not available. Semantic errors and face-validity problems were controlled by a sampling of reactions from professional staff members currently involved in higher education.

Generalizability

The results of the study were, therefore, limited to the particular involved institutions, and the function of the study to an exploratory role. However, if there is any indication of predictability found through this study, evidence will warrant further application.

SUMMARY

The present study involved the staff and students of three small, liberal arts colleges. Each college was church related and located in the Middle West. The actual sample of the study was composed of the available students, instructors, and administrators in the three colleges.

The four perceptual classifications of colleges rendered by the Index of Institutional Characteristics (I.I.C.) were identified as the independent variables in the study. The perceptual instrument, the I.I.C., measured these variables through six sub-scales and twenty-nine characteristics of colleges. The scales were demonstrated to be both reliable and discriminating.

Two types of dependent variables were identified for study. The first class included two components of propensity-to-change which were identified as intra-instrument variables. The second class of dependent variables included criteria external to the theory being tested. Questions designed to elicit responses to make possible the analysis of these variables were drafted and included in the general instrument.

The instruments were administered directly to the subjects during visits to each campus rather than through a self-administration

technique. They were scored by hand and tabulated with assistance of IBM equipment.

The study was limited by the nature of the sample and the use of an untested instrument. The results, therefore, will be applicable only to the specific population of the present study.

CHAPTER V

THE PERCEPTUAL CLASSIFICATION

The theory of institutional characteristics involves the classifying of a college into one of four distinct types. The classification is based upon the relationship between the level of self acceptance of a college and the acceptance of a college ascribed to peer demonstrated by individuals defined as members of the college. The four classes of colleges were described previously and identfied as "highvaluing" (Hv), "overvaluing" (Ov),"undervaluing" (Uv), and "lowvaluing" (Lv).[1]

Chapter Five includes the definition of the classification factors, the presentation of the operational definitions of each classification, the procedure for making the classification, and the actual classification of each of the three colleges in the study.

CLASSIFICATION FACTORS

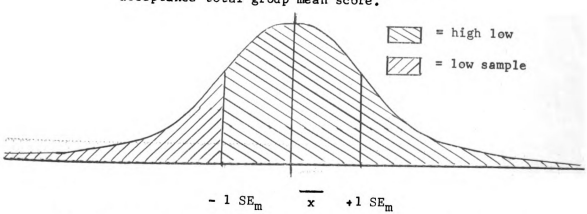
The determinants in the perceptual classification system are the measures of self and peer acceptance produced by the Index of Institutional Characteristics. It has been assumed that it is the relationship involving these factors which describes the "willingness" of a college to actuate opportunities for change. These are the relationships which provided the identification for the classification system.

---

[1]The symbols in parentheses will be used hereafter interchangeably with the specific name of the classification.

The relationship of primary importance in the classification system is between the mean self acceptance (scale II) score of the college and an external criteria. Because the study being reported in these pages was the first using the classification system, there were no normative data to refer to. Therefore, the mean self acceptance score of all participants in the study was defined as the normative score for this particular administration of the instrument. The relationship between the mean of the college and mean of the total administration of the instrument can be described as "high" or "low." For purposes of this study, "high" is defined to include all scores equal to (one standard error of measurement) or greater than the total group mean on Scale II. "Low" is defined as all scores less than the total group mean by at least one standard effor of measurement. The definition is presented graphically in Figure 5.1.

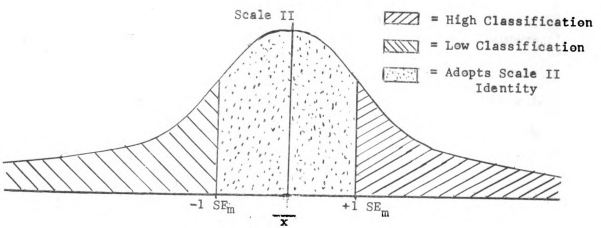
Figure 5.1. The defined possible relationship between the self acceptance mean score of a college and the self acceptance total group mean score.



The second relationship factor pertinent to the perceptual classification system is that which exists between the self acceptance mean score and the peer acceptance mean score of a given college. The relationship of the latter to the former is called "high" when the peer

acceptance mean score of the college is significantly higher than the mean self acceptance score of the college, and "low" if the peer acceptance mean score is significantly lower than the mean self acceptance score. If the peer acceptance mean score is neither significantly higher nor lower than the self acceptance mean score (i.e. does not fall outside the mean range of Scale II), it is assigned the name of its Scale II. The relationship as defined appears in Figure 5.2.

Figure 5.2. The defined relationship between Peer Acceptance Mean scores and the self acceptance mean scores of individual colleges



CLASSIFICATION PROCEDURES

Operational Definition of Each Perceptual Classification

Highvaluing colleges were defined as those in which members evidence high levels of valuing of self perceptions of the institution, and who ascribe equally high or higher levels of valuing to their peers. Operationally, a highvaluing college is one that is scored by the self

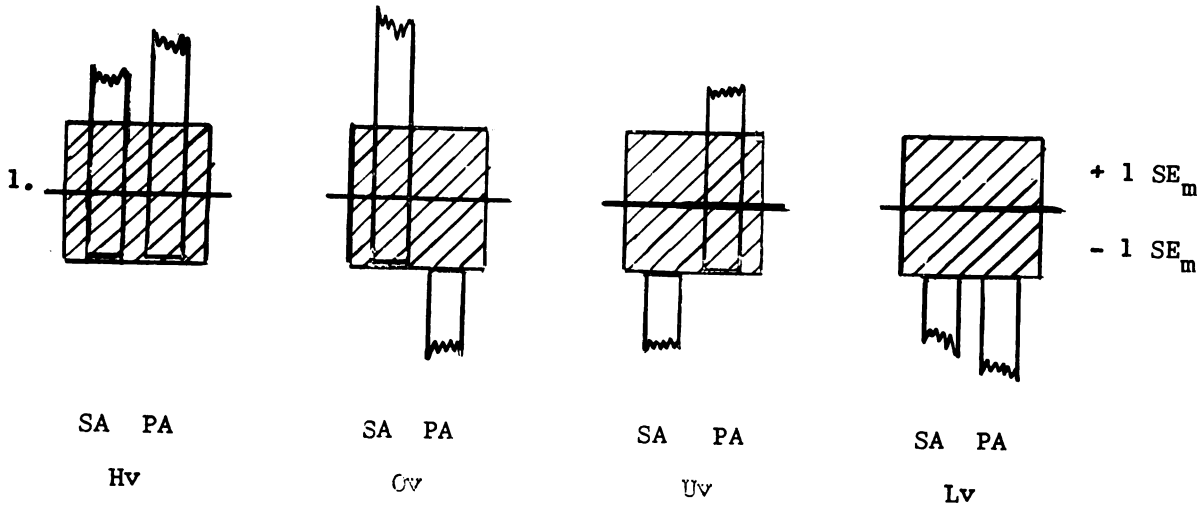
acceptance scale at a level equal to or higher than the total group mean score and by the peer acceptance scale as higher than the self acceptance scale. (See Figure 5.3)

Overvaluing colleges were defined as those in which members characteristically place greater value on their own perceptions of the college than on those they ascribe to peers. Expressed in operational terms, an overvaluing college is one that is scored by the self acceptance scale at a level equal to or higher than the total group mean self acceptance score, and by a peer acceptance mean score less than the self-acceptance score. (see Figure 5.3)

Undervaluing colleges were defined as those in which the members tend to value self perceptions of the college as less worthy than the perceptions they ascribe to peers. This difference in valuing is expressed on the I.I.C. as a self acceptance mean score less than the total group mean score, and a peer acceptance mean score equal to or greater than the self acceptance score. (See Figure 5.3)

Lowvaluing colleges were defined as those in which the members evidence little acceptance of self perception and self perception ascribed to peers. In operational terms, this defined relationship is expressed as a self acceptance scale score less than the mean of the total group self acceptance score, and a peer acceptance score less than that. (see Figure 5.3)

Figure 5.3. Four perceptual classifications of colleges according to the self and peer acceptance scale scores of the Index of Institutional Characteristics



Legend: 1. = Total Group S.A. Mean Score
S.A. = Self Acceptance (Scale II) Score
P.A. = Peer Acceptance (Scale V) Score

Classification Procedure

Colleges were classified according to the system defined above by the following procedure. First, it was necessary to determine the total group mean score for the self acceptance scale. This was accomplished by summing all individual totals for the self acceptance scale and dividing by the total number of individuals.

It was then decided to eliminate the individual self acceptance

and peer acceptance scores within each college that contributed least to the difference which made the college classifiable. Consequently, it was first necessary to remove all individual self acceptance scores that were not at least one standard error of measurement different from the total group mean self acceptance score. The next step involved removing from the remaining individuals all those whose peer acceptance score was not different from his self acceptance score by one standard error of measurement. The group of scores that remained were those that were significantly different from the mean of the self acceptance scale and demonstrated a significant difference between self and peer scores.

The scores that remained were then summed for each college, and means computed. After the scores were computed, the college was assigned the appropriate classification by reference to the operational definition for each classification.

THE CLASSIFICATION OF THE COLLEGES

Results of The Index of Institutional Characteristics

It was first necessary to tabulate the results of the administration of the Index of Institutional Characteristics (I.I.C.) in each of the colleges. The tabulation was accomplished and is reported in Table 5.1. The mean scores of each scale for each college were computed. The critical score in this analysis was the total group mean score of the self acceptance scale (scale II). It will be referred to in the next section.

TABLE 5.1

RESULTS OF THE ADMINISTRATION OF THE INDEX OF INSTITUTIONAL CHARACTERISTICS IN THREE COLLEGES

Scale		College A n-205	B n-191	C n-76	Total n-472
I	Self Concept	113.5	112.9	104.4	112.6
II	Self Acceptance	114.8	109.0	101.6	110.3
III	Ideal Concept	126.7	129.3	127.1	127.8
IV	Peer Concept	111.9	109.8	100.8	106.2
V	Peer Acceptance	111.2	106.0	99.5	107.2
VI	Peer Ideal Concept	120.2	117.8	123.6	119.8

The Classification

The classification process involved determining an institutional index based upon an adjusted mean score. The scores were adjusted within each college by: (1) the identification and elimination of all self acceptance (scale II) scores not one SE_m removed from the total group mean self-acceptance score; (2) the identification and elimination of all individual results in which the peer acceptance (Scale V) score was not one SE_m different from the individual self-acceptance score; and (3) the recomputation of new mean scores based on the remaining cases for each college. The classification was then made according to the operational definitions provided above.

Classification of College A. The results of the adjusted mean process for college A are reported in Table 5.2.

TABLE 5.2

SELF ACCEPTANCE AND PEER ACCEPTANCE MEAN SCORE ANALYSIS FOR CLASSIFICATION PURPOSES - COLLEGE A

Original	Adjustment 1 (SA scale corrected for one SE_m) Remaining n	Adjustment 2 (PA scale corrected for one SE_m) Remaining n	Resultant Mean Scores Self Acceptance	Peer Acceptance
205	159	84	116.0	109.5

The data in the above table make possible the identification of the perceptual classification of College A. The first meaningful relationship in the classification system is that which exists between the self-acceptance mean score of College A (116.0) and the total group mean (110.3).[2] The SE_m, used in the classification system as an indication of significant different, is 4.26.[3] Inspection indicates that the self acceptance score in College A is significantly higher than the total group score, that is, 116 is significantly greater than 110.3. The difference between the scores is 7.7, which is greater than one standard error of measure, 4.26. Therefore, the scale II factor of the perceptual classification of College A is "high."

The factor concerning the relationship between self acceptance and pear acceptance (i.e., between scales II and V) may now be identified. The scale V score for College A is significantly less than the scale II

[2]See Table 5.1.

[3]See Table 4.2, page 40.

score. That is, it is greater than one SE_m less. The difference between the two scores (109.5 and 116.0) is greater than 4.26. Therefore, the scale V factor of the perceptual classification of College A is, by definition, "Low."

The perceptual classification of College A, having met the operationally defined conditions, is "Overvaluing."

Classification of College B. The results of the adjusted mean processes for College B are presented in Table 5.3.

TABLE 5.3

SELF ACCEPTANCE AND PEER ACCEPTANCE MEAN SCORE ANALYSIS FOR CLASSIFICATION PURPOSES - COLLEGE B

Original n	Adjustment 1 (SA scale corrected for one SE_m)	Adjustment 2 (PA score adjusted for one SE_m)	Resultant Mean Scores Self Acceptance	Peer Acceptance
191	141	74	109.9	104.7

The data in the above table make possible the identification of the perceptual classification of College B. The first meaningful relationship in the classification is that which exists between the self-acceptance mean score of College B (109.9) and that of the total group (110.3). The SE_m used in the classification system as an indication of significant difference, is 4.26. Inspection indicates that the self-acceptance in College B is not significantly different from the total group score. That is, the difference between the scores, 0.4, is less than the SE_m 4.26. Therefore, the scale II factor of the perceptual classification, having satisfied the definition for "High," is so identified.

The factor concerning the relationship between self acceptance and peer acceptance (scales II and V) may now be identified. The scale V score for College B (104.7) is significantly less than the scale II score. That is, the difference between the scores, 5.2, is greater than one SE_m, 4.26.

Therefore, the scale V aspect of the perceptual classification of College B is, by definition, "Low."

College B, having been measured a "High-Low" self-peer acceptance relationship, is classified an "Overvaluing" college.

Classification of College C. The results of the adjusted mean computations for College C are presented in Table 5.4.

TABLE 5.4

SELF ACCEPTANCE AND PEER ACCEPTANCE MEAN SCORE ANALYSIS FOR CLASSIFICATION PURPOSES - COLLEGE C

Original N	Adjustment 1 (SA scale corrected for one SE_m)	Adjustment 2 (PA scale corrected for one SE_m)	Resultant Mean Scores Self Acceptance	Peer Acceptance
76	60	33	102.0	100.7

The data in the preceding table makes possible the identification of the perceptual classification of College C. The first meaningful relationship is that which exists between the self acceptance mean score of College C (102.0) and that of the total group. The SE_m, used in the classification system as an indication of significant difference, is 4.26. Inspection reveals that self acceptance in College C is significantly

less than the total group score: that is, the difference between the scores, 8.3, is greater than one SE_m, 4.26. Therefore, the scale II factor of the perceptual classification of College C is "Low."

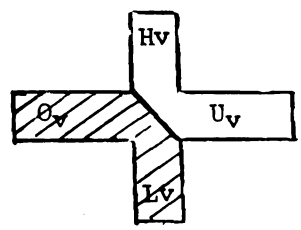
The factor concerning the relationship between self acceptance and peer acceptance scores may now be identified. The scale V score (peer acceptance) for college C (100.7) is not significantly different from the scale II score. That is, the difference between the scores, 1.3, is less than one SE_m, 4.26. Therefore, the scale V factor of the perceptual classification of College C is assigned the same identification as was given Scale II - "Low."

The Perceptual Classification of College C is "Lowvaluing".

SELECTION OF COLLEGES FOR ANALYSIS

The classification system has made possible the identification of two of the four theoretically possible types of colleges, Overvaluing and Lowvaluing. A review of the theory of institutional change suggests that the two are not the most extreme pair, and that the examination of the predictableness of the theory will not be facilitated by this situation. The relationships between and among the four points of the classification system is suggested in Figure 5.4.

Figure 5.4. Rleationships Within Percpetual Classification System



= Relationship of the Sample Colleges

It was decided, therefore, that the most adequate test of the two classifications provided by the sample would be between the most clearly Overvaluing and Lowvaluing College. Consequently, the predicted relationships will be tested between Colleges A and C, and reported in Chapter VI.

SUMMARY

Chapter Five has presented the process of perceptual classification, and the results of the classification of three colleges. The process included four basic steps:

1. establishing the total group self acceptance mean score to serve as a norm
2. identifying the difference-producing subjects in each college by screening self-acceptance scores using one SE_m as a criteria of difference (removed from group mean by one SE_m)
3. further refining the difference producing group by screening the remaining subjects who did not perceive at least one SE_m difference between self and peer acceptance (scale II and V scores)
4. comparing the resultant self and peer acceptance mean scores with the definition of perceptual classifications

The actual classification of the three colleges in the study is summarized in Table 5.5. The performance of the members of the colleges will be studied next according to their theoretically predicted performance on the previously identified criteria.

TABLE 5.5

SUMMARY OF THE PERCEPTUAL CLASSIFICATION OF THREE COLLEGES

College	N	Self Acceptance Mean Score	Peer Acceptance Mean Score	Perceptual Classification
A	205	116.0	109.5	Overvaluing
B	191	109.9	104.7	Overvaluing
C	76	102.0	100.7	Lowvaluing

CHAPTER VI

THE ANALYSIS

Chapter Six is devoted to the analysis of the data gathered to test the perceptual classification. Two classes of colleges were identified in the application of the Index of Institutional Characteristics, the Overvaluing and the Lowvaluing. The performance of the members of College A (Overvaluing) will be compared with College C (Lowvaluing) according to the predictions of the theory.

TESTS OF THE INTRA-INSTRUMENT CRITERIA

The Need Aspect of Propensity-to-Change

It was hypothesized that the measure of the need component of propensity-to-change varied predictably with the willingness component, the perceptual classification. "Need" was defined as the discrepancy between the present status (self concept) and the ideal status (ideal concept) as reported by members of a college. Consequently, it was hypothesized that:

> H_0: The discrepancy between the present status and ideal status is equal among the four perceptual classifications of colleges.

Stated operationally, the hypothesis is that: H_0: C = A. The theory predicts that members of Lowvaluing colleges will evidence greater need than members of Overvaluing colleges. The alternative hypothesis

is, then, H_1: C >A.

The measure of the Need component produced by the study was the discrepancy between the self concept scale (scale I) and the ideal concept scale (scale III). The computation of these differences is reported in Table 6.1.

TABLE 6.1

DETERMINATION OF THE NEED SCORES OF COLLEGES A AND C

Scale	Scale Scores by College	
	A (n = 205)	C (n = 76)
III (Ideal Concept)	25,983	9,663
I (Self Concept)	23,687	7,938
	2,296	1,725
Mean discrepancy = (Need Component) $\frac{(III-I)}{n}$	11.20	22.96

Inspection of Table 6.1 shows that the need scores appear to differ in the predicted direction, for C (22.96) is greater than A (11.20). In as much as an analysis of mean scores is called for to test these relationships, the Student's "t" is the appropriate statistic. The results of the tests of the operational hypothesis are reported in Table 6.2.

TABLE 6.2

RESULTS OF THE "t" TEST OF THE DIFFERENCE BETWEEN NEED SCORES FOR COLLEGES A AND C

College	N	Mean Difference	S_x^2	t	t	H_0
A	205	11.2	103.			
C	76	22.8	177.	4.79	3.37	Reject df = 120

The conclusion is warranted that the directionally appropriate differences between the mean need scores are significant. Therefore, there is a difference between colleges A and C that is parallel to the perceptual classification of the colleges.

The Ability Aspect of Propensity-to-Change.

The hypothesis was that the two colleges, A and C, differed in the proportion with which their members were assigned to the determined college classification group. The perceptual classification for college A who also classified the college as Overvaluing were grouped and compared with the members who did not classify it as Overvaluing. The classification of college C was Lowvaluing; therefore, the number of individual members of college C who classified the college Lowvaluing were grouped and compared with the members who classified it otherwise. The frequencies were then cast into a 2 x 2 contingency table for an examination of the distribution.

Null Hypothesis. H_0: College A and College C have equal proportions of members in the determined classification of the college

group. H_1: A greater proportion of members of College A were in the determined classification of the college group than were the members of college C.

Statistical Test. The X^2 test for two independent samples is chosen because the two groups are independent, and because the "scores" under study are frequencies in discrete categories.

Significance Level. Let $\alpha = .05$. N = 281, the number of members of the two colleges whose perceptual classifications were observed to be most different.

Rejection Region. The region of rejection consists of all values of X^2 which are so large that the probability associated with their occurrence is equal to or less than $\alpha = .05$. Since H_1 predicts the direction of the difference between the two groups, the region of rejection is one-tailed. For a one-tailed test, when df = 1, a X^2 of 2.71 or larger has probability of occurrence under H_0 of $p = \frac{1}{2}$ (.10) = .05. Therefore the region of rejection consists of all $X^2 = 2.71$ if the direction of the results is that predicted by H_1.

Decision. The probability of occurrence under H_0: for $X^2 = 8.13$ with df = 1 is $p < \frac{1}{2}$ (.10) = $p < .005$. Also, the expected frequency is less than the observed for the determined classification group of college A. In as much as the p is less than $\alpha = .05$, and the direction of the difference is in accordance with the H_1, the decision is to reject the H_0 in favor of the H_1. The conclusion that members of the Overvaluing college (A) demonstrated a greater degree of congruence between determined classification and individual classification than did members of the Lowvaluing college (C) is warranted.

TABLE 6.3

CHI SQUARE TEST OF THE SIGNIFICANCE OF THE DISCREPANCY OF INDIVIDUAL PERCEPTUAL CLASSIFICATION OF THE COLLEGE AND THE DETERMINED PERCEPTUAL CLASSIFICATION OF THE COLLEGES A AND C

College	Frequency of Individual Classification		
	Determined	All others	Total
A (Overvaluing) n = 205	97 (87.5)	108 (117.5)	205
C (Lowvaluing) n = 76	23 (32.5)	53 (43.5)	76
Totals	123	161	281

df = 1 $X^2 = 8.13$ $X^2_{.05} = 2.71$ (one-tailed) H_o: Reject

TESTS OF EXTERNAL CRITERIA

Frequency of Problem Perception and Perceptual Classification of Colleges

The number of problems reported by members of the colleges was studied by comparing the distribution of those who reported more than two problems with those who reported two or less. The former was defined as "many" problems. The hypothesis was that members of the Low-valuing college, C, reported more problems than members of the Over-valuing college, A. The test of the null hypotheses is reported in Table 6.4.

H_o: C = A H_1: C > A

TABLE 6.4

CHI SQUARE TEST OF SIGNIFICANCE OF THE DISCREPANCY OF THE NUMBERS OF PROBLEMS PERCEIVED BY MEMBERS OF COLLEGES A AND C

College	N	Problems reported: More than two	Less than two	Totals
A (Overvaluing)	206	152 (164.5)	52 (41.5)	206
C (Lowvaluing)	72	68 (57.5)	4 (14.5)	72
Totals		222	56	278

df = 1 $X^2 = 12.85$ $X^2_{.05} = 2.74$ (one-tailed) H_o: Reject

The test indicates that there is a significant difference between the colleges regarding the number of problems perceived by members. Inspection of the expected frequencies shows that the difference was in the hypothesized direction. The conclusion that members of the Lowvaluing college (C) perceived more problems than the members of the Over-valuing college (A) is warranted.

Number of External Problems and Perceptual Classification.

The discrepancy between the Overvaluing college (A) and the Low-valuing college (C) in the number of external problems perceived and reported was studied. It was hypothesized that members of the Low-valuing college perceived and reported more problems classified "external" than members of the Over-valuing college.

The problems reported by members were classified according to a logically determined classification system. Accordingly, "external" problems were defined operationally as those included in one of the following categories.

1. Buildings and facilities,(inadequate)
2. Community Relations
3. Financial Problems (any problem related to the need for additional funds such as inadequate salaries and supplies)
4. Accreditation Problems
5. Enrollments (requirement, the need for "better" and additional students)
6. The control of the college (dissatisfaction with church control, too religious)
7. Need for additional faculty, or non-professional personnel

Three judges were trained in the use of the classification system. Each classified individually the problems reported by twenty-five students, selected as a 5% random-interval sample. The system was modified until the judges were able to classify with a ninety-five per cent level of agreement.

The test of the null hypothesis is reported in Table 6.5.

H_o: C = A H_1: C > A

TABLE 6.5

CHI SQUARE TEST OF SIGNIFICANCE OF DISCREPANCY OF THE MEMBERS OF EXTERNAL PROBLEMS PERCEIVED BY MEMBERS OF COLLEGES A AND C

College	N	Type of Problem External	Other	Total
A (Overvaluing)	205	131 (145.1)	62 (47.9)	193
C (Lowvaluing)	76	69 (54.9)	4 (18.1)	73
Totals		200	66	266

df = 1 X^2 = 10.17 $X^2_{.05}$ = 2.71 (one-tailed) H_o: Reject

It is demonstrated in Table 6.5 that the difference in distribution of external problems perceived by members of the two colleges was significant. Inspection of the expected frequencies indicated

that the difference was as hypothesized. Therefore, the conclusion that members of the Lowvaluing college (C) perceived more external problems than did members of the Overvaluing college (A) is warranted.

Number of Organizational Participations and Perceptual Classification

The difference between the Overvaluing college (A) and the Lowvaluing college (C) in the number of organizational participations reported by members was studied. An "organizational participation" was defined as a reported membership or regular participation in a campus or off-campus organization, or an informal group. The number of participations reported by each member was tabulated. The median frequency of participation was five. All frequencies greater than the median were defined as "many" participations. The hypothesized relationship was that members of the Overvaluing college participated in more organizations than members of the Lowvaluing college. The operational hypothesis, then, was that members of the Overvaluing college reported more frequencies of participation above the median than members of the Lowvaluing college. The null form was tested, and the results are reported in Table 6.6.

H_o: A = C H_1: A > C

TABLE 6.6

CHI SQUARE TEST OF SIGNIFICANCE OF DISCREPANCY OF THE NUMBER OF ORGANIZATIONAL PARTICIPATIONS REPORTED BY MEMBERS OF COLLEGES A AND C

College	N	Frequency of Organizational Participation		Total
		Above Median	Median or less	
A (overvaluing)	205	79 (76.88)	126 (129.1)	205
C (lowvaluing)	75	26 (28.1)	49 (46.9)	75
Totals		105	175	280

df = 1 $X^2 = 0.35$ $X^2_{.05} = 2.71$ (one-tailed) H_o: Accepted

It is demonstrated by the chi square test reported in Table 6.6 that no significant difference exists between colleges A and C with respect to the number of organizations members participate in. Therefore, it is concluded that the theoretically predicted relationship between colleges A and C did not exist.

The Number of Off-Campus Organizational Participations and Perceptual Classification

The discrepancy between the Overvaluing college, A, and the Lowvaluing college, C, in the frequency of participation in off-campus organizations was studied. Off-campus organizational participations were defined as organized activities regularly participated in and not directly related to the college. Members of colleges were provided an opportunity to report as many as eight such participations. It was hypothesized that the members of the Lowvaluing college participated in more off-campus activities than members of Overvaluing college. The hypothesis was tested in the null form. The test is

reported in Table 6.7

H_o: C = A H_1: C > A

TABLE 6.7

CHI SQUARE TEST OF SIGNIFICANCE OF THE DISCREPANCY OF THE NUMBERS OF OFF CAMPUS ORGANIZATIONAL PARTICIPATIONS REPORTED BY MEMBERS OF COLLEGES A AND C

College	N	Number of Off-Campus Organizations Reported		Total
		0	1 - 8	
A (Overvaluing)	205	107 (99.9)	98 (105.1)	205
C (Lowvaluing)	76	30 (37.1)	46 (38.9)	76
Totals		137	144	281

df = 1 X^2 = 3.64 $X^2_{.05}$ = 2.71 (one-tailed) H_o: Rejected

It is demonstrated by the chi square test that a significant difference exists between College A and C with respect to the number of off-campus activities reported by the members. The significant difference was also in the predicted direction, as an inspection of the expected frequencies indicates. Therefore, it is concluded that the theoretically predicted relationship regarding frequency of off-campus organizational participation of members of colleges A and C materialized.

Number of Informal Group Activities and Perceptual Classification

The difference between the Overvaluing college (A) and the Lowvaluing college (C) in the number of informal group activities was studied. Informal group activities were defined as activities in which

the member participated regularly, but which lacked a formal structure. The members were afforded an opportunity to report as many as eight such activities. The responses were tabulated and dichotomized according to frequencies of two or less and those greater than two, in order to maintain expected cell frequencies of adequate size. It was hypothesized that the members of Lowvaluing college participated in more informal activities than the members of the Overvaluing college. The null form of the hypothesis was tested and is reported in Table 6.8.

H_0: C = A H_1: C > A

TABLE 6.8

CHI SQUARE TEST OF THE SIGNIFICANCE OF THE DISCREPANCY OF THE MEMBERS OF INFORMAL GROUPS ACTIVITIES REPORTED BY MEMBERS OF COLLEGES A AND C

College	N	Number of Informal Activities		Total
		Two or Less	More than two	
A (Overvaluing)	204	125 (124.7)	79 (79.3)	204
C (Lowvaluing)	74	45 (45.3)	29 (28.7)	74
Totals		170	108	278

df = 1 X^2 = 0.0049 $X^2_{.05}$ = 2.71 (one-tailed) H_0: Accepted

It is demonstrated by the chi square test that there is no significant difference between Colleges A and C with respect to the number of informal group activities reported by the members. Therefore, it is concluded that the theoretically predicted relationship regarding informal group activities was not demonstrated for colleges A and C.

Number of Leaders and Perceptual Classification

The relationship between perception of leadership and the per-

ceptual classification of the college was examined. Each respondent was requested to identify eight individuals whom he considered leaders. The distribution of the frequency of leader identification was tabulated for each college. The frequencies were collapsed to eliminate small cell frequencies and dichotomized between those reporting five or fewer leaders or six or more. It was hypothesized that members of Lowvaluing college perceived more leaders than did members of the Overvaluing college. The hypothesis was tested in its null form. The test is reported in Table 6.9.

H_o: C = A H_1: C > A

TABLE 6.9

CHI SQUARE TEST OF SIGNIFICANCE OF THE DISCREPANCY OF THE NUMBER OF LEADERS PERCEIVED BY MEMBERS OF COLLEGES A AND C

College	N	Number of Leaders 0-5	6-8	Total
A (Overvaluing)	204	95 (86.6)	109 (117.4)	204
C (Lowvaluing)	74	23 (31.4)	51 (42.6)	74
Totals		118	160	278

df = 1 X^2 = 8.20 $X^2_{.05}$ = 2.71 (one-tailed) H_o: Rejected

The chi square test demonstrated that the two colleges differed significantly in the number of leaders identified by the members. Inspection of the nature of the difference indicated that it was in the hypothesized direction. Therefore, the alternate hypothesis was accepted. It is concluded that members of the Lowvaluing college did perceive more leaders than members of the Overvaluing college.

Number of Status Leaders and Perceptual Classification

It was hypothesized that members of Overvaluing college perceived more status leaders than did members of the Lowvaluing college. It was necessary to define "status leaders" operationally in order to classify the responses of the members of the two colleges. Consequently, a classification scheme based on logically derived categories was developed. Three judges were able to use the system to classify a five percent equal interval sample of the responses with a ninety-five percent level of agreement. The definition of "status leaders", accordingly, is as follows:

> Status Leaders are individuals so identified by the members of the college for one or more of the following reasons:
>
> 1. Professional accomplishments, contributions, or experience
> 2. Professional skills, described as -
>   -efficient or good worker
>   -capable
>   -diciplined
>   -developes the culture
>   -good over-all leader
>   -good student
>   -academic ability
>   -counsels - gives sound advice
> 3. Position held
>   -president
>   -administrative assignment
>   -chairman of an organization
>   -teacher
>   -Board of Trustees
>   -Student government
>
> All other leaders were called "non-status."

The hypothesis was tested in the null form, and is reported in Table 6.10.

H_o: A = C H_1: A > C

TABLE 6.10

CHI SQUARE TEST OF SIGNIFICANCE OF THE DISCREPANCY OF THE NUMBER OF STATUS LEADERS PERCEIVED BY MEMBERS OF COLLEGES A AND C

College	N	Type of Leadership		
		Status	Non-Status	Total
A (Overvaluing)	205	122 (113.9)	83 (91.1)	205
B (Lowvaluing)	74	33 (41.1)	41 (32.9)	74
Totals		155	124	279

df = 1 X^2 = 4.68 $X^2_{.05}$ = 2.71 (one-tailed) H_o: Rejected

The test indicated that the two colleges differed significantly in the type of leadership identified by the members. The significant difference was in the theorized direction, i.e. college A members identified more leaders than did members of college C. Therefore, the null hypothesis was rejected and the alternate accepted. It is concluded that members of the Overvaluing college identified more status leaders than members of the Lowvaluing college.

Number of Aspects of Pride and Perceptual Classification

It was hypothesized that members of Overvaluing colleges took more pride in the college than did members of Lowvaluing colleges. The measure of pridefulness in the present study was a comparison of the number of aspects or pride reported by members. The instrument provided an opportunity for members to report three aspects of the college in which they felt pride. The number of members reporting at least three sources of pride was compared with the number who reported less

than three. The distribution of members according to that dichotomy was tested for significant difference through the null form of the hypothesis. The results of the test are reported in Table 6.11.

H_o: $A \simeq C$ H_1: $A \succ C$

TABLE 6.11

CHI SQUARE TEST OF THE SIGNIFICANCE OF THE DISCREPANCY OF THE NUMBER OF ASPECTS OF PRIDE PERCEIVED BY MEMBERS OF COLLEGES A AND C

College	N	Aspects of Pride three	Aspects of Pride less than three	Total
A (Overvaluing)	204	168 (168.8)	36 (35.2)	204
C (Lowvaluing)	74	62 (61.2)	12 (12.8)	74
Totals		230	48	278

df = 1 $X^2 = 0.05$ $X^2_{.05} = 2.71$ (one-tailed) H_o: Accepted

The test indicated that the distribution of frequencies was not significantly different from chance, and the null hypothesis was accepted. Therefore, it is concluded that the Lowvaluing College and the Overvaluing college did not differ with respect to the number of aspects of pride reported by members.

Type of Aspects of Pride and Perceptual Classification

The nature of the sources of pride reported by members of the colleges was also studied. It was hypothesized that member of Overvaluing colleges perceived more sources of pride that were people-oriented than did members of the Lowvaluing college. The responses of the members were classified according to a logically derived classification system which operationally defined "people-oriented" sources of pride.

A panel of three judges (individually) were able to classify the responses of a five per cent equal interval sample of the instrument with a ninety-five per cent level of agreement. The following items were included in the definition:

1. Individuals
2. Personal satisfaction
3. Acceptance by people
4. Friendliness

All others were classified as the "non-people." The null form of the hypothesis was tested. The results of the test are reported in Table 6.2.

H_o: A ≅ C H_1: A ≻ C

TABLE 6.12

CHI SQUARE TEST OF THE SIGNIFICANCE OF THE DISCREPANCY OF THE NUMBER OF PEOPLE-ORIENTED SOURCES OF PRIDE REPORTED BY MEMBERS OF COLLEGES

College	N	Sources of Pride		Total
		People	Non-people	
A (Overvaluing)	205	80 (83.9)	125 (121.1)	205
C (Lowvaluing)	76	35 (31.1)	41 (44.9)	76
Total		115	166	281

df = 1 X^2 = 1.13 $X^2_{.05}$ = 2.71 (one-tailed) H_o: Accepted

The test demonstrated that the distribution of frequencies was not significantly different from chance, and the null hypothesis was accepted. Therefore, it is concluded that the Lowvaluing and Overvaluing colleges did not differ in the number of people-centered sources of pride perceived by members.

SUMMARY

Tests of dependent variables in the study of a theory of institutional characteristics were reported in Chapter Six. Two components of propensity-to-change were examined in relationship to the third, the perceptual classification. Both ability and need proved to be related in the predicted direction to the perceptual classification of the two colleges in the study. Four external criteria were also tested for predictability with respect to the perceptual classification of the two colleges. Both the number and kind of problems (as classified) were related to the perceptual classification according to the theoretically predicted direction. The number and kind of organizational participations of members were independent of the classification of the college. The locus of organizational participations was significantly different for the two colleges.. It was demonstrated that the identification of status leaders was as theoretically predicted, although the total number of leaders perceived was not. The test indicated also that both number and nature (as classified) of perceived sources of pride were independent of the perceptual classification of the colleges studied.

The results of the tests of the hypotheses are summarized in Table 6.13.

TABLE 6.13

SUMMARY OF TESTS OF THE HYPOTHESES

Hypothesis	Test Used	H_o	H_1
1. Need	"t"	Rejected	Accepted
2. Ability	X^2	Rejected	Accepted
3. Problem Perception			
a. Number of Problems reported	X^2	Rejected	Accepted
b. Number of External Problems	X^2	Rejected	Accepted
4. Organizational Participation			
a. Number of organizational participations	X^2	Accepted	Rejected
b. Number of off-campus participations	X^2	Rejected	Accepted
c. Number of informal groups	X^2	Accepted	Rejected
5. Leadership identification			
a. Number of leaders	X^2	Rejected	Accepted
b. Number of status leaders	X^2	Rejected	Accepted
6. Aspects of Pride			
a. Number of sources of pride	X^2	Accepted	Rejected
b. Number of people-sources of pride	X^2	Accepted	Rejected

CHAPTER VII

SUMMARY, CONCLUSIONS, IMPLICATIONS

SUMMARY

Purpose of the Study

Colleges are faced by a need for growth. Enrollment increases are apparently related to an ever increasing population and an observable trend for a larger proportion of the population to attend college. Increased enrollments make necessary other changes in the institutional environment of higher education. The attitude evidenced by a college toward change appears to be one meaningful determinant of the future development of that college. It was the purpose of the present study to investigate the propensity-to-change of selected colleges.

The Problem of the Study

The problem of the study was to explore and describe the propensity-to-change of colleges according to the way in which they were perceived by the members. The problem included developing a theoretical frame of reference based on perceptual assumptions, projecting predicted behaviors consistent with the theory, drafting and testing a perceptual instrument that classified colleges according to the theory, identifying and measuring criteria to test the theoretical predictions, and testing the theory.

The Design

Propensity-to-change was defined to include three components: a need-for-change factor, an ability-to-change factor, and a willingness-to-change factor. The study of these elements employed an exploratory design based upon the identification of a series of dependent variables and the testing of the variables in accordance with appropriate statistical techniques. The level of confidence for the rejection of the null hypothesis was set at .05.

Instrumentation

A six-scale perceptual instrument was developed. It sampled the perceptions of members regarding the adequacy of the college, their acceptance of the college, the ideal concept (adequacy) of the college, and the adequacy, acceptance and ideal adequacy of the college ascribed to their peers. Twenty-nine characteristics of colleges were selected to provide the perceptual cues. The instrument, also called the Index of Institutional Characteristics, has a reliability coefficient of more than .90 for each of the six scales. It provided measures of the components of propensity-to-change as:

1. Need -- the discrepancy between the adequacy and ideal adequacy scores.

2. Willingness -- the valuing of the college as described by the relationship between the self-acceptance and peer-acceptance scores.

3. Ability -- the "likemindedness" of the members of a college as measured by the level of agreement among individual members in the value they ascribe to self and peer perceptions of college (the willingness to score).

The willingness score was also called the "institutional index."

Criterion instruments were developed in the form of a free-response question pertaining to each of the external variables: problem perception, organizational activity, leader identification, and perception of aspects of pride.

Results

The tests of the hypotheses indicated that there were directionally significant differences between two colleges of different perceptual classification. The areas in which significant differences were found are the two intra-instrument relationships, problem perceptions, location or organizational participation, and the number and kind of leaders perceived.

The tests also revealed areas in which no significant differences between the two colleges were observed. They were the number and kind of organizational participations and the number and kind of sources of pride perceived by the members.

The study also resulted in a reliable instrument, the Index of Institutional Characteristics, for use in assessing the propensity-to-change of a college.

Limitations of the Study

Three primary limitations contaminate the results of the study: the sample, the instrumentation, and procedural considerations. The sample was not pre-selected specifically for the testing of this theory. Consequently there were questionable characteristics that served as uncontrolled sources of error. The sex bias caused by the inclusion of one non-coeducational school (college A) is an example of this limitation. The instrumentation limitation was generic to this type of study. One

of the purposes of the study was to examine the validity of the classification produced by the instrument. One might call the inaccuracies of prediction limitations of the theory. However, such was not the case, for the study was designed to discover such limitations. The design, therefore, included relatively unconventional techniques, such as the Becker constructed typology and the one-tailed Chi-square test. The lack of conclusive evidence as a result of the analysis was, still, a result of the design limitations. Replication may well provide opportunities to modify such limitations.

CONCLUSIONS

Conclusions based on the findings of the present study cannot be logically extended beyond the specific colleges involved. Within this and the limitations presented above, the following conclusions seem warranted.

1. The propensity-to-change of a college, as defined in this study, can be measured by an instrument called the Index of Institutional Characteristics.

2. The Index of Institutional Characteristics measured reliable some perceptions of colleges held by college members.

3. The Index of Institutional Characteristics classified colleges into a theoretically derived perceptual classification. The classification system was consistent with predicted behaviors in five out of nine tests. Further refinement and development of both the classification system and the instrument is, therefore warranted.

4. Certain conclusions descriptive of the colleges representa-

tive of the two classes identified by the study are warranted.

College A can be described as including members who

a) overvalued self perceptions of the college

b) demonstrated little perception of a need to improve or grow (that is, the present status was not far removed from ideal status)

c) evidenced ability to work together on commonly perceived problems

d) did not recognize a broad range of problems

e) identified a visible leadership structure

f) participated in organizations without special patterning

g) and identified pridefully aspects of the college not differently than the other college.

College C can be described as including members who -

a) undervalued both self and peer perceptions of the college

b) evidenced awareness of great need to improve

c) demonstrated little ability to work together to improve the college

d) recognized a broad range of problems

e) identified little leadership within the college

f) participated in organizations not differently than college A

g) did not differ from the other college in reported sources of pride

5. Overvaluing and Lowvaluing colleges have similar member behavior in organizational participation and identification of sources of pride.

IMPLICATIONS

For Theory Development

Several implications for the theory of institutional change appear to result from the study.

(1) The two classes of colleges identified in the present study, Overvaluing and Lowvaluing, were about as similar as they were dissimilar according to the behavior of the members. This observation suggests two implications.

(a) The four types of the classification are not discrete groupings of colleges but represent selected differences. There is, perhaps, a specific difference among the four types with respect to propensity-to-change, but this difference is not necessarily observable in the behaviorial aspects of the institutions.

(b) The second implication is that the behaviorial characteristics selected to compare with the perceptual classification were inappropriate. The problem of identifying "appropriate" behaviors of college members to serve as descriptive data for the perceptual classification system is one that requires extensive additional investigation.

(2) The study implied relationships among the three components of propensity-to-change that can be of service to administrators. Practices within the two classifications that were studied can be implied within the theoretical framework.

(a) Overvaluing College. Administrative practices appropriate to College A, exclusive of the specific local conditions and assuming a movement toward Highvaluing classification characteristics as "growth," are:

- identification of major problems within the membership
- resolution of the major problems with dispatch
- involvement of more people in problem solving in order that problem perception might become more acute
- identification of potential leaders, both staff and students, and making them visible through real opportunities to make meaningful decisions on the policy level
- promotion of involvement in face-to-face activities on all levels to stimulate greater appreciation of contributions made by peers
- extend involvement into non-college community

(b) Lowvaluing College. Administrative practices appropriate to College C, exclusive of specific local conditions and assuming "growth" to mean movement toward Highvaluing characteristics, are:

- classify problems reported by members according to internal and external sources
- concentrate on that group of problems which bring most immediate sense of accomplishment, such as, those that bring confidence in the college leadership
- concurrently, introduce resource leadership from outside the college to concentrate on the solution of a specific, limited problem from the selected group of problems
- provide for broad involvement of staff and students in specific problem solving on a level that assures success
- identification of potential leaders and provision of opportunities for them to become visible through real contributions to meaningful policy level decisions
- promote face-to-face involvement activities on all levels to stimulate greater valuing of contributions made by peers.
- extend involvement activities into non-college community
- promote "people-centered" sources of pride in the colleges

For the Instrument

The present study involved the development and examination of a perceptual instrument, the Index of Institutional Characteristics (I.I.C.). The following implications relate specifically to the instrument.

(1) A question about the inter-relationship of the scales was raised by the study. For instance, was there linkage between the scales that makes invalid any resultant measure? Is the lack of the independence of scales a debilitating situation? This implication extends beyond the present study and includes all perceptual instrumentation. Still, evidence is not available to treat it exhaustively.

(2) A further implication for the I.I.C. deals with the operational definitions of the specific classifications. For instance, why is the definition of "high" broader than that for "low"? Is not a middle classification called for?

(3) The problem of the validity of the selected characteristics was not resolved in the present study.

(4) The present study indicated a weakness in identification of cut-off scores for classification purposes. The implication is for the development of norms on a broad basis.

Implications for Further Study

Many questions have been suggested by the present study. Some of them can be responded to through normative study, others from continued investigation of the literature. Some others will require exhaustive testing in an experimental design. Some will, perhaps, require inventive contemplation. Several questions requiring further study are presented below.

(1) Will the I.I.C. classify colleges into each of the four classes?

(2) Will a factor analysis of available data suggest the nature of the factor which causes colleges to be classified differently?

(3) What behaviorial factors are related to change in institutions of higher education?

(4) Does the theory of institutional change comprehend the college environment completely enough to serve as a general theory of institutional change?

(5) What is the degree and effect of linkage among the scales of the I.I.C.?

(6) How can the four classes of colleges be defined more precisely?

(7) What are the relationships among institutions of the same classification?

(8) What sequential relationships exist among the four perceptual classifications? Can a technique for measuring the colleges over a period of time be developed and applied?

(9) What is the nature of the logically defined components of propensity-to-change - need, willingness and ability?

(10) What is the effect of these components on each other within a specific college?

(11) Can the perceptual classification be correlated with a cultural continum (i.e., the sacred-secular continum)?

(12) Can the perceptual classification be applied to historical studies of colleges in order that the theory be tested over a temporal dimension?

One of the purposes of an exploratory study is to raise pertinent questions about a given area of knowledge. The present study served this purpose admirably, for it has raised more problems than it has resolved. It has been demonstrated through this study, however, that the area of concern is not devoid of subject matter nor of significance. The need for a replication has been made apparent both by the adequacies and the inadequacies of the present study. Consequently, the value of the study is assured.

BIBLIOGRAPHY

Barzun, Jacques. Teacher in America. Garden City, New York: Doubleday Ancho Books, 1944.

Becker, Howard. Through Values to Social Interpretation. Durham, North Carolina: Duke University Press, 1950.

Bills, Robert E. "Attributes of Successful Educational Leaders," The Bulletin of the Bureau of School Service, XXVI (December, 1953).

Bills, Robert E. "About People and Teaching," The Bulletin of The Bureau of School Service, XXVIII (December, 1955).

Bills, Robert E., Edgar L. Vance, and Orison S. McLean, "An Index of Adjustment and Values," Journal of Consulting Psychology, 15:257-263.

Brogden, H.E. "The Effect of Bias Due To Difficulty Factors in Product-Moment Item Inter-Correlations on the Accuracy of Estimation of Reliability," Educational and Psychological Measurement, 6:517-520, 1952.

deKiewiet, C. W., "How Different Types of Institutions Are Planning for the Future," Action UnderWay to Meet the Rising Tide of Enrollment in American Colleges and Universities. (Washington, D.C.: American Council on Education, 1956).

Dixon, Wilfrid J., Frank J. Massey, Jr. Introduction To Statistical Analysis. New York: McGraw-Hill Book Company, Inc., 1957.

Eells, Walter Crosby (Compiler). College Teachers and College Teaching: An Annotated Bibliography, Atlanta, Georgia: Southern Regional Association, 1957.

Eells, Wlater Crosby (Compiler) College Teachers and College Teaching: Supplement to the Annotated bibliography published in 1957. Atlanta: Southern Regional Education Board: 1959.

Freedman, Ronald, Albert Mayer, and John F. Thaden. Future School and College Enrollments in Michigan: 1955-1970. A Report to the Michigan Council of State College Presidents, Prepared by the Population Study Group, Higher Education Study. Ann Arbor, Michigan: J. W. Edwards, Publisher, Inc., 1954.

Feladarci, Arthur P. and Jacob W. Getzels. The Use of Theory in Educational Administration. Stanford, California: Stanford University Press, 1955.

Griffiths, Daniel. Administrative Theory. New York: Appleton-Century-Crofts, Inc., 1959.

Griffiths, Daniel E. Human Relations in School Administration. New York: Appleton-Century-Crofts, Inc., 1956.

Gross, Llewellyn (ed.). Symposium on Sociological Theory. Evanston, Illinois: Row, Peterson and Company, 1959.

Guilford, J. P. Psychometric Methods. New York: McGraw-Hill Book Company, Inc., 1954.

Guilford, J. P. Fundamentals of Statistics in Psychology and Education. New York: McGraw-Hill Book Co., 1956.

Havemann, Ernest, and Patricia Salter West. They Went To College. New York: Harcourt, Brave and Company, 1952.

Higher Education in A Decade of Decision. Educational Policies Commission (Washington, D.C.: National Education Association, 1957).

Homans, George C. The Human Group, New York: Harcourt Brace, 1950.

Hopper, Robert, Robert E. Bills. "What's A Good Administrator Made of?" School Executive, 74:93-96, March, 1955.

Hoyt, Cyril J., Clayton L. Stunkard. "Estimation of Test Reliability for Unrestricted Item Scoring Methods," Educational and Psychological Measurement, 12:756-658, 1952.

Hutchins, Robert M. The Higher Learning in America. New Haven: Yale University Press, 1936.

Jackson, R. B. W., and G. A. Ferguson. Studies on the Reliability of Tests. Toronto, Canada: The University of Toronto, 1941.

Jamrich, John X. "A New College." East Lansing, Michigan: Center for The Study of Higher Education, Michigan State University, 1959. (Multilithed).

Keezer, Dexter M. Financing Higher Education, 1960-70. New York: McGraw-Hill Book Company, Inc., 1959.

Lecky, Prescott. Self-Consistency. New York: Island Press, 1945.

Lewin, Kurt. "Group Decision and Social Change." In T. M. Newcomb, E. L. Hartley, E. E. Maccoby (Editors), Readings in Social Psychology. New York: Henry Holt and Company, 1958.

Lewis, Don, and C. J. Burke, "The Use and Misuse of the Chi-Square Test," Psychological Bulletin, 46:433-490, November, 1949.

Lindzey, Gardner (ed). Handbook of Social Psychology. Vol. I, Theory and Method. Cambridge, Massachusetts: Addison-Wesley Publishing Company, Inc., 1954.

Long, J. A. and P. Sandiford. The Validation of Test Items. Toronto, Canada: The University of Toronto, 1935.

Lorimer, M. F. "Annotated Bibliography of Readings in Higher Education." East Lansing, Michigan: Michigan State University, Office of Evaluation Services, 1953. (Mimeographed).

McConnell, T. R. "Diversification in American Higher Education," Current Issues in Higher Education: Resources for Higher Education. Proceedings of the 11th Annual Conference on Higher Education, Association for Higher Education (Washington, D.C.: National Education Association, 1956).

McDonald, Ralph W. (ed). Current Issues in Higher Education 1950. Washington, D. C.: National Education Association, 1950.

McGrath, Earl J. The Graduate School and The Decline of Liberal Education, Bureau of Publications, Teachers College, New York: Columbia University Press, 1959.

Mayhew, Lewis B. "Research in Higher Education." Paper read at Liberal Arts Committee of the North Central Association of Colleges and Secondary Schools Workshop, East Lansing, Michigan, August, 1959.

Melby, Ernest O. Education for Renewed Faith in Freedom. Columbus, Ohio: The Ohio State University Press, 1959.

Murphy, Gardner. Human Potentialities. New York, Basic Books, Inc., 1958.

Pace, C. Robert, and George G. Stern. "An Approach to the Measurement of Psychological Characteristics of College Environments," The Journal of Educational Psychology, 49: 269-277, October, 1958.

Rogers, C. R. Client-Centered Therapy. Boston: Houghton-Mifflin, 1951.

Ruml, Beardsley, and Donald H. Morrison. Memo to a College Trustee. New York: McGraw-Hill Book Company, Inc., 1959.

Russell, John Dale. Higher Education in Michigan. Lansing, Michigan: Michigan Legislative Study Committee on Higher Education, 1958.

Snygg, Donald, Arthur W. Combs. Individual Behavior. New York: Harper and Brothers, 1949.

Siegel, Sidney. Nonparametric Statistics for the Behavioral Sciences. New York: McGraw-Hill Book Company, Inc. 1956.

Steward, Julian H. Area Research, Theory and Practice. New York: Social Science Research Council, 1950.

Thibant, John W., and Henry W. Riecken. "Some Determinants and Consequences of the Perception of Social Causality." In T. M. Newcomb, E. L. Hartley, and E. E. Maccoby (Editors), Readings in Social Psychology. New York: Henry Holt and Company, 1958.

Trueblood, Elton. The Idea of a College, New York, Harper and Brothers, 1959.

Walker, Helen M., Joseph Leu. Statistical Inferance. New York: Henry Holt and Company, 1953.

APPENDIX A

INSTRUMENTS

STUDY OF COLLEGE LIFE AND ACTIVITIES

Faculty and Administration Form

A college, like a school or town, is frequently studied in terms of its functions, personnel, finances or organization. With your help, we would like to study your college in terms of the perceptions of it students, faculty and administrative officers. We believe that these perceptions may be very helpful in coming to a fuller understanding of the growth and development of colleges such as yours. With this in mind, would you please complete the following questionnaire to the best of your ability. All information will remain confidential and under no circumstances will your responses be reflected directly or otherwise to any person or group in your campus. Do not sign your name.

PART I: GENERAL INFORMATION

1. What is your age? (check one) 20-29__ 30-39__ 40-49__ 50-59__ 60 and over__

2. What is your sex? (check one) Male ___ Female ___

3. How many years have you been employed in institutions of higher learning___

4. How many years have you been employed in this college?_____

5. Where are you presently residing? (check one) In college housing__ In local rented property___ In own home___ Other (specify)_____

6. Are you married? (check one) Yes___ No___

7. What is your present rank or position at the college? (check one) Administrator with professorial rank__ Administrator without professorial rank__ Full Professor__ Associate Professor__ Assistant Professor__ Instructor__ Temporary Instructor__ Other (specify)_____

8. How long have you held your present rank or position?_____

9. What is your field of academic concentration?_____

10. What is the highest academic degree that you hold? (check one) Full time__ Half time or more__ One-quarter to half time__ Less than one-quarter time__

11. How much of your time is devoted to college activities? (Check one) Full time__ Half time or more__ One-quarter to half time__Less than one-quarter time__

12. Approximately how is your time divided among the following: (in tenths) Administrative work__ Teaching__ Research__ Professional writing__ Consultative service__ Professional Associations__ Other_____

13. About how frequently are you in formal or informal contact with one or more members of the faculty outside of your classroom or laboratory instruction? (check one) Never__ Only on formal occasions such as registration__ Once or twice a term (semester)__ Once a month or so__ Once weekly or so__ Almost daily__

14. In what campus organizations or clubs have you held membership during the past six months?

a._____ b._____

c._____ d._____

e._____ f._____

g._____ h._____

15. In what community or non-college organizations or clubs do you participate regularly?

a._____ b._____

c._____ d._____

e._____ f._____

g._____ h._____

16. In what informal groups do you regularly participate? (e.g. recreation, coffee breaks, car pools, sports, etc.)

a._____ b._____

c._____ d._____

e._____ f._____

g._____ h._____

17. Taking into consideration the amount of time you have been a member of the college, what do you believe to the three major problems facing the college at this time?

a._____

b._____

c._____

18. For about how long do you believe that these problems have been of major concern to the college? (respond in months or years)

Problem a._____

Problem b._____

Problem c._____

19. In what three aspects or parts of the college do you find your greatest sources of pride?

a. _____

b. _____

c. _____

20. In relation to other colleges that you have known or heard about, how would you compare this college? (check one)

Much better__ Better__ About the same__ Not as good__ Much worse__

21. Among the student body, faculty, administration, alumni or other groups associated with the college, what eight persons do you consider to be the overall college leaders, whether or not these people hold office or are recognized by other to be leaders?

Name of overall leader	Why you consider this person to be an overall leader
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____
5. _____	5. _____
6. _____	6. _____
7. _____	7. _____
8. _____	8. _____

PART II

INDEX OF INSTITUTIONAL CHARACTERISTICS
PART A

DIRECTIONS

On the following two pages is a list of 29 characteristics frequently associated with colleges such as yours. Please examine each characteristic as it applies to your college. Then do three things with each of the characteristics:

First, in column I, describe how your college appears to be at this time in terms of these characteristics. To do so, decide how much of the time each of the 29 characteristics appears to be adequate in your college. At the top of Column I is a list of five possible responses. Choose the response which best describes how much of the time each characteristic is adequate in your college. Place the number (1,2,3,4,5) of the response which you have chosen in the blank opposite each characteristic.

Second, in column II, describe how you feel about your college as it appears to be at this time. To do so, decide how you feel about each of the 29 characteristics which you have described in column I. At the top of column II is a list of five possible responses. Choose the one response which best describes how you feel about each characteristic. Place the number (1,2,3,4,5) of the response which you have chosen in the blank opposite each characteristic.

Third, in column III, describe how you would like your college to be ideally. To do so, decide how much of the time each of the 29 characteristics should ideally be adequate in the college. At the top of column III is a list of five possible responses. Choose the response which best describes how much of the time each characteristic should ideally be adequate in your college. Place the number (1,2,3,4,5) of the response which you have chosen in the blank oppostie each characteristic.

INDEX OF INSTITUTIONAL CHARACTERISTICS

PART A

Characteristic of the College	Column I How much of the time do you believe each of the following characteristics of your college is adequate? 1. Seldom 2. Occasionally 3. About half the time 4. Good deal of the time 5. Most of the time	Column II How do you feel about the adequacy of each of the characteristics of your college? 1. Very much dislike 2. Dislike 3. Neither like nor dislike 4. Like 5. Very much like	Column III Ideally, how much of the time do you believe each of the following characteristics of your college should be adequate? 1. Seldom 2. Occasionally 3. About half the time 4. Good deal of the time 5. Most of the time
EXAMPLE: Academic Freedom	4		
1. Purposes of the college			
2. Relationships with other colleges			
3. Relationships with local community			
4. Alumni relations			
5. Administration-Faculty relations			
6. Faculty-Student relations			
7. Quality of instruction			
8. Quality of research			
9. Student personnel service			
10. Quality of student body			
11. Quality of student organizations			
12. Quality of student leadership			

Characteristic of the College	1. Seldom 2. Occasionally 3. About half the time 4. Good deal of the time 5. Most of the time	1. Very much dislike 2. Dislike 3. Neither like nor dislike 4. Like 5. Very much like	1. Seldom 2. Occasionally 3. About half the time 4. Good deal of the time 5. Most of the time
13. Opportunities for cultural enrichment	_____	_____	_____
14. Opportunities for scholarly work	_____	_____	_____
15. Intellectual climate and stimulation	_____	_____	_____
16. Opportunities for faculty advancement	_____	_____	_____
17. Planning of educational programs	_____	_____	_____
18. Housing for students	_____	_____	_____
19. Housing for faculty	_____	_____	_____
20. Library facilities	_____	_____	_____
21. Advisement of students	_____	_____	_____
22. Faculty role in academic decisions	_____	_____	_____
23. Administrative role in academic decisions	_____	_____	_____
24. Faculty role in non-academic decisions	_____	_____	_____
25. Cooperation among faculty	_____	_____	_____
26. Academic standing of college	_____	_____	_____
27. Scope of educational programs and services	_____	_____	_____
28. Social-recreational opportunities	_____	_____	_____
29. Quality of buildings and facilities	_____	_____	_____

INDEX OF INSTITUTIONAL CHARACTERISTICS

Part B

DIRECTIONS

Since it is not always possible to obtain desired information from all the persons who make up a college, we must rely upon the judgments of representative persons to help us develop a reasonable picture of the college under study. In the following two pages, would you help us describe how the average person within the college perceives and feels about the college.

In order to represent the views of the average person within the college, would you complete the following questionnaire as you think the average person in your own peer group would complete it for himself. In other words, if you are a student, complete the questionnaire as you think the average member of the student body would fill it out. If you hold an administrative position, complete the questionnaire as you think the average member of the administrative staff would fill it out.

Complete columns I, II, III of the next two pages in the same manner in which you did for yourself on the previous two pages.

INDEX OF INSTITUTIONAL CHARACTERISTICS
PART B

To be completed as you believe the average person in your peer group(whether student, faculty, or administration) would complete it for himself.

Characteristic of the College	How much of the time does the average person in your peer group believe each of the following characteristics of the college is adequate?	How does the average person in your peer group feel about the adequacy of each of the following characteristics of the college?	Ideally, how much of the time does the average person in your peer group believe each of the following characteristics of the college should be adequate?
	1. Seldom 2. Occasionally 3. About half the time 4. Good deal of the time 5. Most of the time	1. Very much dislikes 2. Dislikes 3. Neither likes nor dislikes 4. Likes 5. Very much likes	1. Seldom 2. Occasionally 3. About half the time 4. Good deal of the time 5. Most of the time
1. Purposes of the college	____	____	____
2. Relationships with other colleges	____	____	____
3. Alumni relationships	____	____	____
4. Relationship with local community	____	____	____
5. Administration-Faculty relations	____	____	____
6. Faculty-Student relations	____	____	____
7. Quality of instruction	____	____	____
8. Quality of research	____	____	____
9. Student personnel service	____	____	____
10. Quality of student body	____	____	____
11. Quality of student organizations	____	____	____
12. Quality of student leadership	____	____	____
13. Opportunities for cultural enrichment	____	____	____

INDEX OF INSTITUTIONAL CHARACTERISTICS

PART B

Characteristic of the College	Column I 1. Seldom 2. Occasionally 3. About half the time 4. Good deal of the time 5. Most of the time	Column II 1. Very much dislike 2. Dislike 3. Neither like nor dislike 4. Like 5. Very much like	Column III 1. Seldom 2. Occasionally 3. About half the time 4. Good deal of the time 5. Most of the time
14. Opportunities for scholarly work	_____	_____	_____
15. Intellectual climate and stimulation	_____	_____	_____
16. Opportunities for faculty advancement	_____	_____	_____
17. Planning of educational programs	_____	_____	_____
18. Housing for students	_____	_____	_____
19. Housing for faculty	_____	_____	_____
20. Library facilities	_____	_____	_____
21. Advisement of students	_____	_____	_____
22. Faculty role in academic administration	_____	_____	_____
23. Administrative role in academic decisions	_____	_____	_____
24. Faculty role in non-academic decisions	_____	_____	_____
25. Cooperation among faculty	_____	_____	_____
26. Academic standing of college	_____	_____	_____
27. Scope of educational programs and services	_____	_____	_____
28. Social and recreational opportunities	_____	_____	_____
29. Quality of buildings and facilities	_____	_____	_____

APPENDIX B

ORIGINAL DATA

College A

Administrators Forms

Questionnaire

	Scale Scores					
	I	II	III	IV	V	VI
11001	121	119	144	119	118	143
11002	108	106	132	100	108	133
11003	121	122	138	122	109	129
11004	127	121	145	127	121	145
11005	114	112	127	116	117	115
11006	108	103	125	124	121	145
11007	110	104	134	111	107	133
11009	114	108	131	106	104	128
11010	108	110	135	114	110	121
11011	122	127	142	132	133	144
11012	121	112	124	115	110	108
			Faculty Forms			
12001	098	104	127	099	102	145
12002	120	118	127	115	115	119
12003	128	124	138	124	125	143
12004	123	123	144	118	118	145
12005	117	112	141	115	116	141
12006	131	119	145	134	124	145
12007	122	119	117	111	109	114
12008	112	105	130	110	109	140
12009	119	121	131	117	113	121
12010	130	131	143	129	130	142
12011	97	102	103	108	92	99
12012	102	96	127	102	94	134
12013	120	117	122	122	105	134
12014	119	123	123	121	119	121
12015	121	117	140	121	120	140
			Student Forms			
13001	134	134	143	109	105	138
13002	114	107	128	98	87	122
13003	115	104	133	107	94	108
13004	84	89	130	77	81	127
13005	140	135	140	139	132	138
13006	117	113	122	111	108	124
13007	114	117	121	106	104	118
13008	117	113	131	113	108	130
13009	104	108	128	111	104	126
13010	110	119	139	107	107	133
13011	116	107	143	105	90	139
13012	126	117	145	107	95	138
13013	119	105	145	127	106	145
13014	120	113	119	118	113	117
13015	122	99	133	105	99	128

Student Forms

	I	II	III	IV	V	VI
13016	124	133	145	115	112	130
13017	116	115	144	112	112	135
13018	126	124	141	125	124	142
13019	80	81	109	76	72	111
13020	99	94	139	86	92	131
13021	135	134	142	130	126	142
13022	125	114	132	122	117	125
13023	100	117	119	119	121	124
13024	99	120	132	111	128	137
13025	112	108	117	115	112	123
13026	109	108	135	104	114	138
13027	130	134	138	123	131	142
13028	122	109	143	112	100	145
13029	125	101	131	125	101	131
13030	100	110	105	112	110	105
13031	111	101	132	111	102	127
13032	92	86	101	92	86	101
13033	119	93	134	122	98	122
13034	107	91	116	103	82	116
13035	89	61	113	72	71	105
13036	105	104	130	103	89	134
13037	100	87	137	109	94	137
13038	98	91	129	125	100	130
13039	94	81	131	94	100	125
13040	114	116	121	100	104	119
13041	100	99	110	107	107	115
13042	115	99	130	105	95	120
13043	99	84	127	98	88	133
13044	80	70	113	76	77	105
13045	117	106	157	114	108	129
13046	123	126	130	113	118	126
13047	112	117	124	110	116	124
13048	125	120	143	116	114	145
13049	106	108	129	96	112	133
13050	117	125	128	124	120	124
13051	112	113	142	103	100	123
13052	120	121	132	117	105	121
13053	129	129	122	120	120	117
13054	117	103	135	115	105	132
13055	116	115	141	120	111	112
13056	124	131	130	134	130	131
13057	104	108	133	86	91	126
13058	121	118	119	123	105	107
13059	114	120	120	120	134	132
13060	126	117	139	116	114	126
13061	119	115	116	115	113	111
13062	132	120	144	112	115	141
13063	124	127	142	108	112	127
13064	98	93	100	93	97	93
13065	99	104	133	104	105	137
13066	106	89	108	80	78	102
13067	124	111	127	123	120	129

Student Forms

13068	112	101	128	101	91	120
13069	99	95	127	94	87	130
13070	110	102	135	114	108	128
13071	123	97	121	118	98	113
13072	124	116	136	129	117	136
13073	78	94	109	73	86	108
13074	108	105	125	105	109	115
13075	128	123	127	119	116	126
13076	107	114	122	117	118	132
13077	86	81	133	101	92	136
13078	91	92	84	83	92	83
13079	103	86	105	97	84	100
13080	83	82	115	72	82	118
13081	85	80	131	80	74	124
13082	114	113	143	114	117	144
13083	117	105	144	121	114	142
13084	124	126	145	115	115	145
13085	118	115	137	113	120	131
13086	113	112	115	101	97	122
13087	100	106	111	101	108	104
13088	116	110	139	120	116	142
13089	129	125	135	132	127	136
13090	121	124	127	134	130	131
13091	114	117	132	117	119	134
13092	127	116	142	126	123	143
13093	104	93	132	84	69	105
13094	86	82	127	127	125	134
13095	114	115	124	96	103	114
13096	123	115	139	119	115	139
13097	135	131	134	121	111	122
13098	105	109	116	92	96	119
13099	126	121	141	112	110	137
13100	92	95	90	102	101	103
13101	115	99	120	110	98	119
13102	112	108	125	119	115	129
13103	127	127	135	132	130	134
13104	116	90	129	109	88	128
13105	110	116	134	109	97	133
13106	110	106	133	122	108	111
13107	77	84	104	78	76	98
13108	107	101	130	93	100	100
13109	106	108	138	103	108	132
13110	93	88	115	118	103	120
13111	112	113	112	118	112	110
13112	113	123	121	104	115	96
13113	100	103	129	98	100	125
13114	108	102	127	100	90	125
13115	117	109	134	114	105	123
13116	126	117	142	128	122	145
13117	102	94	125	104	112	124
13118	126	103	132	111	103	125
13119	121	114	124	108	102	109
13120	113	114	125	96	95	99
13121	111	100	117	116	98	119
13122	101	97	125	108	91	124

Student Forms

13123	129	123	135	124	112	140
13124	117	120	120	117	115	115
13125	116	112	124	116	106	124
13126	126	125	145	117	111	145
13127	125	132	142	113	114	142
13128	82	81	137	83	71	103
13129	111	112	130	103	99	119
13130	122	120	133	120	114	135
13131	117	112	135	104	97	119
13132	102	101	127	97	97	116
13133	112	104	128	109	101	125
13134	120	115	141	120	112	139
13135	124	117	129	117	113	131
13136	99	100	129	118	112	132
13137	116	108	132	103	102	128
13138	108	102	123	112	106	125
13139	121	111	121	117	116	121
13140	110	107	129	97	97	116
13141	114	106	133	96	81	127
13142	110	105	129	112	115	112
13143	117	115	127	126	117	123
13144	132	117	128	116	115	117
13145	124	122	137	114	114	136
13146	103	109	131	109	102	125
13147	103	95	117	102	97	118
13148	129	129	145	128	128	145
13149	117	111	136	108	106	131
13150	107	105	132	101	103	131
13151	96	83	127	69	79	112
13152	80	106	122	83	88	108
13153	122	109	134	117	101	125
13154	121	122	124	115	115	116
13155	114	97	121	101	99	129
13156	125	122	140	128	128	135
13157	128	116	136	127	116	135
13158	125	107	128	92	97	124
13159	108	116	141	113	113	135
13160	113	96	120	92	88	115
13161	107	97	134	92	90	133
13162	109	107	134	116	111	119
13163	109	115	125	116	112	119
13164	132	127	145	111	103	145
13165	113	109	139	109	109	126

College B

Administrators Forms

Questionnaire	Scale Scores					
	I	II	III	IV	V	VI
21001	100	108	132	106	103	124
21002	99	87	128	100	94	133
21003	111	102	135	102	101	141
21004	104	113	136	103	112	135
21005	120	128	137	121	125	140
21006	105	116	116	92	97	117
21007	127	133	123	119	122	113
Faculty Forms						
22001	126	127	134	135	136	145
22002	120	120	145	112	117	145
22003	100	105	132	97	107	129
22004	125	130	135	128	129	132
22005	96	104	110	87	89	106
22006	102	100	132	100	94	130
22007	80	76	122	80	75	122
22008	120	122	120	113	107	109
22009	104	114	126	97	102	120
22010	123	117	142	105	100	145
22011	117	118	123	104	110	115
22012	105	117	120	110	119	124
22013	105	119	105	97	105	100
22014	126	128	135	116	127	136
22015	119	119	124	118	125	125
22016	110	99	134	100	93	132
22017	116	114	139	111	109	130
22018	84	88	123	78	82	114
22019	109	109	129	114	115	132
22020	114	115	139	115	121	135
22021	111	121	126	111	113	127
22022	111	103	124	107	112	125
Student Forms						
23001	109	107	138	95	101	123
23002	118	113	121	108	104	110
23003	105	98	127	77	84	130
23004	103	104	122	98	96	122
23005	111	110	130	111	112	138
23006	113	111	134	112	105	130
23007	105	121	124	107	115	122
23008	137	131	137	137	129	137
23009	124	119	135	92	92	129
23010	137	123	140	130	115	122
23011	115	126	110	109	119	110
23012	139	144	138	142	145	142
23013	131	135	135	127	138	137

Student Forms - cont.

23014	138	134	142	134	135	142
23015	123	135	132	126	128	132
23016	127	123	132	121	124	132
23017	137	134	128	99	105	102
23018	125	129	131	118	122	128
23019	112	109	112	119	115	116
23020	128	128	131	124	120	127
23021	113	117	113	112	109	109
23022	127	115	127	122	111	122
23023	121	121	122	119	114	136
23024	111	126	121	104	117	122
23025	117	120	124	112	116	118
23026	123	124	137	119	114	133
23027	105	90	130	107	93	122
23028	139	143	138	134	134	142
23029	120	124	132	122	122	134
23030	114	112	127	115	109	135
23031	105	105	135	104	100	127
23032	114	103	125	118	105	125
23033	116	126	128	111	109	121
23035	120	115	134	131	122	136
23036	136	134	144	134	131	140
23037	105	77	131	105	79	135
23038	102	94	125	102	92	126
23039	115	117	113	122	109	108
23040	114	107	129	113	109	118
23041	121	118	140	117	111	135
23042	119	118	128	120	119	127
23043	125	126	140	119	119	133
23044	117	111	134	118	113	133
23045	110	97	134	93	89	123
23046	125	134	132	135	132	132
23047	129	127	136	129	131	138
23048	139	138	145	135	135	145
23049	130	129	134	126	126	131
23050	113	113	136	114	115	138
23051	113	102	122	111	105	115
23052	106	105	137	100	97	127
23053	120	126	129	119	122	136
23054	110	118	121	110	118	127
23055	127	128	134	123	123	139
23056	131	128	131	131	125	132
23057	123	126	132	112	115	117
23058	120	122	139	110	93	135
23059	110	116	103	104	107	107
23060	127	126	131	127	126	129
23061	98	99	112	92	94	98
23062	113	125	119	107	119	116
23063	125	127	123	106	123	106
23064	132	129	141	137	137	142
23065	117	131	129	131	139	139
23066	123	123	120	114	117	116

Student Forms - cont.

23067	118	113	140	109	107	135
23068	122	126	129	95	110	109
23069	110	126	112	108	129	108
23070	138	136	137	138	139	137
23071	112	109	132	116	115	132
23072	87	94	109	100	98	120
23073	92	95	109	81	79	105
23074	98	96	124	97	93	117
23075	109	109	132	114	98	140
23076	108	98	113	107	101	111
23077	114	124	122	116	124	136
23078	116	106	139	108	104	142
23079	139	136	141	134	133	136
23080	128	124	138	120	116	136
23081	111	106	117	113	101	121
23082	121	116	123	121	112	124
23083	126	116	129	123	110	124
23084	109	114	114	108	115	113
23085	98	104	111	94	103	112
23086	110	112	112	111	111	111
23087	106	110	116	105	112	115
23088	116	108	119	120	107	121
23089	116	109	128	117	109	128
23090	107	108	126	103	104	122
23091	98	91	131	96	94	132
23092	66	87	96	81	78	111
23093	113	112	125	96	101	122
23094	122	122	133	120	120	135
23095	100	93	137	97	85	130
23096	110	115	120	110	114	114
23097	107	113	122	98	93	116
23098	99	95	125	110	111	120
23099	120	114	115	107	104	112
23100	114	107	122	113	110	119
23101	103	114	125	81	73	102
23102	132	124	137	120	128	134
23103	128	134	144	133	130	144
23104	111	117	122	112	109	126
23105	115	122	128	108	116	127
23106	120	119	125	120	109	117
23107	141	135	142	133	136	136
23108	123	127	136	106	112	120
23109	87	104	108	106	105	116
23110	112	108	133	112	109	128
23111	134	137	134	136	139	136
23112	121	127	142	123	120	135
23113	102	112	127	106	114	129
23114	127	126	135	113	108	128
23115	126	115	133	116	102	135
23116	123	115	132	122	113	128
23117	141	139	140	132	134	136
23118	124	122	118	112	116	111
23119	128	118	121	118	111	134
23120	98	101	94	101	103	119
23121	108	104	118	116	108	130

Student Forms - cont.

23122	122	128	133	107	106	138
23123	123	117	141	121	136	145
23124	107	105	109	106	113	116
23125	102	95	129	110	111	118
23126	129	134	131	131	135	139
23127	119	121	134	105	117	121
23128	125	112	118	108	102	114
23129	133	112	137	129	115	135
23130	126	128	128	119	113	120
23131	135	135	135	126	126	126
23132	114	116	116	111	113	115
23133	121	118	123	112	112	121
23134	113	122	120	120	124	128
23135	111	116	105	103	112	101
23136	100	97	121	101	98	122
23137	128	129	121	125	131	123
23138	105	108	118	113	116	121
23139	121	118	134	111	111	132
23140	128	128	135	127	129	132
23141	121	120	130	123	118	130
23142	112	113	117	114	110	118
23143	113	129	135	135	128	133
23144	118	121	128	123	128	135
23145	110	110	131	103	103	131
23146	106	95	123	103	94	114
23147	115	109	128	116	107	125
23148	116	113	127	110	105	118
23149	118	108	136	95	91	135
23150	120	120	137	124	126	139
23151	110	92	125	98	93	119
23152	115	107	140	111	93	128
23153	114	94	120	96	97	115
23154	97	91	115	109	99	119
23155	101	96	95	82	93	89
23156	93	97	106	99	123	108
23157	99	93	118	97	94	117
23158	117	101	129	95	90	117
23159	87	89	113	85	79	133
23160	119	103	128	108	103	120
23161	127	120	129	120	116	131
23162	84	97	93	82	85	94
23163	116	120	118	111	116	119
23164	119	115	120	124	117	124
23165	125	130	140	105	117	140
23166	130	131	131	128	128	128
23167	128	112	114	123	118	130
23168	109	112	116	106	106	113
23169	112	114	132	115	116	128
23170	115	125	126	121	125	126
23171	118	119	129	112	110	122
23172	128	118	134	104	106	127
23174	116	110	123	114	111	124
23175	106	106	124	98	94	117
23176	121	122	131	121	124	137
23177	105	92	105	110	99	107
23178	111	93	115	112	96	115

College C

Administrators Forms	Scale Scores					
	I	II	III	IV	V	VI
31001	125	121	140	125	122	140
31002	110	98	145	98	98	141
31003	102	116	145	112	115	139
31004	120	122	138	110	117	134
31005	103	96	110	82	97	97
31006	117	116	136	114	113	132
31007	85	81	122	103	106	123
31008	111	113	119	121	109	123
31009	99	111	124	93	109	118
Faculty Forms						
32001	118	119	138	104	114	142
32002	115	125	138	122	116	111
32003	98	109	111	109	109	102
32004	106	100	124	103	100	128
32005	78	74	145	101	98	136
32006	99	104	135	100	104	133
32007	84	81	119	92	97	134
32008	111	118	129	109	109	116
32009	97	93	107	91	87	109
32010	112	115	115	109	99	110
32011	125	118	127	133	108	132
32012	74	84	98	78	85	102
32013	129	127	140	129	129	140
32014	80	78	122	80	78	115
32015	108	110	140	105	107	140
32016	100	109	120	82	92	109
32017	116	110	135	108	102	135
32018	122	121	137	108	108	132
32019	95	92	114	87	88	111
32020	106	105	142	101	100	142
32021	110	105	125	102	102	130
32022	128	131	141	113	109	121
32023	111	109	123	118	114	125
Student Forms						
33001	104	106	129	90	96	109
33002	119	124	145	121	122	143
33003	97	96	127	99	93	120
33004	136	129	134	128	124	131
33005	113	105	127	108	105	117
33006	102	89	139	108	96	132
33007	97	90	113	88	83	108

33008	108	99	130	97	84	125
33009	95	78	120	99	83	110
33010	110	108	129	113	107	135
33011	110	108	130	100	100	111
33012	85	81	116	86	84	122
33013	96	94	117	88	95	112
33014	105	98	124	96	95	120
33015	114	108	117	101	99	122
33016	121	117	129	118	124	127
33017	118	112	134	117	106	131
33018	112	101	140	99	95	134
33019	106	114	130	93	104	126
33020	115	121	142	113	116	142
33021	75	70	113	86	88	102
33022	76	80	130	88	74	128
33023	93	98	124	84	99	120
33024	86	95	106	87	90	105
33025	91	85	134	87	99	120
33026	116	101	135	118	99	140
33027	113	97	131	107	94	133
33028	94	91	114	94	88	113
33029	98	102	122	87	91	130
33030	112	88	137	114	103	139
33031	108	93	141	83	90	131
33032	103	89	122	91	83	122
33033	123	119	136	109	106	125
33034	100	96	130	84	92	120
33035	101	87	81	73	84	83
33036	82	77	132	82	77	132
33037	83	90	125	79	84	116
33038	111	111	128	109	102	131
33039	114	94	129	117	112	130
33040	108	109	109	115	110	111
33041	100	92	126	87	93	116
33042	75	72	110	75	63	107
33043	116	110	133	108	108	134
33044	103	93	129	92	88	126