AN INVESTIGATION OF THE CHARACTERISTICS WHICH DIFFERENTIATE INNOVATIVE FROM NON-INNOVATIVE COLLEGE STUDENT PERSONNEL PROGRAMS

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ABSTRACT

AN INVESTIGATION OF THE CHARACTERISTICS
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COLLEGE STUDENT PERSONNEL PROGRAMS

by Benjamin E. Sprunger

College student personnel administrators have been traditionally delegated the responsibility for minimizing the abrasive aspects of the college environment which interfere with the students' optimal progress. Although social scientists, behavioral scientists, and student personnel workers have introduced many new practices and theories which may facilitate the students' academic progress both inside and outside the classroom and laboratory, little is known about how these practices are communicated, or what distinguishes institutions which readily adopt new student personnel practices from colleges which are relatively slow in updating their programs.

Few research studies have been conducted in the area of college student personnel work and none have been reported indicating how student personnel practices are communicated and adopted. The major intent of this study, therefore, was to examine one aspect of student personnel work, that of isolating specific variables which would effectively differentiate colleges with innovative student personnel programs from non-innovative programs. Three secondary problems were also examined: 1) Are some characteristics more potent than others in predicting innovative student personnel programs?

2) What relationship if any exists between administrative-organizational and personal-psychological variables and the innovativeness of the student personnel program? 3) Could innovative and non-innovative student personnel programs be identified based upon measurement devices?

To provide answers to the problem under investigation, one generalized multivariate hypothesis was formulated:

H_1: No appreciable difference exists between student personnel programs in colleges with innovative and non-innovative student personnel programs.

The generalized multivariate null hypothesis allowed for the generation and testing of sixteen related statistical hypotheses. The analysis used to test the efficacy of the hypotheses was multiple discriminant analysis and univariate statistical techniques.

Prior to testing the hypotheses, it was necessary to establish two mutually exclusive groups from which relevant data could be collected. An instrument, "Adoption of Student Personnel Practices Inventory," was developed which would provide a systematic method of identifying from the population sample those institutions having innovative programs and those having non-innovative programs. The two mutually exclusive groups which were identified by the adoption scale were drawn from a population sample of 245 private, coeducational, liberal arts colleges located in the midwestern states with student enrollments of 5,000 or less. From the 245 colleges representing the population sample, the twelve most innovative and twelve least innovative student personnel programs were identified and categorized into two mutually exclusive groups.

The statistical analysis of the generalized multivariate null hypothesis was rejected at the .01 level of confidence, thus lending tentative support to the assumption that there were identifiable differences between innovative and non-innovative college student personnel programs. Based upon univariate F ratios, five of the sixteen variables were found to be significant at the .05 level of confidence or greater. From the analysis of the sixteen statistical hypotheses, however, it was not possible to draw conclusive evidence indicating either the relative potency of each variable or the effect administrative-organizational and/or personal-psychological characteristics had in relation to innovativeness.

Analysis of the data revealed that adoption scales can systematically rate the relative innovativeness of college student personnel programs. The adoption scale developed for this study was found to have a split-half reliability coefficient of +.83. Further analysis revealed that the frequency distribution approached almost perfect normality.

Although definitive answers were not provided for all the problems under investigation in this study, sufficient evidence was found which appeared to have direct and indirect implications for student personnel practice. The positive findings of this initial study on the diffusion and adoption of student personnel practices, along with the evidence which indicated that there is a rather large similarity of findings between adoption practices in student personnel and in other organizations, appeared to provide a firm basis upon which further ex post facto and experimental studies can be built examining the processes of change in student personnel work.

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DEDICATION

To my wife, Sue, who throughout the last few years provided the necessary encouragement, assistance, and support which made this study possible. Also to Julie and Jonathan, who were both patient and understanding during the completion of this study.

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I also wish to express my appreciation to Dr. Everett M. Rogers. His vast knowledge of the numerous diffusion research traditions allowed for extensive information and resource availability during the formulation of the various aspects of the study. In addition, I wish to express my appreciation to Dr. Walter Johnson for his continuous assistance in refining the nature of the problem under investigation.

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CHAPTER I

NATURE OF THE PROBLEM

Social Milieu and Importance of the Study

One might easily interpret that innovation is the spirit of America. Rapid social change and technological change has become the pattern which has uniquely set America apart from other societies. This way of life has been fostered by everyone from our most eminent scientists who contribute to the frontiers of knowledge to the hucksters who peddle trivia. Madison Avenue, symbolic of the advertising world, continually embraces and informs man that he must change with the times or become obsolete and therefore be nothing better than a social outcast and a drag on the great American way of life. The propensity for change has become part of the environmental conditioning which has universally affected almost all segments of our society.

The acceptance of change has not gone unnoticed by educators. Barrington (1953, p. 4) stated that

> . . . the record of history shows that in times of change institutions which fail to make the necessary adjustments in their programs soon drop out of the social picture. It is necessary for educators to see permanence and change together. The schools and colleges must not emphasize one to the exclusion of the other.

Fosdick (1947, p. 7) stated: "The illusion that security can be found in immobility or that safety is dependent upon the absence of change, is perhaps the most dangerous form of imbalance which plagues the minds of men." Some writers maintain that society

and especially education are not changing rapidly enough (Carlson, 1965b, p. 60). On the other hand, one has little difficulty in locating numerous publications decrying the rapid changes which are continually being made both in the society and in education.

Many writers and educators are concerned about change not from the point of view of change for change sake, but from the point of view that education must change and keep pace with the society which it serves. An example of this is John Dewey's statement that

> . . . not all the social changes which are going on are good and beneficial. But it is claimed that these changes are here and must be faced, not ignored; education has the responsibility of developing types of minds and characters that can direct these newer forces toward good and that otherwise they will surely become forces of destruction and disintegration (Caswell, 1937, p. 12).

The process for change and the need to keep pace with society has not gone unnoticed by supporters and critics of higher education. Alvin Eurich (1964, p. 55) in an article in the Educational Record stated that

> . . . the contemporary world created in large measure by the ideas which have come from universities, now demands that higher education reform itself. A conventional pattern of higher education is an anachronism in today's world. The only way to conserve the values of liberal learning is through the full and imaginative exploitation of every tool of modern technology. . . . Yet college teaching stands out as one of the few fields in which innovation and improvement are neglected.

A study undertaken at Teachers College, Columbia University, to investigate the diffusion of educational practices at colleges revealed the following:

> Careful examination of our educational system reveals that a multitude of educational inventions have been introduced during the past 100 years. It appears evident, however, that most of these inventions lag several years behind the cultural needs of our society and also behind the insights into the learning process and individual behavior provided by psychological research. In addition, the time required

> for new practices to diffuse throughout a large percentage of school systems is discouragingly long. It hardly seems possible that education which is primarily concerned with change--change in the behavior of individuals and groups--would be so reluctant to accept change in its methods and procedures (Barrington, 1953, p. 6).

Despite all of the writing, research, technological advancements, and social changes which have taken place in the past few decades, there are surprisingly few studies of the diffusion process in education (Katz, 1962, p. 55). More astounding is the conspicuous absence of studies investigating the change process in higher education, especially when it is this institution in our society which is a major contributor to change. The writer has been able to locate only a few studies which have systematically investigated the process by which innovations spread through higher education.

When examining diffusion research, it is readily apparent that a considerable quantity of research has been done; however, when one extracts that which is directly related to education, it is lacking both in quality and quantity (Carlson, 1965b, p. 60). When one further categorizes educational diffusion research into that which is relevant to elementary, secondary and higher education, it is higher education which has received almost no attention, and there appears to be nothing written concerning diffusion of innovations in college student personnel work. Although social scientists have for many years studied the process of change and more specifically the diffusion of new ideas through the social system and the eventual acceptance and adoption of the ideas by the social system, college student personnel work has shown little if any interest in studying change within student personnel work.

In most cases, innovations are in the form of new products, procedures or methods of doing things more efficiently and economically. Thus, the motivating factor is usually financial reward. With student personnel innovations, however, it is rather difficult to prove or promote adoption of new ideas on the basis of monetary gain. In fact, many innovations, if they are adopted, cost more than it does to continue with the present methods, e.g., due process in disciplinary procedures, in-service education, research on environmental stress, and records by electronic data processing equipment. Thus, many times the only motivating force for innovation centers around methods of communicating more information to students in an attempt to reduce the dissonance which exists between the college and the students.

Mort (1964, p. 317-28), a leading researcher on the diffusion process in education, found that: 1) decades elapse between the need for change and acceptance of innovations, 2) diffusion of innovations through the American school system proceeds at a slow rate, and 3) simple and complex innovations spread at about the same rate. At the college level, Davis (1965) verified Mort's findings when he studied adoption rates of liberal arts colleges. Thus, it would follow that elementary and secondary education as well as higher education could benefit greatly if new ideas could be diffused through the educational system with efficiency.

With seven or more major research traditions representing more than a thousand studies, it would appear, therefore, that ample theory and the supportive research is available to undertake an investigation into the role and traits that characterize and identify student

personnel innovators. It also appears evident that an investigation in this area would result in more extensive empirical data identifying ways and means whereby college student personnel administrators can adopt innovations more readily, consequently allowing the total student personnel profession to keep pace with changes in the cultural needs rather than lagging behind due to ineffective procedures for the diffusion of student personnel innovations.

It would seem of foremost importance to know the characteristics of the student personnel innovators as well as those who are non-innovative. The importance of this concern is based upon the theory that early adopters serve as pilot models and local demonstrators, and they in turn are an influence for local change and a direct line of communication for the remainder of the social system (Rogers, 1962, p. 184).

If, then, the characteristics of an innovative student personnel program as well as the non-innovative programs can be identified when new concepts, practices, and methods are developed, they can be directed toward those target audiences, namely colleges with innovative student personnel programs, that are most likely to adopt and accept the innovation. If this is true, although there are some critics of this theory, then systematic attempts should be made to identify those colleges with innovative programs, and extensive effort should be utilized in disseminating new ideas to those innovators and in encouraging them to adopt.

Thus, if the study is able to identify innovative programs as well as to isolate those characteristics that separate the innovator from the non-innovator, the study should afford valuable information

to the researchers of the future; to those who are professionally involved in student personnel work; and to those whose interests, whether they be within the profession or outside the profession, lie in the direction of diffusing innovations through the social system of college student personnel administrators. Perhaps more importantly, the information gained from this study will aid in more rapid diffusion of innovations in college student personnel work with the resultant effect that student personnel programs will more effectively meet the needs of those within or dependent upon the college.

Statement of Problem

The primary problem of this research is to determine if there are specific variables of college student personnel work which are effective in differentiating innovative student personnel programs from non-innovative programs. The process whereby variables relating to innovativeness are identified gives rise to three secondary problems. First, are some characteristics more potent in predicting innovative student personnel programs than other characteristics? Second, what relationship if any exists between administrative-organizational structure and innovativeness of the program, and the personal-psychological characteristics of the chief student personnel administrator and innovativeness? Third, can colleges with innovative and non-innovative student personnel programs be systematically identified through the use of measurement devices?

Purpose of the Study

It is the purpose of this study to: 1) identify liberal arts colleges which have innovative student personnel programs by means of

an instrument which measures the relative innovativeness of the institution's program contained within the population sample, 2) compare the most innovative college student personnel programs with the least innovative programs in order to determine those characteristics which are unique to colleges with innovative student personnel programs, 3) determine if the variables which identify innovators in population samples other than student personnel also identify innovators in college student personnel work, 4) determine which variables for predictive purposes are the most potent in identifying colleges with innovative programs.

Providing the problems outlined for this study can be answered and the purposes of the study are met, then the results of the study should provide valuable information in establishing criteria for identification of innovative institutions. These findings can then be used in the process of disseminating new procedures, identification of pilot colleges which will readily experiment with new practices, and colleges which will serve as demonstration units for new practices.

For those who consider propensity for innovativeness as a value to be emulated, the findings of this research should also provide valuable information. Those chief student personnel administrators wishing their program to be more innovative may find the results helpful as a means of making their own programs more innovative. Those who are student personnel educators may wish to stress the characteristics which correlate highly with innovativeness in the course of their instruction and field consultation.

Statement of the General Hypothesis

This study's main objective is to determine variables which have predictive value for determining the relative innovativeness of student personnel programs. It will examine some personal, educational, and organizational variables of these programs within a sample of private liberal arts colleges. In order to determine if differences existed between colleges with innovative programs and those having non-innovative programs, the colleges included in the study were categorized in either the innovative group or the non-innovative group. Based upon the instrument, "Adoption of Selected Student Personnel Practices Inventory," dichotomization was accomplished by selecting the six percent of the colleges which fell at the tails of the distribution and therefore furthest above and below the mean.

A number of variables considered relevant to the dimension of innovativeness will be presented and then categorized into various hypotheses to be examined. Since the major problem of the study was identifying characteristics which separate innovative college student personnel programs from non-innovative programs, the following major hypothesis was generated. Hereafter, the major hypothesis will be referred to as the generalized multivariate null hypothesis.

G. H.: No appreciable difference exists between student personnel programs in colleges with innovative student personnel programs and colleges with non-innovative programs.

The hypothesis will be tested in null form since there is little if any supporting research regarding student personnel programs and innovativeness. Also since this study represents exploratory research, it was felt that the generalized multivariate null form would be most appropriate.

Because the problem of this study has generated several sub-problems, namely the characteristics which are most potent in identifying innovativeness, two broad research hypotheses were established. The two research hypotheses will serve as the central focus for the generation of numerous statistical hypotheses which will be subjected to quantitative analysis.[1]

The first research hypothesis to be considered in this study is concerned with the effect administrative and organizational procedures and practices have upon whether or not the student personnel program is innovative. Included within the domain of this hypothesis are budget appropriation, staffing procedures, policy formation and student personnel research. The formulated research hypothesis is:

S_1: A positive relationship exists between administrative and organizational procedures and the innovativeness of college student personnel programs.

The second research hypothesis generated for this study attempts to examine the personal and psychological characteristics of the chief student personnel administrator and how this effects innovativeness. In studying the adoption process in the institutional setting, it is not always possible to identify whether or not it was the individual or the institution that was instrumental in the decision to adopt new practices or procedures. There is ample theory and supporting research evidence available, however, which indicates that the chief administrator stands between new ideas received from outside the system and those within the system which have the power to adopt (Spindler, 1963, p. 142).

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[1]Further statements regarding statistical hypotheses are presented in Chapter III.

Theory and research, established by students of the diffusion process, indicated that diffusion of innovations is basically a communication process (Rogers and Stanfield, 1966). Consequently, the extent to which the chief student personnel administrator introduces new ideas to the system from information he receives outside his institution is related to his own personal characteristics. In other words, the more the chief student personnel administrator is open to or has had contact with those outside his institution, the more he will be aware of potential innovations.

Since his openness to outside sources is a personal characteristic and not under the direct control of the institution, cosmopoliteness, education, and dogmatism will all be considered as part of the following research hypothesis:

S_2: A positive relationship exists between the personal interests and psychological characteristics of the chief student personnel administrator and the innovativeness of the student personnel program.

Other questions were raised related to the major hypotheses which concerned the relationship among various personal and organizational variables. For example, questions were raised regarding relationship of: 1) the size of enrollment, 2) the comparison of academic discipline and number and type of graduate courses taken, 3) the total budget expenditure per effectiveness in determining innovativeness, and 4) the total financial aid program per capita to innovativeness. These questions, however, were not stated in hypothesis form because data-collection procedures provided neither accurate nor precise data.

Theoretical Assumptions

The inquiry into the dissemination rates of student personnel practices and the administrators who tend to adopt new practices more readily than others takes its orientation from assumptions derived from existing research and established theory. Unfortunately, for many years the research conducted by social scientists representing the various disciplines have often failed to take cognizance of the research being conducted outside their own discipline. Rogers and Stanfield (1966, p. 6), however, after extensive examination of diffusion studies, have recently found that there is a growing awareness on the part of diffusion researchers which indicates a general type of consistency from one disciplinary field to another. It is also apparent from the increasing number of cross references and the interdisciplinary approach to the diffusion process that diffusion research is emerging as one field of concepts and relationships even though the research is being conducted within the separate disciplines by social scientists loyal to their given field of study. Consequently, the underlying theoretical assumptions of this investigation will be based upon an interdisciplinary approach and will rely greatly upon diffusion research.

The two-step flow theory of communications as developed by Katz suggests that mass communication messages are mediated by reference groups of the recipient and the social structure to which he belongs (Katz, 1957). Thus, when the chief student personnel administrator either reads or hears about a new student personnel practice, the theory suggests that his response is not directly determined by the

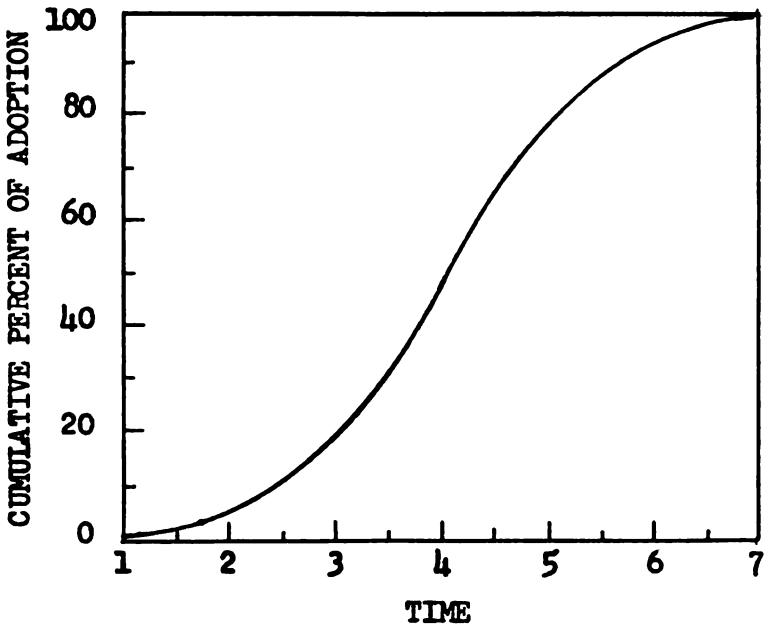
message, but that it is determined largely by his relationships with other people whom he perceives as important.

Therefore, for the purposes of this study, it is assumed that the dean's openness to communication as well as his contact with numerous opinion leaders will be related to his innovativeness.

A second basic assumption which is germane to this investigation is that the period of time for which a new practice takes to diffuse generally exhibits the following characteristics: 1) When a new practice is introduced, there are relatively few adopters. 2) This period is followed by a rapid increase in adopters. 3) A general decline in the number of adopters is noted after the majority have adopted the innovation. Graphically represented, this distribution over time would be in the form of an "S"-shaped curve (Carlson, 1965a, p. 7). (See Figure 1)

FIGURE 1

CUMULATIVE PERCENT OF ADOPTION CURVE



Carlson (1965a, p. 6-8) has provided additional theoretical support which indicates that adopter distributions approach normality. His theory is based upon "interaction effect." This is the process whereby the adopters of an innovation influence the other members of the social system. The interaction effect results in a type of chain reaction. Since there is intercommunication among adopters, the potential adopters learn from each other. Therefore, the group pressure for adoption becomes more intense as the number of adopters in a social system increases (Rogers, 1962, p. 155). Mathematically, the interaction effect follows a binomial expansion, i.e., one member of the social system tells two other members, they in turn each tell two others, and each of these pass it along to two others, etc. The resulting binomial expansion follows a normal curve when plotted.

At the Diffusion Document Center[1], after reviewing 2,400 empirical findings from the diffusion research on file, representing fourteen main research traditions, researchers were able to identify fifteen separate variables that were positively related to the dimension of innovativeness (Rogers and Stanfield, 1966). They are as follows: 1) education, 2) literacy, 3) income, 4) level of living, 5) knowledgeability, 6) attitude toward change, 7) achievement motivation, 8) aspirations for children, 9) cosmopoliteness, 10) mass media exposure, 11) contact with change agencies, 12) deviance from norms, 13) group participation, 14) interpersonal communication exposure, and

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[1]The Diffusion Document Center, under the direction of Everett M. Rogers, is sponsored by federal funds. It classifies and codes all diffusion studies irregardless of research tradition. Currently, there are more than 1,026 studies coded.

15) opinion leadership. There is no consistent relationship between age and innovativeness.

The empirical findings and assumptions of previous diffusion research from all research traditions will constitute the basis for the derivation of all assumptions and hypotheses concerning innovativeness in this investigation.

Definition of Terms

Chief Administrative Officer.--The highest individual administrator whose major responsibilities are the supervision and administration of non-classroom and/or non-laboratory student activities.

Cosmopoliteness.--The degree to which an individual or organization is oriented outside his or its own social system.

Diffusion.--The process by which a new idea, innovation or invention is communicated through a social system in relationship to time.

Innovation.--An idea, invention, technological advancement, or methodological procedure which is perceived as new by the individual or the social system. The newness of the idea to the individual is of more importance than the time lapse between discovery and awareness.

Innovation Decision Process.--The process in which an individual or organization engages from first awareness of the innovation to final adoption or rejection. (This is also frequently referred to as the adoption process.)

Innovativeness.--The degree to which an individual or organization is relatively earlier than the other individuals or organizations in adopting new ideas.

Innovators.-- Refer to those individuals, administrative units, and college student personnel programs which represent approximately the first 6% of the institutions studied to adopt new practices. For the purposes of this study, the term, innovator, represents college student personnel programs which have scored on the instrument, "Adoption of Selected Student Personnel Practices Inventory", at 1.6 standard deviations above the mean.[1] The innovators are those institutions which rank at the 94.52 percentile or above. The term, innovator, then, is subjectively used to connotate those adopting significantly before the rest of the social system under study.

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[1]Both the innovators and non-innovators were drawn from a sample population having a mean of 51 and standard deviation of 14.4.

Non-Innovators.--Refer to those individuals, administrative units, or college student personnel programs which represent the last 6% of the institutions studied to adopt new practices. The colleges classified in this category scored 1.2 standard deviations below the mean on the "Adoption of Selected Student Personnel Practices Inventory."[1] This group represents those ranking at the 11.51 percentile or below. Subjectively, the non-innovator group was representative of those who were last to adopt new student personnel practices.

Organization of the Study

A review of the relevant literature is in the following chapter. Chapter III contains a description of the sample population, instrument development, derivation of the hypotheses, and an explanation of the methodological procedures. The findings will be described in Chapter IV. The summary and conclusions as well as a discussion of the findings and their implications for educational practice will be discussed in Chapter V.

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[1]Both the innovators and non-innovators were drawn from a sample population having a mean of 51 and standard deviation of 14.4.

CHAPTER II

REVIEW OF LITERATURE

In an attempt to systematically review the research and theory related to this investigation, this chapter will be divided into four major presentations. A fifth and final section will draw from the literature reported, the conclusions drawn, and a summary of the findings presented.

The first section, consequently, examines briefly the historical development leading to the contemporary position of both student personnel work and diffusion research. The second section presents basic concepts, operational definitions, and procedures which provide much of the underlying support of diffusion research.

The majority of diffusion research has studied the individual as the adoption unit. Section three, however, examines the few existing studies which have investigated the social system as the adopting unit. Since this study utilizes the social system as the unit of adoption, section three and section four provide much of the theories and models for this study.

Historical Perspective

Although student personnel work has been in existence many years, it has by tradition taken its direction for change from sources other than its own profession or its unique intellectual

endeavors. The chief student personnel administrator has been traditionally the individual charged by the president of the institution as the one responsible for keeping the status quo, that is, the control of discipline and other non-academic, housekeeping functions.

In recent years, however, more and more impetus has been placed upon student personnel departments for providing not only co-curricular activities, but also an environmental atmosphere and services which enhance and are compatible with the students' ability to excel in the academic community. The traditional college environment did not necessarily require that new student personnel practices be adopted rapidly since isolation, selectivity and autonomy were the prevailing trends of private liberal arts colleges. This has given way to pressure brought to bear upon both public and private higher education to provide both effective and efficient education for the heterogeneous masses.

Today, however, when the national security of the country depends upon a majority of the society being intellectually and technically educated, the total campus environment comes into play as part of the educational process. The speed which new ideas can be diffused, therefore, through student personnel work, has resulted in providing the student with a better education. The auxiliary student personnel services assist the student in his classroom and laboratory studies, while at the same time minimizing the aspects of higher education which have thwarted or hindered the student's academic growth.

Consequently, privately controlled higher education and its student personnel programs, which at one time could remain isolated and apart from the competitive and changing business and industrial world, can no longer change and innovate at their own pace. By necessity the college must innovate and change to meet the needs of the changing society which the college institution serves. To be contemporary and relevant to today's society, private colleges must keep their channels open to new ideas. As the college must keep aware of the changes taking place, so must student personnel programs be continually aware of the new findings in social sciences, behavioral sciences, legal precedents, and innovative student personnel practices adopted by other institutions.

When attempting to determine the factors relating to the adoption process of new student personnel practices, little if any research was available. Researchers from traditions other than education, however, have compiled evidence on other organizations and how new ideas are diffused through them. Since little evidence was available indicating how new ideas are communicated or adopted by student personnel administrators, it may be helpful to briefly review the diffusion of innovation research traditions.

Although diffusion research has been in existence for the last half century, it has not been until the last decade that there has been a rapid increase in the quantity of studies completed (Rogers and Stanfield, 1966). It is also interesting to note that within the last decade there has been a consolidation and cooperation of efforts among the major research traditions. Prior to the last

decade, few if any researchers examined work done in disciplines other than their own. One writer indicated the following regarding this problem:

> . . . two of the intellectual traditions of diffusion were ably represented on the same campus of one large university and within five blocks of each other. After several years of widely acknowledged research, these two sets of scholars had little understanding or appreciation of each other's findings (Rogers, 1962, p. 21-2).

As was mentioned in Chapter I, there is now considerable evidence available which indicates that "diffusion research is emerging as one body of concepts and relationships, even though the investigations are conducted by researchers in many disciplines" (Rogers and Stanfield, 1966, p. 8). The number of cross citations over time has increased considerably. An examination of the data contained in Table 2-1 provides supportive evidence.

Considerable academic thought and empirical research has been done in the study of the diffusion of innovations. The Diffusion Document Center, which attempts to code and file all diffusion studies for coding purposes, lists twenty-two research traditions under which they have filed over 1,200 diffusion studies.

Rogers, in his book, Diffusion of Innovations (1962), provides one of the most complete summaries of diffusion theory and research. His book represents an extensive compilation and integration of findings from all research traditions, although rural sociology tends to have been reviewed most thoroughly. In his book, he (Rogers, 1962, p. 23) lists anthropology, early sociology, rural sociology, education, industrial and medical sociology as the six major research traditions. Katz and Levin (1963), however, list

TABLE 2-1

AVERAGE NUMBER OF CROSS CITATIONS PER PUBLICATION BY YEAR

Year of Publication	Average Number of Cross Citations Per Publication	Total Number of Publications Completed
Before 1940	.083	12
1940 - 1944	.643	14
1945 - 1949	.300	10
1950 - 1954	.430	79
1955 - 1959	.522	186
1960 - 1962*	.954	173
1963 - 1964	.975	161
1965 - 1966	1.370	73
Total	---	708

* Categorization of years changes from four to two years at this point.

market research as an additional research tradition. The various intellectual traditions and their respective contributors which have studied the diffusion process are presented in Table 2-2.

The study of diffusion of educational practices has contributed extensively to the body of diffusion research. The majority of educational diffusion studies, however, has been carried out at one institution, Columbia University's Teachers College, under the sponsorship of one researcher, Paul Mort. The researchers at Columbia gathered almost all the data by mailed questionnaire from school superintendents and principals. The concept of spread of new educational practices has been linked to "adaptability" which was felt to be one of the three needs of organizations. "Adaptability was a synonym for innovativeness and was defined as the ability of a school to take on new practices and discard outmoded ones" (Carlson, 1965a, p. 9). Mort and his research associates have completed more than 200 studies of the "adaptability" of schools.

The Mort "tradition," however, is not without critics. There is some feeling among researchers that he was unable to get his research beyond the financial support variable in determining the innovativeness of a school (Carlson, 1965a, p. 9). Mort also has been criticized for ignoring research on the adoption process which had been published by other diffusion researchers.

Since the Mort tradition, such researchers as Carlson and Brickell have studied the diffusion of new educational practices. Unlike their predecessor, they have borrowed heavily upon the other research traditions for support and methods of investigation.

TABLE 2-2

A COMPARISON OF THE DIFFUSION RESEARCH TRADITIONS *

Tradition	Main Disciplines Represented	Main Method of Data-Gathering and Analysis	Main Unit of Analysis	Major Types of Findings
Anthropology	Anthropology	Participant observation combined with descriptive analysis	Societies or tribes	How idea diffuses from one society to another; consequences of innovation
Early sociology	Sociology	Data from secondary sources and a type of statistical analysis	Mainly communities, but also individuals	S-shaped adopter distribution; correlates of innovativeness
Rural sociology	Sociology	Personal interviews and statistical analysis	Individual farmers	Correlates of innovativeness; characteristics of ideas related to rate of adoption; source of information at adoption process stages; S-shaped adopter distribution
Education	Education	Mailed questionnaire & statistical analysis	School systems	Correlates of innovativeness; S-shaped adopter distribution
Industrial	Ind. economics Ind. history Ind. engineering	Case studies and statistical analysis	Industrial firms	Correlates of innovativeness
Medical sociology	Sociology Public Health	Personal interviews & statistical analysis	Individuals	Opinion leadership in diffusion; correlates of innovativeness

*Source: Rogers, 1962, p. 55-56.

Presently, Richard Carlson at the Center for the Advanced Study of Educational Administration at the University of Oregon appears to be the most active researcher of the diffusion process of educational innovations.

In summarizing the historical perspective, it is evident that Mort, Carlson and their followers have contributed much to the research evidence on the diffusion of educational innovations. However, little if any research has directly investigated the process whereby student personnel programs adopt new practices. Since little research evidence is available in this specific area, and since much of the educational diffusion research has borrowed from other research traditions, it would appear that any research undertaken on the diffusion of educational practices in college student personnel programs cannot be done in isolation and without consultation with other research traditions. The propriety of borrowing from other research traditions than education is given further credence when attempting to determine the extent to which college student personnel programs are comparable to public school programs.

Basic Concepts of Diffusion Research

Prior to examining the literature which directly addresses itself to the formal organization, i.e., student personnel departments, and the process whereby they adopt new innovations, it is important to consider the significant antecedent research and concepts which have been established prior to the research on the diffusion process among and within colleges.

Diffusion Research.--In an attempt to understand diffusion research more thoroughly and its related implications to student personnel work, it may be thought of as the spread of a new idea from its source of invention or creation to its ultimate users or adopters. Anthropologists have described the process as " . . . the spread of an item within a culture--from the innovator to a group and from one group to another" (Etzioni, 1964, p. 406).

Others have defined it "as the process by which an innovation is transferred from one person or aggregate of persons to another person or aggregate of persons in a social system over time" (Lin, 1966, p. 12). The crucial elements in the diffusion of innovations as outlined by most researchers are: 1) the innovation or new idea, 2) which is communicated via certain channels, 3) among the members of the social system, 4) over time.

The Innovation: An innovation, whether or not in student personnel work, may be defined as an idea perceived as new by the individual. It is not necessarily an invention. In fact, whether or not an idea is objectively new as measured by the amount of time elapsed since its discovery or its first use is not as important as the fact that it is new to the social system, the individual, or the adopting unit. Barnett (1953, p. 7) defines an innovation as "any thought, behavior or thing that is new because it is quantitatively different from existing forms."

Communication: The communication process represents the centroid of the diffusion process as was mentioned in Chapter I in the theoretical assumptions section. Both personal and impersonal communication

medias play important roles during the adoption process through which the individual or adopting unit passes from first hearing about an innovation to final adoption or rejection. Communication models such as Berlo's (1960) and academic leadership as provided by Elihu Katz and Paul Lazarsfeld have assisted in the delineation of the influence of the communication variable.

Social System: Although most diffusion studies have used the individual as the adopting unit, it becomes apparent rather quickly that the individual does not operate in isolation of his social system when it comes to decision-making. Coleman and others (1956) in their study of innovative physicians identified the importance of the social and advisory reference groups as a variable effecting adoption of innovations. The reference group to which the individual or the adopting unit goes to seek information, sanction, approval and/or advice determines the individual's or adopting unit's behavior. The social system serves as the informal communication and teaching mechanism. It would be expected then that the orientation of the social system would directly effect the innovativeness of its members.

Time: Time of adoption has been one means for differentiating the innovator and the non-innovator. The innovator or the traits of innovativeness have been usually assigned to the individuals or adopting unit which is relatively earlier in accepting or adopting a new practice before other members of the social system adopt. In other sections of this chapter and in Chapter III, further evidence will be given in support of the importance of the time

variable in the establishment of adopter categories and the identification of innovators and non-innovators.

The Adoption Process.--The process through which an individual or adopting unit such as a student personnel program passes when considering the adoption and rejection of an innovation has been described variously by different researchers. Ryan and Gross (1943) were probably the first to recognize that the adoption of a new idea consisted of stages. They defined the stages as awareness, conviction, trial acceptance and complete adoption. Rogers (1962, p. 81-86), in his review of the adoption literature, analyzed other researchers' categories and developed a five-step adoption model. These steps consisted of awareness, interest, evaluation, trial, and finally, either adoption or rejection. It should be noted that rejection may take place at any one of the five stages of adoption.

In studying educational innovations, Miles (1964, p. 19-20) created a four-stage adoption model. The stages consisted of the following:

1) design: The innovation is discovered, developed, invented.

2) awareness-interest: The target system becomes aware of the existence of the designed innovation, becomes interested in it, and seeks information about its characteristics.

3) evaluation: The target system performs a kind of mental trial on the innovation and it forms opinions about its efficacy in accomplishing the system's goals, its feasibility and its cost.

4) trial: The target system engages in a small scale trial in order to assess the innovation consequences.

The similarity between Rogers, Miles and other adoption stage models is readily apparent. The various models encompass basically the same concepts. Two researchers have designed empirical studies to test the validity of the concept of five-stage adoption process. Both concluded that the concept is valid (Copp, 1957, and Beal, 1957).

Factors Effecting Rate of Adoption of Innovativeness.--As would be expected, not all new ideas or practices are adopted at the same rate. Mort (1946, p. 199-200) found that kindergartens required fifty years to reach widespread adoption. Allen (1956) found that a period of only eighteen years was necessary for the adoption of driver training by United States schools. Carlson (1964) showed that only five years was required for modern math to reach almost complete adoption among Pennsylvania schools. The rate of adoption of a new idea, practice or product varies according to how it is perceived by the potential adopter. Generally, more rapid rates of adoption are characteristic of innovations that:

1) Have more relative advantage over the existing ideas being replaced.

2) Are less complex; new ideas that are simpler to understand are adopted more quickly than ideas difficult to grasp.

3) Are more visible; new ideas whose results are more plainly seen are more quickly adopted than those whose results are difficult to perceive.

4) Are more divisible for trial; new ideas which allow small scale sample experiments are more readily acceptable than ideas which require a complete change at once and allow less possibility of trial.

5) Are more compatible; new ideas that fit with presently held values and attitudes more easily gain approval than those contrary to individuals' values (Rogers, 1962, p. 124).

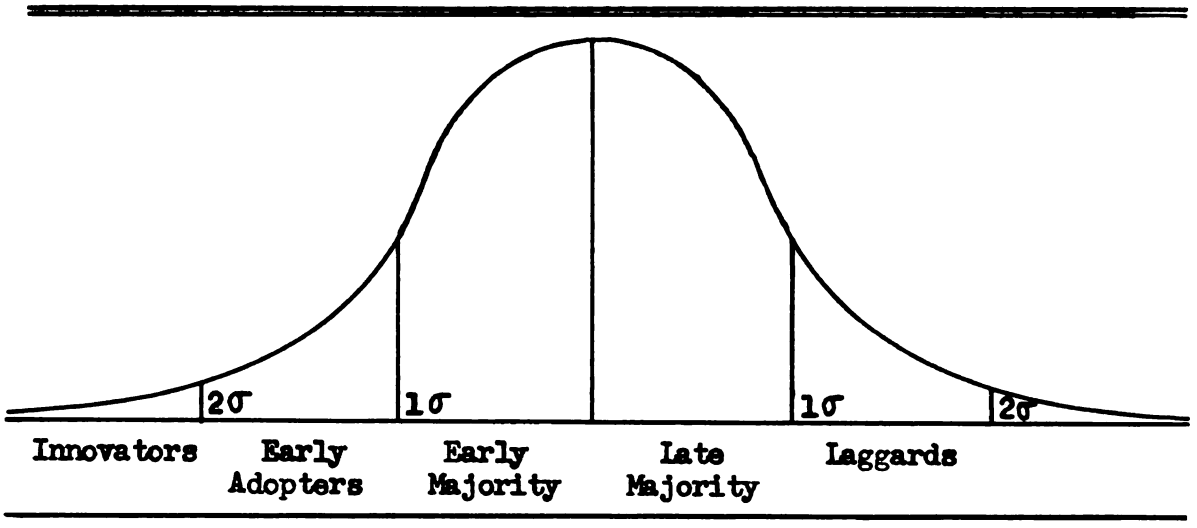
Adopter Categories.--Innovativeness has most frequently been defined as the degree to which an individual or adopting unit is relatively earlier than other individuals or adopting units in adopting new ideas, practices, or products in a social system. A common approach to the identification and classification of innovators, and for that matter other adopter categories, has been to classify adopters into categories by using time of adoption as a criterion and to identify and compare the individuals falling in each classification. Rogers (1960, p. 345-54), for example, classified individuals in a given social system as innovators, early adopters, early majority, late majority, and laggards. As was indicated in Chapter I, empirical research has indicated that the diffusion of most innovations can be represented on a bell-shaped curve unless some special circumstances occur during the adoption period. For conceptual purposes then--although the variable innovativeness is continuous--it can be partitioned into adopter categories. Procedures for partitioning the continuum into categories varies with different researchers. Rogers (1962, p. 162), for example, partitioned the continuum according to standard deviations. (See Figure 2) Innovativeness also appears to be a consistent type of behavior. If the adoption unit is innovative on one idea, it tends to be similarly innovative for other new ideas.

The Social System as the Unit of Adoption

Most diffusion researchers in the past have concentrated their efforts on the study of the individual as the adopting unit almost to the exclusion of studying the social system as the adoption unit.

FIGURE 2

ADOPTER CATEGORIZATION ON THE BASIS OF RELATIVE TIME OF ADOPTION OF INNOVATIONS



A recent review of the literature indicated that only seven studies have attempted to investigate the diffusion of innovations using the social system as the unit of analysis. Out of the seven studies, four traced the diffusion of innovations within educational organizations (Rogers and Shoemaker, 1968).

Lin (1966) attempted to measure two new variables as they related to three innovative Michigan high schools. These variables were: 1) innovation internalization, defined as the extent to which a member of an organization perceives the innovation to be relevant and valuable to his role performance, and 2) change orientation, defined as an individual's degree of general predisposition toward change. He found that the first variable correlated with twenty-two organizational variables, and the second variable correlated with eighteen variables.

Queeley and Street (1965) contrasted an elementary school which had adopted multi-grading of pupils with a school which adopted the practice at a later date. They found that the innovative school had a greater staff participation in decision-making, was more interested in students and had a higher pupil achievement than the later adopting school.

The only study this writer found in the review of the literature relating to diffusion of innovations in higher education was done by Davis (1965). His study consisted of a thorough analysis, by utilizing a case study method, of both an innovative and a non-innovative college. The major problem explored by Davis was related to the adoption of educational innovations by private liberal arts colleges. The problems outlined by Davis were as follows: 1) What personal variables characterize individuals in an innovative college? 2) What features of the organization normative structure operate to promote innovation? 3) What are the factors within the relationship between the individuals and the organization which account for the college receptivity to educational innovativeness?

Although Davis's data collection techniques and interview schedules were extensive and thorough, his findings must be considered with extreme caution. His study consisted of only two institutions—the most innovative and least innovative colleges within the population.

Based upon the limited sample, however, Davis (1965, p. 114) indicated there was reason to believe that the adoption process for a collegiate institution is similar to other research findings regarding non-collegiate institutions. A college seems to go through

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the same "stages" of adoption as reported by other diffusion researchers. His findings also appeared to verify Mort's (1964, p. 326) observations that colleges like other organizations if reluctant to adopt one innovation tend to be reluctant to adopt other innovations.

Davis (1965) set forth other findings, which were felt to be germane to this study: 1) No significant difference existed between the age of the staff at the innovative college as compared to the age of staff at the non-innovative college. 2) The faculty at the innovative institutions held longer tenure in the institution than those at non-innovative colleges. 3) Results based upon a Sixteen Personality Factor Questionnaire indicated no significant difference between the staffs at the two colleges studied regarding their awareness of potential innovations available for adoption.

One of the more interesting findings of Davis's study was the extent of faculty involvement in policy determination. He found that the innovative faculty participated to a greater degree in policy decisions than the faculty at the non-innovative college. Statistical significance was even greater when considering the differences in faculty involvement in the hiring and tenure regarding the faculty. The faculty at the non-innovative college, however, had a significantly greater degree of participation in policy formation in student personnel decisions. The two student personnel areas upon which these conclusions were based were admissions and financial aid policies. He (Davis, 1965, p. 71) concluded that the reason for the difference existing between college policy and

student personnel policy decisions was that at the non-innovative college, the faculty was more reluctant to set aside traditions of establishing student controls, whereas at the innovative college, the faculty was attempting to promote more responsibility among the students for their own affairs.

Finally, Davis (1965, p. 118) concluded that when attempting to effect innovation in a college, the participation by the faculty in decision-making becomes an important variable since faculty involvement enlists the assistance and power of the formal and informal groups to enforce the decisions to adopt an innovation. This finding tends to support a similar theory as outlined by March and Simon (1958, p. 197). Davis (1965, p. 117) also concluded that there were indications based on results to support Brickell's (1954, p. 503) findings that although faculty may lend support and give consensus to change, it is the administrator or head of the department who promotes or prevents innovation because he is powerful. It is not due to his monopoly on imagination, creativity, or interest in change, but simply because he has the authority to precipitate a decision.

Many of the findings of Davis's study appeared to provide the most direct and relevant data for this study; however, the limitations of his population makes generalization to other colleges most tenuous. Nevertheless, the thoroughness and penetration in depth into the colleges studied provides an excellent basis for replication of tested hypotheses and for the generation of new theories and hypotheses.

Theories of Organizational Change

The reported research on the diffusion of innovations examining the process through which an individual passes when adopting a new idea was numerous, but there were only a few studies which exist examining the social system as the unit of adoption. Because this study examined the social system as the unit of adoption, it was felt that an analysis of the theoretical models on organizational change would provide additional information and a more comprehensive background for understanding the process of change which takes place in a college student personnel program.

A social system or social organization has been given various definitions. Griffiths (1964, p. 426) has succinctly defined it as "an ensemble of individuals who perform a task sanctioned by the society in which it functions, in which its members perform interrelated and coordinated functions, in order that one or more tasks may be completed." For the purposes of this study, a college was considered as a social system, and therefore, fit within Griffiths' construct.

Another method of classifying organizations has been on a formal and informal continuum (Gallaher, 1965, p. 45). Both types of organizations have an affect upon the adoption process. The formal organization has frequently been defined as an organization which has been deliberately conceived and planned and which has explicit purposes and goals for existing. It is usually an organization which the public supports or is knowledgeable of its existence. If the formal organization is of any size, it is characterized by a

centralized authority and an ordered status hierarchy. In relation to directed change, the formal organization is usually slow in changing, and it is dependent upon the ascribed roles of the legitimized authorities (Gallaher, 1965, p. 45).

In contrast to the formal organization, the informal organization develops without explicit plan, purpose, or goals. It is spontaneously formed to serve the needs of its individual members, for example, groups which take work coffee breaks together, or possibly members of the same organization who are attracted to each other by some unique or common interest. There is no formal plan or organizational chart. Its significance, however, in the adoption process, as outlined by Rogers (1968), is that it exists to protect its members. The informal organization can directly or indirectly put sanctions on practices which are adopted by the formal organization. This organization, if it so desires, can inhibit the adoption process or it can increase the rate of adoption.

Theories of Administrative Change.--Prior to examining models of change which have been developed specifically for educational institutions, a brief review of basic communication models should be examined. Although the original two-step flow model of communication as developed by Katz and Lazarsfeld, Deutchmann and Danielson, and rural sociologists has been subject to criticism (Troldahl, 1963), its basic concept is applicable to the process whereby new ideas are introduced into an organization. The theorized two-step communication pattern as applied to an educational institution is as follows:
1) The innovation is communicated to some individual or representative

of the adoption unit, perhaps the chief student personnel administrator, and 2) the innovation is then communicated to the members (perhaps his staff) within the system who must either adopt or reject the idea. For example, a student personnel administrator while attending a professional conference learns of a new idea or practice from some individual outside his organization. He then returns to his college and informs his staff and others who may be within the decision-making group, thus diffusing the idea or practice within the organization and forcing the organization to take some action upon the new concept which has been introduced.

The type of new practice introduced to the student personnel organization may also effect whether it may be adopted independently by the individuals, adopted by the student personnel department without the necessity of college-wide adoption, or whether the entire college must decide upon adoption because it effects the system as a whole. In an attempt to conceptualize the decision-making options available to an organization or social system, Rogers (1968) outlined four conceptual categories. They were:

1) Optional decisions, which are made by an individual regardless of the decisions of other individuals in the social system. Even in this case, the individual's decision is no doubt influenced by the norms of his social system, his need to conform, or other group pressures.

2) Contingent decisions in which the individual may adopt an innovation only after a majority of his social system has already made an adoption decision; he is not forced, however, to conform to the group decision.

3) Collective decisions, in which individuals in the social system agree to adopt or reject by consensus, and all must conform to the system's decision once it is made.

4) Authority decisions are those forced upon an individual by someone in a superordinate power position, such as a supervisor in a bureaucratic organization. The attitudes and opinions of the individual toward the innovation do not effect his adoption or rejection; he is simply told what behavior is expected of him.

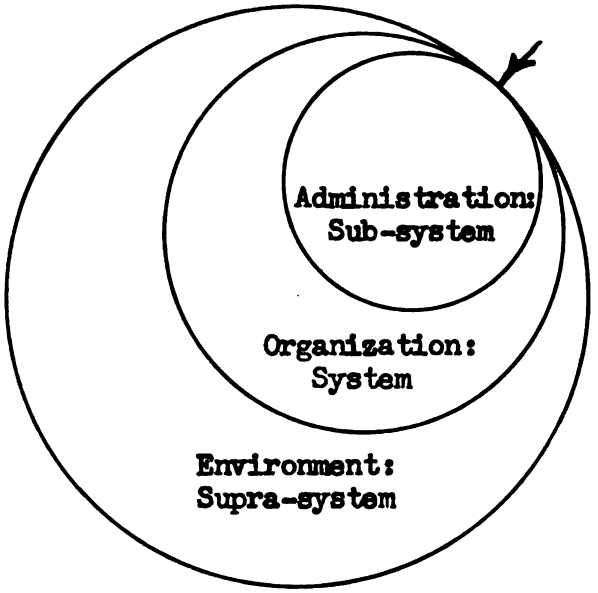
When Gallaher (1965, p. 39) analyzed change using the public school as a social system, he developed a two-part conceptual paradigm. The first concept of the change process was by non-directed procedures. This type of change would be described as consensual agreement by either formal or informal groups. When comparing Gallaher's non-directed change to Rogers' model, it would be the same as change by optional or contingent decision.

Gallaher's second concept of change was by directed change. He indicated that this type of change is the most frequent type in organizational systems, and it should be the one which receives the most research attention. Directed change is change by a structured situation in which an advocate interferes actively and purposefully. In this situation, the change agent or advocate of change consciously selects elements in a target system and by stimulating the acceptance of innovations and inhibiting the practice of prior patterns of behavior, he manages the direction of change. When comparing directed change with Rogers' concept of authority decisions, they appeared to be similar.

Another model of organizational change which appeared to be relevant and applicable to the educational organizations has been formulated by Griffiths (1964, p. 430-436). In his model (See Figure 3) of administrative change, the organization consists of three conceptual sub-systems.

FIGURE 3

GRIFFITHS' MODEL OF ORGANIZATIONAL CHANGE



In this model, an organizational system is comprised of human interactions that maintain a definite boundary. He maintains that the closer the three interacting systems come together at a point of tangency (See arrow, Figure 3), the more open the system is to change. He argued that when the three systems are together (represented as tangent lines in the graphic model), there is significantly less distortion of communication between the supra-system and the administrative sub-system which legitimizes the decision-making. The further the lines are from tangency, the more insular are the qualities of the communication from one system to another. Thus, the resultant effect is greater message distortion, misperception of attitudes and needs, and lack of understanding

between systems. Griffiths' model parallels the theories of administrative change as outlined by John Gardner (1963). Griffiths and Gardner agree that the major impetus for change in organizations is from outside the system. Impetus for change, therefore, may come from any one or more of the following: 1) the chief administrator from outside the system being named the successor of a previous administrator, 2) the appointment of staff members from outside the system, and 3) the degree and extent of pressure brought to bear upon the system from outside sources. This theory of administrative change also agrees with Davis' (1965, p. 116) and Miles' (1964, p. 643) findings indicating the importance of change coming from members brought into the system from another social system.

Conclusions and Summary Drawn from the Review of Literature

Conclusions.--It appeared from the review of literature that most writers agree upon the study of authority and cooperative decisions as being the area in need of the most study. In these types of organizational change, an advocate of change, such as the chief student personnel administrator, is a most important element in the change process. The degree to which he is successful in advocating change or retarding change depends primarily upon 1) how he as the controller of organizational change is in tune with the needs of the organization and its constituency, and particularly how he plays his role as an authority, and 2) how the individuals will be affected by the change process, their perceptions of their needs and those of the organization.

The success of the educational administrator as an advocate of change appears to have a definite effect upon innovation. The chief student personnel administrator, as well as the president of a college, has a role within the decision-making hierarchy. From their authoritarian position, it would appear that they would be able to advocate change in the formal organization due to their prestige and legitimized role of controller and policy decision-maker.

This study of the diffusion and adoption of collegiate student personnel innovations used the institution's college student personnel program as the adopting unit for analysis; however, the major emphasis has been placed on the chief student personnel administrator as an element in the adoption unit and only incidental attention was given to other elements within the institution. Although the college as a whole must accept or reject most innovations, the chief student personnel administrator is most frequently at the center of the decision process regarding student personnel innovations. Whether he is the advocate of change or whether he is convinced by his subordinates, superiors, or outside public, he is, nevertheless, in the position to make final decisions.

Due to the paucity of literature relating to student personnel administrators in higher education as advocates of change within their own educational institution, it was felt that sufficient justification existed (Davis, 1965, p. 114) which indicated the public school administrator could be considered analogous to the chief student personnel administrator. The similarity which exists between the administrative roles which both play regarding interested publics

is, however, congruent. The student personnel administrator as well as the superintendent has concerned public on either side of the administrative decision process. On one side is the student population and subordinate members of his staff. On the other side is the outside public which sanctions the institution and the administrative personnel who supersedes him in the hierarchy of the organization. The latter are board members, presidents, state or national educational officials. Gallaher (1965, p. 50) defined this role as the "man in the middle."

Spindler (1963, p. 143) further defined this middle-man role. However, he questioned the premise that he is an advocate of change. He stated:

> His job is in large part that of maintaining a working equilibrium of at best antagonistically cooperative forces. This is one of the reasons why educational administrators are rarely outspoken protagonists of a consistent and vigorously profiled point of view. Given the nature of our culture and social system and the close connection between the public and the schools, he cannot alienate significant segments of that public and stay in business.

Another student of educational change felt that the educational administrator may not be--and frequently is not--the original source of interest in a new type of program, but because of his legitimized authority role, he can effect change (Brickell, 1961, p. 24). It would appear, therefore, from the available literature, although not definitively so, the role of the educational administrator can be an advocate of change. It is evident, however, in the change process whether it be advocate of change or middle man allowing change or retarding change, the educational administrator has played a key factor in the regulation of change.

Griffiths as well as Rogers and Stanfield has provided further conclusive evidence regarding the variables which effect propensity to innovate. Griffiths (1964, p. 430) outlined eight propositions enabling and inhibiting change. Those enabling change in the educational organization are:

1) The major impetus for change in organizations is from the outside.

2) The degree and duration of change is directly proportional to the intensity of the stimulus from the social system within and without the organization structure.

3) Change in an organization is more probable if the successor to the chief administrator is from outside the organization, than if he is from inside the organization.

4) Living systems respond to continuously increasing stress first by a lag in response, then by an over-compensatory response, and finally the catastrophic collapse of the system.

Conditions which inhibit change are:

1) The number of innovations is inversely proportional to the tenure of the chief administrator.

2) The more hierarchical the structure of an organization, the less the possibility of change.

3) When change in an organization does occur, it will tend to occur from the top down, not from the bottom up.

4) The greater the agreement and harmony between departments and sub-systems within the organization, the less chance there is for change.

A more extensive and empirical attempt to pull together the variables related to innovativeness was accomplished by Rogers and Stanfield (1966, p. 22). They identified 2,486 research findings relating other (independent) variables to innovativeness. Their operational measures of innovativeness were: 1) the adoption or

non-adoption of one new idea or set of new ideas, or 2) the degree to which the unit of adoption is relatively earlier in adopting new ideas than other members of his social system. The variables which they found related to innovativeness are presented in Table 2-3.

Summary.--Even though the chief student personnel administrator has been in existence for numerous years, it has not been until recently that changes in society have dictated that he provide an environment which minimizes the abrasive aspects of the college climate and provide an environment which maximizes the student's potential. In recent years, numerous new student personnel practices, ideas, and concepts have been introduced. Even though there is a rather sizable body of diffusion research in existence, little if any research has been done to determine how these practices are communicated among colleges, how colleges come to adopt a new practice, or what differentiates an institution which readily accepts innovation compared to those which tend to be non-innovative.

Most of the empirical research which was found, however, was related to the individual as the adoption unit. Ample empirical research was found which strongly supported the theories that the adoption process consisted of a new idea or product which is communicated through certain channels among members of a social system over a given period of time.

It was further found that the individual passes through a series of processes before adoption, namely, awareness of the idea, interest in it, evaluation of it, possibly some sort of trial adoption period, and eventually adoption or rejection of the innovation. The empirical evidences also indicated that potential or

TABLE 2-3

VARIABLES RELATED TO INNOVATIVENESS

Characteristics of the Unit of Adoption	Number of Publications with Each Type of Relationship to Innovativeness: Positive (%)	None (%)	Negative (%)	Conditional (%)	Total (%)	Total Number of Publication
1. Education	74.6	16.1	5.2	4.1	100	193
2. Age	32.3	40.5	17.7	9.5	100	158
3. Knowledge-ability	78.8	16.7	1.5	3.0	100	66
4. Attitude toward Change	73.6	14.5	8.2	3.8	100	159
5. Empathy	75.0	0.0	25.0	0.0	100	4
6. Mental Rigidity	20.8	25.0	50.0	4.2	100	24
7. Cosmopoliteness	80.8	11.0	2.7	5.5	100	73
8. Mass Media Exposure	85.7	12.2	0.0	2.0	100	49
9. Contact with Change Agencies	91.9	6.6	0.0	1.5	100	136
10. Deviance from Norms	53.6	14.3	28.6	3.6	100	28
11. Group Partici-pation	78.8	10.3	6.4	4.5	100	156
12. Interpersonal Communication Exposure	70.0	15.0	15.0	0.0	100	40
13. Opinion Leadership	64.3	21.4	7.1	7.1	100	14

Source: Rogers and Stanfield, 1966, p. 22, 24 and 26.

previous adopters could be classified into adopter categories, since the adoption of innovations is a continuous process over time.

Though numerous studies exist which examine the individual as the adopting unit, only seven were found which reviewed the social system as the adopting unit. Davis's (1965) study was the only one that investigated higher educational institutions as the unit of adoption. He found that faculty involvement in policy formation, except in student personnel policies, was directly related to the innovativeness of the institution.

Since a paucity of literature existed investigating the institution as the adopting unit, a number of theoretical models of organizational change were presented. The models attempted to provide further data explaining the process through which a social system accepts change or adopts innovations.

Finally a discussion was presented of the role which the administrator plays in effecting change. The evidence available indicated that he plays a middle-man role in allowing new ideas to penetrate the social system. He also, by his legitimized authority role, can serve as the advocate of forced change.

CHAPTER III

DESIGN AND RESEARCH METHODOLOGY

There were two major phases of this particular research study. The first was the procedures and methodology of classifying colleges with innovative and non-innovative student personnel programs into mutually exclusive groups. The second was the study of different personal, educational and organizational variables of innovative programs as contrasted to non-innovative programs. Because of the two distinct phases of the study, the first part of this chapter concerns itself with instrumentation, delimitations, and the population from which two mutually exclusive groups, namely innovators and non-innovators, could be drawn. The procedure involved in the actual identification of the innovative and non-innovative college student personnel program to be studied is included in the second section of the chapter. In the final part of the chapter, the statistical hypotheses to determine if differences exist between innovators and non-innovators will be presented followed by a description of the methodology used in testing the hypotheses.

Development of Adoption Scale

Before the specific objectives of the study could be investigated--innovative student personnel programs contrasted to non-innovative programs--a means of accurately identifying innovativeness

had to be devised. Once innovativeness could be measured, it would then be possible to classify colleges into adopter categories as well as to determine the colleges which would fall within the perimeters of the investigation.

As was stated in Chapter II, this investigator was unable to discover any research or instrumentation which dealt directly with college student personnel programs as related to innovativeness. Consequently, if the investigation was to compare innovative programs with non-innovative programs, it was also necessary to develop some scale for objectively classifying college student personnel programs on a continuum of innovativeness.

Rogers' (1962, p. 160-164) review of 509 studies on adoption and diffusion of innovations indicated three methods of measuring innovativeness which have been utilized by previous researchers. One procedure was to classify adopting units into adopter categories by using "experts'" or judges' ratings. This procedure is probably the most expedient and efficient; however, it also has inherent weaknesses since the biases of the judges may interfere with objective ratings. Not only are representative judges difficult to locate, but there is also evidence that the judge's position in the social structure affects his view of the structure which he is rating (Rogers, 1962, p. 161).

A second method for rating adopter units into categories has been the procedure whereby individual or adopting units rate themselves as to their own innovativeness. There is some evidence available that this method has some validity (Rogers and Rogers, 1961). When using this procedure, however, researchers have found

that the individual has a tendency to perceive himself as being more innovative than he actually is.

A third procedure of placing adopter units into categories has been by means of adoption scales which use a number of innovations adopted by the unit and the relative time of adoption for each innovation. This method basically consists of the open-ended questionnaire which asks the individual or adoption unit to respond concerning whether or not they have adopted the innovation. If they have, the date of adoption is requested. This procedure overcomes the inherent weakness of the two previously outlined methods.

Although adoption scales have become the most popular method of rating innovativeness, it has also been subject to criticism. Since the adoption scales response set is recall information, the critics have attacked this method on the grounds that it may lack sufficient validity and reliability. Rogers and Rogers (1961) attempted to answer the critics by reviewing twenty-six studies using adoption scales. They found that adoption scales were reasonably valid providing the adoption scale consisted of a number of innovations. In analyzing the reliability of adoption scales, they found a range of +.70 to +.84 correlation coefficient on split-half reliability with educational adoption scales having the highest reliability. When checking reliability of respondents' recall by test-retest methods, they found a range of +.52 to +.93 reliability coefficient. When analyzing internal consistency and the unidimensionality of adoption scales, there was some evidence that the scales are internally consistant, but there was no clear cut evidence to support unidimensionality, i.e., the degree to which

adoption scales measure a single dimension (Rogers and Rogers, 1961). Fliegel (1965), however, concluded after testing a hypothesis of unidimensionality of the adoption variable pertaining to eleven farm practices that "adoption could be treated as a single dimension covering a range of practices."

After considering all factors, it was decided that an independent means of determining innovativeness, such as offered by adoption scales, would provide the most accurate method of ranking colleges with innovative student personnel programs on a continuum with colleges with non-innovative programs. Although this method is not perfect in every aspect, it nevertheless appears to be the best single measure available at the present time. Consequently, all findings should be considered in relation to the instrumentation used to identify the sample.

Rogers, Havens and Cartano (1962, p. 2) have suggested that the reliability and validity of adoption scales can be improved if the following precautions are taken into consideration when the scale is being developed. They are:

1) Contain more than fifteen items.
2) Take into consideration the number of innovations adopted.
3) Consider the relative time of adoption.
4) Include items that most of the people investigated could adopt.
5) Include correction factors for items that do not apply to all individuals.

An attempt was made to incorporate these points into the development of the adoption scale used in this study.

Procedure for the Development of the Instrument.--The initial phase in building the instrument was concerned with identifying as many as possible of the more recent developments, ideas, practices and

procedures incorporated into college student personnel work. It was generally felt that the items included in the instrument should be innovations which can be adopted by almost all respondents included in the sample. Also, to insure better discrimination at either end of the continuum, innovations included on the scale should contain both practices which have been adopted by almost all of the institutions and some which have been adopted by only a few.

In order to develop a list of new practices which could be examined for appropriateness for inclusion into the instrument, the following procedure was followed: 1) The professional literature was reviewed for the purpose of identifying new practices, procedures and/or concepts relating to college student personnel work. 2) Ten experts were invited to "brain-storm" with this investigator in a series of sessions with the expressed purpose of compiling a list of relatively new practices and procedures in the organization, administration, and practice of college student personnel work.[1]

These two procedures resulted in a list of seventy-five recently developed practices. The seventy-five practices were compiled on a list and returned to the ten experts. The raters were asked to examine each item and then rate it on a one to five scale based upon the following criteria: 1) the ability of the item to discriminate between innovative and non-innovative programs, 2) the recency of the innovation, and 3) the relevance of the innovation or new practice to student personnel work. The experts were given the following additional instructions: 1) Each item should be judged

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[1]Names of ten experts are presented in Appendix VI.

in relation to its appropriateness to the liberal arts college only, and 2) each item was to measure innovativeness, not the value or quality of the practice.

The judges' ratings were analyzed and only the items that received a median score of two or below were included in the first draft of the instrument. (Items were rated as follows: 1 being the most appropriate and 5 being the least appropriate.) The first draft contained thirty-four out of the original seventy-five items. The first draft of the instrument along with the instructions for completing it was given to a pilot sample of ten deans of students. The deans included in the pilot sample were instructed to complete the instrument as it applied to their institution and also to criticize the instrument in general as well as the wording and clarity of each item contained in the instrument. The final edition of the instrument entitled "Adoption of Selected Student Personnel Practices Inventory" was revised in light of the criticism of the pilot sample (See Appendix I).

Scoring Procedure for the Instrument.--One of the major variables to be included in the development of the instrument was relative time of adoption. The instrument was designed to elicit this information; however, this apparently was more difficult than originally expected. Many of the respondents failed to indicate the date of adoption of given practices, indicated they had adopted the practice but did not know the exact date, or indicated adoption of the practice with an estimated date.

In order to determine what the overall effect of the incomplete or inaccurate responses was, two separate scoring

procedures were developed. The two scoring procedures were:
1) Utilizing the total number of practices adopted and time of adoption only as the major variables with a correction factor for non-applicable practices (Rogers, Havens and Cartano, 1962, p. 2).
2) Utilizing a weighted score for practices adopted; i.e., an adopted practice equals a weighted score of two, practices adopted and discontinued equaling two, and practices under consideration equaling one. This method of scoring also contained a correction factor for non-applicable practices. The coefficient of correlation between these two scoring procedures was +.90. Since the latter procedure as mentioned above appeared to be superior in ease of scoring and correlated highly (+.90) with the recommended scoring procedures as outlined by Rogers, Havens and Cartano (1962), the following formula was decided upon:

$$\text{Innovativeness Score} = 100 \left[\frac{\text{Total weighted score}}{\text{Total weighted score possible from number of applicable practices}} \right]$$

One hundred was inserted into the formula to facilitate handling of decimals.

Validity, Reliability and Normality of the Instrument.--The validity of the instrument is difficult to determine. Since each item needed a rather high degree of expert agreement to be included in the instrument, there was reason to believe that content validity was high. Since no other instrument of this type was found, the question of construct and predictive validity was unanswerable. Also since the development of this instrument was not the main objective of the study,

but only a means to the main objective, further attempts to ascertain its validity were not undertaken.

In checking the reliability of the instrument, it was decided to use the split-half method. Since the scoring of the instrument was done by the number of practices adopted rather than by the relative time of adoption, it was felt that split-half reliability check was more appropriate than test-retest since recall data was not used. The split-half reliability coefficients based upon a sample of 193 returns was +.83.[1]

Since the ability to dichotomize the sample into adopter categories is based upon the assumption of the sample population approaching normality, the response frequency was subjected to statistical analysis. The closer the response frequency approximates the normal bell-shaped curve, the more appropriate the division of adopter categories becomes. If the response frequency approaches normality, it would also provide support of the previous research as outlined in Chapters I and II.

In a visual analysis of the response frequency, it appeared that the response approached normality with the mean of 51.17, a median of 52.0, and a modal score of 52.94. The visual survey, however, did not indicate whether or not the distribution was symmetrical, peaked or flat. Therefore, further statistical tests were applied to determine the skewness and kurtosis of the sampling distribution. The overall statistical evidence of the sampling distributions is presented in Table 3-1.

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[1] $r < .181$, $p > .01$

TABLE 3-1

FREQUENCY DISTRIBUTION AND NORMALITY CHECK FOR THE INSTRUMENT, "ADOPTION OF SELECTED STUDENT PERSONNEL PRACTICES INVENTORY"

Number	Mean	Median	Mode	Standard Deviation	Skewness	Kurtosis
(N)=193	51.173	51	52.94	14.359	0.162	2.741

From an analysis of the statistical data, it can be seen that the frequency distribution approached normality with the exception of being slightly skewed in a negative direction and slightly lepoto-kurtic (Interpretation of data from Peatman, 1947, p. 392, and McNemar, 1962, p. 25-8).

Sample Population

Data Collection for Initial Sample.--The colleges which composed the social system to be studied were sent one copy of the instrument, a general data sheet and a cover letter identifying the study and the investigator. (See Appendix I, II, and III) When the instrument was returned by the respondent, it was dated, recorded as being returned, and examined by the investigator. Three weeks after the original mailing, the respondents who had not returned the instrument were sent a reminder letter. (See Appendix IV) If the instrument was not returned after six weeks from the original mailing date, a new cover letter and instrument was sent. (See Appendix V) If the instrument was not returned after nine weeks from the original mailing date, a personal reminder letter was sent. The procedure of administering the instrument to the sample population resulted in 201

institutions responding out of 245 (82%) in the original sample. Of 201 received, eight were not usable, leaving 193 usable returns out of 245 or 78.77%.

Criteria for Establishing Population Sample.--A number of unique factors were involved in the identification of the original sample of chief student personnel administrators who were chosen to receive the adoption scale. Since innovations could not be considered equally applicable to all colleges, it was necessary to define a common type of social system which for purposes of this study represented a number of schools which were similar on a number of characteristics. For example, a state supported institution of higher education with an enrollment of 40,000 students may have relatively few practices, procedures, programs, and goals in common with a privately endowed, church related liberal arts college with an enrollment of only 800. Also, researchers have found that the diffusion process in higher education generally follows this pattern: large state supported institutions adopt new practices first; private institutions adopt second; teachers colleges adopt third; technical institutions are usually the last to adopt new practices (Card, 1966, p. 11).

Since the diffusion of new ideas is generally dependent upon either mass media or personal communication, it would follow that, in a given social system, opportunity is greater for the members of that social system to communicate within the system than outside of the system. When comparing the adoption rate of individuals or adopting units, a more realistic comparison can be made regarding the diffusion rate and the variables which separate the innovators

from the non-innovators when the unit of analysis has many characteristics in common.

Also considered in the identification of the social system to be studied was the geographic proximity of the colleges. Since for some members of the social system the adoption process may involve personal observation of a new practice or personnel communication with some other member who already adopted the practice, it was decided to restrict the geographic boundaries of the social system. The rationale for the procedure was to eliminate extraneous variables resulting from comparing institutions from different regions of the country.

Another consideration in the identification of the population to be studied was the total number of schools which needed to be included in the original population to insure a representative sample of innovators and non-innovators. As stated in Chapters I and II, there was sufficient evidence to support the assumption that the adopting process is continuous and that it can be shown graphically in the form of a bell-shaped curve.

The first requirements then were based upon the operational definitions of innovator and non-innovator as described previously. That is, to be included in the two groups to be studied the college had to meet the following criteria:

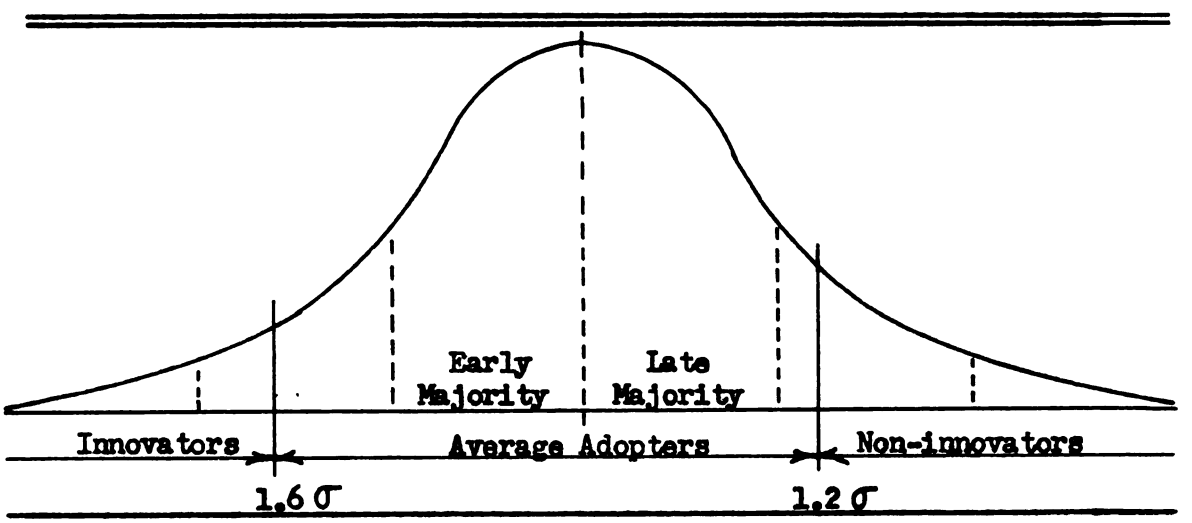
1) Student enrollment of 5,000 or less
2) Private liberal arts colleges as identified by the United States Office of Education - Institutional Directory, Part III, for Higher Education, 1966
3) Coeducational
4) Located within the following midwestern states: Arkansas, Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, Pennsylvania, South Dakota, Tennessee, West Virginia, and Wisconsin

5) A score of either 1.6 standard deviation above or 1.2 standard deviation below the mean on the "Adoption of Selected Student Personnel Practices Inventory"[1]

An additional requirement was established to control for the extraneous variable of how long the person had been the chief student personnel administrator in the college under study. Since the study not only used the college student personnel program as the adopting unit but also studied the characteristics of its chief student personnel administrator, it was necessary to eliminate colleges which met the first requirement as stated above but where the chief personnel administrator actually inherited the program from his predecessor. Therefore for this study, it was necessary for the chief student personnel administrator to have held his present position for a minimum of four years. The adopter categories established for this study are graphically represented in Figure 4.

FIGURE 4

ADOPTER CATEGORIES USED IN THIS STUDY



[1]Additional data indicating the use of standard deviations for identification of innovators and non-innovators can be found on pages 58 and 59.

Population Sample: Demographic Data.--Each "Adoption of Selected Student Personnel Practices Inventory" was examined to determine if it met the established criteria. Of the 245 institutions included in the original population sample, 201 institutions or 82.04% returned the "Adoption of Selected Student Personnel Practices Inventory." Eight of the inventories returned were unusable due to incomplete information or errors in completing the instrument. Thus, 193 institutions or 78.77% of the original sample remained. Of this remaining group, ninety-six institutions were disqualified due to the chief student personnel administrator's inability to meet the tenure requirements. Consequently, ninety-seven or 50.5% of the institutions constituted the final sample used in the selection process for determining which college student personnel programs fell within the innovative group and the non-innovative group.

The procedure for drawing the sample to be studied was done by placing all the colleges in rank order according to the scores received on the "Adoption of Selected Student Personnel Practices Inventory," and then identifying the colleges which fell at the two extremes of the continuum. Twelve colleges or 6% of the sample population which met the qualifying criteria were chosen to represent the innovative and non-innovative groups. If a college, which was considered either innovative or non-innovative according to the score received on the instrument, did not meet the qualifying criteria, it was rejected and the next college in rank order was included.

Chief student personnel administrators holding less than the required minimum of four years in their present positions contributed to a higher loss than was expected. The compilation of statistics

regarding tenure indicated that non-innovative personnel programs have a higher turnover of chief student personnel administrators than any other adopter category. The data relating to the final selection of the innovators and non-innovators appears in Table 3-2.

TABLE 3-2

NUMBER AND STANDARD DEVIATIONS FROM MEAN
OF THE INNOVATOR AND NON-INNOVATOR POPULATION SAMPLE

N = 193	Innovators	Average Adopters	Non-Innovators
Met all requirements to be included	12	73	12
Did not meet requirements	2	69	25
Percent of loss	14%	48.5%	67.5%
Standard Deviation	+1.6	+1.59 to -1.19	-1.2
Percentile Rank	94.52	94.51 to 11.52	11.51

As can be seen when examining the data contained within Table 3-2, it was impossible to draw the sample of innovators and non-innovators which would represent populations of equal distance from the mean. This was due to the large number of chief student personnel administrators who lacked sufficient tenure in the non-innovative group. It was interesting to note that the percent of innovators ineligible due to insufficient tenure was 14% while the percent of loss among non-innovators was 67.5%.

The number of years the administrator spends in his present position appears in Table 3-3. As can be readily seen in the table,

the primary reason for not meeting the requirements for inclusion in the study was insufficient tenure of the chief student personnel administrator. The average number of years in his present position was 5.2 with a range from less than one year to twenty-three years.

TABLE 3-3

TENURE OF CHIEF STUDENT PERSONNEL ADMINISTRATORS

Tenure in Present Position	Met All Requirements: Innov. Group	Met All Requirements: Non-Innov. Group	Average Adopters Who Met All Requirements	Administrators Who Did Not Meet All Requirements
1 - 3	0	0	0	90
4 - 6	5	6	27	0
7 - 9	4	5	16	0
10 - 12	1	1	16	0
13 - 15	0	0	7	0
16 & over	2	0	7	0
Did not state years of tenure	0	0	0	6
Total	12	12	73	96
$\bar{X}$	8.41	6.08	8.77	1.72

An examination of the data presented in Table 3-3 reveals the number of years of tenure held by the chief student personnel administrators for all the colleges included in the sample.

Data indicating the number of years experience represented by the chief student personnel administrator whether or not in his present

position and the ages by categories of the administrators in the population sample can be found in Appendix VII.

Instrumentation for Testing Hypotheses

The ideal method for collecting the data necessary to test the hypotheses would have been by personal interview with each chief student personnel administrator included in the selected innovative and non-innovative population sample. Although this procedure was seriously considered, it was ruled out on the basis of the inability of the researcher to travel extensively throughout the midwest. Consequently, another approach had to be devised which would elicit the necessary information, but in a more expeditious manner.

Since a personal interview was not feasible within the limitations of this study, it was felt that a questionnaire-type instrument combined with a telephone interview would provide the data necessary to complete the study and with a reasonable degree of accuracy and reliability.

The philosophy and rationale underlying the development of the instrument for testing the hypotheses was one of designing items which would elicit information that would make it possible to compare the innovative institutions with the non-innovative institutions. Since no instrument in its entirety was found which would elicit responses appropriate for testing all hypotheses, it was necessary to design an instrument.

Of the sixteen statistical hypotheses, only one--dogmatism--could be tested from data collected by an existing instrument. The Rokeach Dogmatism Scale which was used to test the hypotheses

of open-mindedness will be discussed in a later section of this chapter.

Since no instruments were available for testing the fifteen other hypotheses, each hypothesis was carefully analyzed to determine what kind of information would provide the most valuable data for testing the statistical hypotheses. From the analysis of each hypothesis, three or four differently worded questions were generated. The items generated for the elicitation of data for testing the hypotheses were submitted to ten experts for rating and evaluation. The following procedure was used in validating the items: 1) Immediately following each hypothesis, three or four alternate questions for eliciting data were listed. 2) Each expert was asked to rate the alternate questions in relation to the ability of the question to elicit accurate information. 3) The experts' ratings of the questions were tabulated and only the questions which received the highest degree of agreement were incorporated into the first draft of the instrument.

Rokeach Dogmatism Scale.--Of the sixteen hypotheses which were to be tested, only one--innovators have a more open belief system than non-innovators--could adequately be tested by a previously developed instrument. The Rokeach Dogmatism Scale was developed by Milton J. Rokeach to test his theories about people's different styles of belief systems. The theory and the resulting Dogmatism Scale was an outgrowth of work on the Authoritarian Personality.

An understanding of the terms "open" and "closed" as they refer to the belief systems of individuals starts with the basic premise that it is not so much what you believe that counts, but how

you believe (Rokeach, 1960, p. 6). Rokeach further suggested that:

> A basic characteristic that defines the extent to which a person's system is open or closed is namely the extent to which the person can receive, evaluate and act on relevant information received from the outside on its own intrinsic merits, unencumbered by irrelevant factors in the situation arising from within the person or from the outside (Rokeach, 1960, p. 57).

The relationship of open and closed belief systems to innovativeness was tested by Powell (1962, p. 63). He tested the hypothesis that relatively high dogmatic (closed-minded) individuals are unable to separate what (the message) is said and who (the source) is saying it. Powell attempted to demonstrate that closed-minded individuals are less able to distinguish and evaluate independently the source of a message and the content of a message than are open-minded individuals.

The implications of Powell's research as well as the theory that individuals with open belief systems are more innovative than others would indicate that those with open belief systems are able to innovate without being dependent upon some authority figure, while those with closed belief systems depend upon the approval or support of some authority figure.

Rokeach's Dogmatism Scale, consequently, was found to be most appropriate as an instrument for testing the hypothesis. The Dogmatism Scale contains forty items and each item has a six point response scale. The scale yields a score which can be used to compare the belief systems of individuals or groups. Plant, Minium and Myers (1959) reported odd-even reliability coefficients for the Dogmatism

Scale of +.84 for males and +.85 for females. They also found an internal consistency reliability of +.76.

Because the respondents included in this phase of the study would also be asked to give information for testing the other fifteen hypotheses, it was felt that the forty-item Dogmatism Scale would be too lengthy. For the purposes of economy in completing the total instrument, a twenty-item short form of the Dogmatism Scale was used. Troldahl and Powell (1965) conducted a study to determine the efficiency and reliability of various shorter versions of the Dogmatism Scale. They found the split-half reliability on the forty-item form was +.84. A twenty-item version of the scale, developed by using items taken from the larger scale with the highest reliability coefficients, had a reliability coefficient with the original forty-item scale of +.94. They found that the scale when using split-half reliability coefficients was +.79. (See Appendix VIII for the items included on the scale.)

Testing the Instrument Against the Pilot Sample.--The first draft of the instrument was designed, without listing or giving any indication of the nature or content of the hypotheses to be tested. A pilot sample of student personnel administrators was contacted by phone asking if they would cooperate in this project. Upon giving their consent, they were sent a copy of the instrument with the instructions for completing it. Not only did the administrators in the pilot sample complete the instrument and offer criticism, but a standardized phone interview was developed to test out the best approaches for contacting those who were to be included in the actual sample of

innovators and non-innovators. Each administrator in the pilot sample was interviewed by phone following the completion and return of the instrument.

The instruments and criticisms received from the pilot sample were examined and analyzed. Following some minor revisions and corrections, the final instrument was created. (A copy of the final instrument used to collect the data can be found in Appendix VIII.)

Validity and Reliability of the Instrument.--Since no previously developed instrument was available which would elicit the data necessary for testing the hypotheses, it was therefore impossible to check the construct validity of the instrument. Consequently, the validity of the instrument remains somewhat up to question. Content validity would appear, however, to be rather high since each item included on the instrument received some degree of expert rater concurrence.

Although there was no formal reliability check made on the instrument, there was an attempt to determine reliability as part of the follow-up telephone interview. In the routine follow-up interview, the administrator was asked to verify selected questions. In this way, an attempt was made to check upon the consistency in responding to the items.

Data Collection Procedures.--As was stated earlier, the ideal data collection procedure would have been by means of a personal interview with each chief student personnel administrator. This, however, was not possible. As an alternative, a procedure consisting of a telephone interview and questionnaire was devised. The following data

collection procedure was followed for each innovative and non-innovative college included in the study. First, each chief student personnel administrator was contacted by phone. He was not told the nature or intent of the study, but he was asked if he would be willing to provide some additional data which was not included on the "Adoption of Selected Student Personnel Practices Inventory." After his consent to supply the additional data, he was given verbal instructions for completing the instrument and information indicating that there would be a follow-up telephone interview.

Second, following the introductory telephone conversation, the chief student personnel administrator was sent two copies of the instrument. He was instructed to complete the instruments in duplicate. He was further instructed to send one back to the investigator and to keep one for his file and for the follow-up telephone interview. (See Appendix VIII for copy of instrument, Appendix IX for copy of cover letter, and Appendix X for copy of first reminder letter.)

Third, following the review of the instrument, the follow-up telephone interview was initiated. During the interview, the chief student personnel administrator was asked to provide additional data if further clarification was needed. If there was incomplete data, he was asked to supply information which would provide complete data. If some items appeared to be in error, he was questioned about these. Finally, he was asked to verify certain selected questions in an attempt to determine the reliability of the instrument.

After the follow-up interview and final review of each instrument, the data was subjected to statistical analysis to determine

what significant differences existed between the innovative student personnel programs and the non-innovative student personnel programs.

Statement of Hypotheses

The derivation of the hypotheses as outlined in this section was based upon evidence presented in Chapter I under theoretical assumptions and the review of literature presented in Chapter II.

The major problem of the study was to determine if any significant and identifiable difference exists between colleges with innovative student personnel programs and colleges with non-innovative programs. In order to answer the question posed by the major problem under investigation, the following hypothesis was developed:

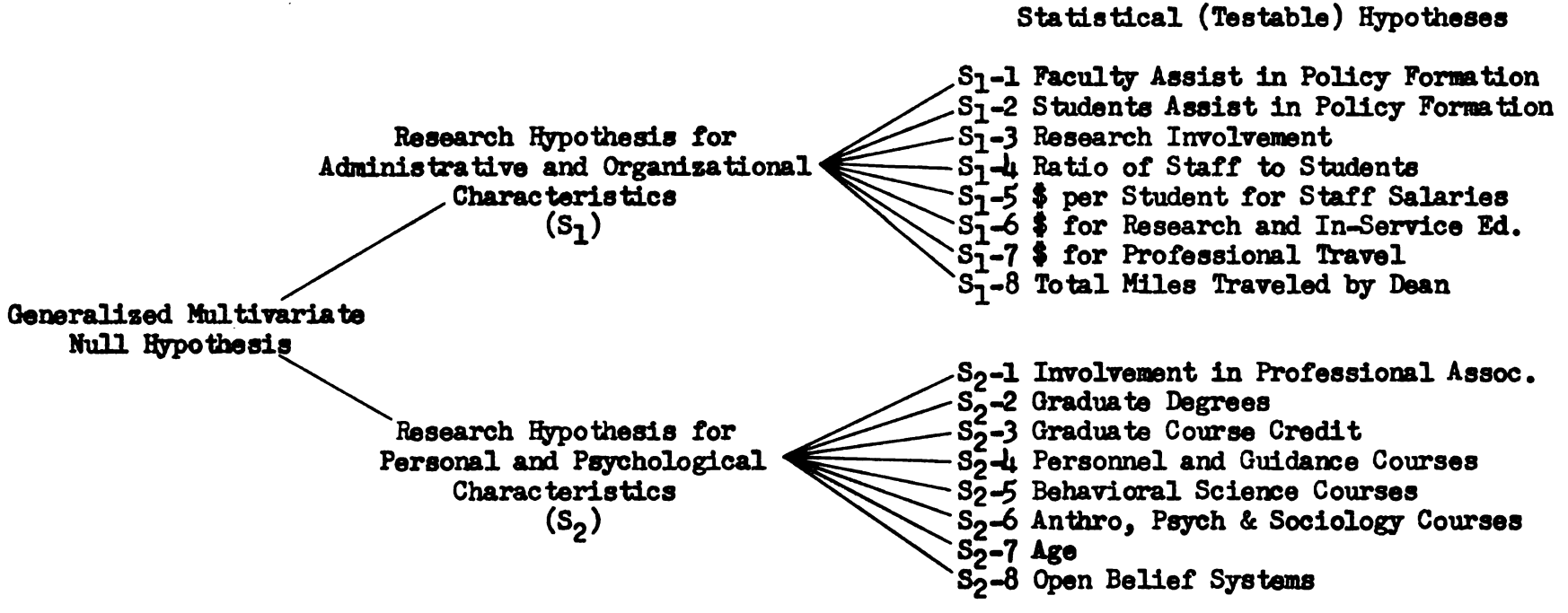
> G. H.: No appreciable difference exists between student personnel programs in colleges with innovative student personnel programs and colleges with non-innovative programs.

In order to test the generalized hypothesis, two research hypotheses were developed which would allow for a systematic means of generating testable hypotheses, hereafter referred to as statistical hypotheses. A schematic diagram showing the relationship of the generalized hypothesis, research hypotheses, and the statistical hypotheses appears in Figure 5.

Administrative and Organizational Research Hypotheses.--The research cited in the latter part of Chapter II would support the assertion that organizational procedures may be influential in allowing some organizations to innovate more freely than others. Although little or no evidence is available indicating how student personnel departments within a college compare to other organizations, there was, however, considerable evidence available which indicated public school

FIGURE 5

SCHEMATIC DIAGRAM SHOWING THE RELATIONSHIP OF GENERALIZED, RESEARCH, AND STATISTICAL HYPOTHESES



and educational organizations can be compared with other types of organizations. Support for the following research hypothesis was drawn from previous studies of business, farming, and medicine which all indicated that the innovativeness of the adopting unit is positively related to such factors as the ease of communication flow into and within the organization. The research hypothesis formulated from the related literature and supporting theoretical assumptions was:

S_1: A positive relationship exists between administrative procedures and the innovativeness of college student personnel programs.

The research hypothesis as stated above encompasses the general importance and direction which administrative procedures play; however, it cannot be subjected to statistical analysis in its present form. It has served, however, as the base for the derivation of statistical hypotheses.

The first two statistical hypotheses are based upon Davis's (1965) research on innovative characteristics in private liberal arts colleges. He found that student personnel programs which were relatively free of faculty influence were more innovative than those which looked to the faculty for direction. The resulting statistical hypothesis was derived:

S_1-1: Colleges with innovative student personnel programs have greater faculty participation in policy formation than colleges with non-innovative programs.

The second statistical hypothesis was also based directly on Davis's (1965) research. He indicated that the college with an innovative program made provisions for students to have a voice in the form of committee membership, on policy and decision-making

committees. Therefore, the statistical hypothesis developed for this evidence was:

S_1-2: Colleges with innovative student personnel programs have greater student participation in policy and decision-making committees than colleges with non-innovative programs.

Rogers (1962, p. 313) indicated the innovators depend upon sources of information which are close to the source of newly developed innovations. Since many innovations are developed from within theoretical assumptions or research, the early adoptors frequently must be knowledgeable of research practices and endeavors, or do much of their own research to determine the efficacy of new practices. It was assumed, therefore, that innovators would have a greater involvement in research activities than non-innovators. Consequently, the following hypothesis was established:

S_1-3: Colleges with innovative student personnel programs participate in and conduct more research than colleges with non-innovative programs.

Some research studies by Mort (1946) and his followers have found that staffing of programs can be linked with the institution's innovativeness. The evidence supplied by Mort for this does not make clear whether this is independent of monetary allotment. In order to provide further evidence regarding the importance of staffing, the following statistical hypothesis was generated:

S_1-4: Colleges with innovative student personnel programs have a greater ratio of full-time equivalent staff per student than colleges with non-innovative programs.

Considerable evidence has been supplied by nearly all diffusion research traditions indicating that innovativeness is related to monetary expenditure of the adopting unit. Mort in his studies of

public school administration has probably supplied more evidence to support this assumption than any other researchers.[1] From this evidence as well as other evidence supplied in Chapters I and II, a number of statistical hypotheses were generated which would test the effects of monetary expenditures as it effects innovativeness. The first statistical hypothesis related to monetary expenditure was as follows:

S_1-5: Colleges with innovative student personnel programs have a greater monetary allotment per student for salaries of student personnel workers than colleges with non-innovative programs.

Many researchers and student personnel workers have continually emphasized the importance of in-service training research involvement. Truitt and Gross' (1966) monograph presents theoretical assumptions that suggest student personnel staffs should budget both time and money for in-service educations. Rural sociology has given documentation supporting the research orientation as a variable related to innovativeness. Developed from these theoretical assumptions and research evidence was the following statistical hypothesis:

S_1-6: Colleges with innovative student personnel programs have a greater monetary allotment per student for research and in-service education than do colleges with non-innovative programs.

Rural sociologists have provided a rather large quantity of literature as well as theoretical assumptions which would indicate that travel or cosmopoliteness and innovativeness are positively related. They have also supplied numerous research studies supporting these assumptions. Therefore, the following hypothesis was formulated:

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[1] Carlson (1965a, p. 9), however, disagrees with Mort's findings.

S_1-7: Colleges with innovative student personnel programs have a greater monetary allotment per student for travel for professional involvement than colleges with non-innovative programs.

The previously stated hypothesis and the body of research supporting it also served as the theoretical bases for the derivation of the eighth statistical hypothesis. However, it was based upon actual cosmopoliteness of the individual rather than upon budgetary allocations. To test this hypothesis statistically, the following testable hypothesis was developed:

S_1-8: Chief student personnel administrators from innovative colleges travel more miles per year than administrators from non-innovative colleges.

Personal and Psychological Research Hypotheses.--Much of the diffusion literature and research in the past concentrated upon the individual and his personal characteristics. Much of this research energy has been devoted to adopter units where the individual can make an independent decision, e.g., farmers and physicians. Within the framework of this study and the review of literature as presented in Chapter II, it would be inconceivable to assume that the student personnel administrator can make independent decisions as does the farmer or physician. The decisionary process of the student personnel administrator must operate within the limits of the organization. However, as was pointed out in Chapter II, he serves either as the gatekeeper in the decision process or as an authority making forced decisions. He, therefore, has some control regarding the adoption process. For these reasons, a second research hypothesis was developed as follows:

S_2: A positive relationship exists between the personal and psychological characteristics of the chief student personnel administrator and the innovativeness of the student personnel program.

In order to test this research hypothesis, six statistical hypotheses were explicitly developed to measure the direction and extent of the chief student personnel administrator's professional interest and past professional background.

Diffusion researchers in both medicine and education have supplied some evidence in the form of empirical data which indicates that a commitment to professional growth and innovativeness is positively related. From the evidence supplied by these research traditions, the following statistical hypothesis was developed in an attempt to determine if the student personnel administrator's membership and involvement in professional organizations was positively related to innovativeness:

S_2-1: Chief student personnel administrators from innovative colleges belong to and participate in more professional student personnel organizations than do administrators from non-innovative colleges.

Some supportive research as outlined earlier in Chapter I indicated that education is positively related to innovativeness. There was, however, little evidence which indicated that particular disciplines were more or less related to innovativeness. For the most part, the research evidence available only revealed a positive relationship between years of formal education and innovativeness. Since there was no research evidence dealing directly with student personnel administrators, four statistical hypotheses were developed to explore these variables:

S_2-2: Chief student personnel administrators from innovative colleges hold more advanced degrees beyond the bachelors degree than administrators from non-innovative colleges.

S_2-3: Chief student personnel administrators from innovative colleges have taken more advanced graduate credit hours beyond the bachelors degree than administrators from non-innovative colleges.

S_2-4: Chief student personnel administrators from innovative colleges have taken more graduate credit hours in student personnel and guidance courses than administrators in non-innovative colleges.

S_2-5: Chief student personnel administrators from innovative colleges have taken more graduate credit hours in the behavioral sciences than administrators from non-innovative colleges.

S_2-6: Chief student personnel administrators in innovative colleges have taken more graduate credit hours in anthropology, psychology, and sociology than administrators from non-innovative colleges.

Two statistical hypotheses were developed to test the personal and psychological variables. In the review of the literature, there was no clear cut evidence to support the theoretical assumptions that age is inversely related to innovativeness. Although the evidence was not clear, a large enough body of literature existed which indicated there is a possible relationship between age and innovativeness. Consequently, the following hypothesis was generated:

S_2-7: Chief student personnel administrators in innovative colleges are younger in age than administrators in non-innovative colleges.

Similar conflicting evidence existed in the literature regarding the relationship between open-mindedness to new ideas, practices, materials and innovativeness. Since the evidence existed to support the assumption that there was a relationship between open-mindedness and innovations but was inconclusive, a hypothesis was formulated. The justification for the derived hypothesis was to

provide further evidence of the existence or non-existence of any relationship between these two variables. The hypothesis which developed was:

S_2-8: Chief student personnel administrators from innovative colleges have a more open belief system than administrators from non-innovative colleges.

The Statistical Model and Computational Procedures

Because the main problem of the study was to identify those characteristics which differentiate an innovative student personnel program from a non-innovative program, a statistical model would need to be used which would discriminate between the two groups of colleges to the greatest degree possible. As previously reported, data was gathered on two mutually exclusive groups, namely, innovators and non-innovators consisting of twelve members in each group. Since many of the variables to be tested in the study were interrelated, it was necessary to incorporate a statistical methodology which would: 1) identify basic independent factors which accounted for possible group differences, 2) identify the combination of variables which would discriminate maximally between the groups, and 3) identify the intensity and direction of the differences between the groups.

Rulon, et al., (1967) in their book, Multivariate Statistics for Personnel Classification, discussed at length factor analysis, discriminant analysis and regression analysis as three possibilities for classification of individuals into groups. When taking into account their discussion in relation to the stated problem of this study, multiple discriminant analysis appeared to be the appropriate statistical model.

Frances E. Dunn (1959) established two procedures for classification and prediction. In her research report, she discussed the validity of multiple discriminant analysis and multiple regression analysis. She found multiple discriminant analysis to be the appropriate statistical tool. Her findings were also concurrent with findings discussed by McNemar (1962, p. 184-87) and Cooley and Lohnes (1962). It was felt, therefore, that multiple discriminant analysis would be the most powerful statistical model for this study.

Description of Multiple Discriminant Analysis.--Multiple discriminant analysis is a statistical procedure of combining test scores or other data so as to maximize the differences between the groups and minimize the differences within each group. Through the separation of individuals who are known to belong to mutually exclusive groups, it is possible to determine the combination of variables which will discriminate to the greatest degree possible between the different groups (Cutting, 1966, p. 29).

Cooley and Lohnes (1962) gave the following description:

> Discriminant analysis is a procedure for estimating the position of an individual on a line that best separates classes or groups. The estimated position is obtained as a linear function of the individual's "m" test scores. Since one "best" line may not exhaust the predictive power of the test battery in distinguishing among the classes, additional discriminant functions, all mutually orthogonal, may be fitted. The maximum number of discriminants is indicated by the lesser of the two numbers, g-1 and "m".

Computations required for obtaining discriminant functions are extremely involved and numerous. It was not until the advent of computer programs written for this particular statistical model that multiple discriminant analysis received much attention or use in

applied research studies.[1] Recently a number of writers have developed in detail the theory and computational procedures for this statistical model. This writer, therefore, will not go into detail regarding the computational procedure, but refers the reader to work done by Tiedeman, Bryon and Rulon (1951a), Cooley and Lohnes (1962), Cramer and Block (1966), and Rulon, et al. (1967).

Cooley and Lohnes (1962) in their book, Multivariate Procedures for the Behavioral Sciences, and Ikenberry (1960) in his doctoral dissertation presented lucid descriptions of computational procedures for multiple discriminant analysis. The original formula for solving the determinal function as described by Cooley and Lohnes and Ikenberry was derived from the procedures provided by Bryan in his doctoral dissertation. These early procedures were originally reported by Tiedeman, Bryan and Rulon (1951b). The basic formula used for solving the determinal equation is $|W^{-1}A-\lambda|= 0$.

Assumptions of the Statistical Model.--In the use of multiple discriminant analysis, the assumption is made that the test scores of the population being studied produce equal variance and co-variance matrices, and it is a multivariate normal population. In a review of the literature, nothing was found which would indicate the availability of a procedure to test this assumption. Ikenberry (1960) corresponded with Tiedeman in an attempt to determine if a method of testing this assumption was available. Ikenberry received a negative reply. Due to the inavailability of appropriate tests, it was, therefore,

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[1]Programed by Dr. P. Lohnes, University of Buffalo; modified for the Control Data Computer 3600 by Stuart Thomas or the Computer Institute for Social Science Research, Michigan State University, August, 1967.

necessary for the purposes of this study to assume multivariate normal distribution and equality of variance-covariance matrices.

Level of Statistical Significance.--Multiple discriminant analysis as programed for the Michigan State University computer yielded data indicating means and standard deviations. The program also provided correlation coefficients, the latent root value of the discriminant functions and Rao's chi square test all of which could be tested against levels of statistical significance. For the purposes of this study, any result which was within the 95 percent confidence limits was considered in excess of chance expectation and consequently tenable. In essence from any of the statistical analysis, the inference was that a population mean falling within the established confidence level has the probability of being correct 95 out of 100 times, or that the results obtained may occur by chance only five (.05) times out of 100. The .05 level of significance was arbitrarily chosen as the most appropriate level when considering the purpose of the study in relation to Type I and Type II statistical errors.

Summary

Prior to the identification of innovative and non-innovative colleges which would provide mutually exclusive sample populations to be analyzed for significant differences, it was necessary to develop an instrument which would systematically measure the relative innovativeness of an institution. The instrument, "Adoption of Selected Student Personnel Practices Inventory," was created in order to measure relative innovativeness. The validity of the instrument was checked against a pilot sample of ten experts. A split-half

reliability check resulted in a correlation coefficient of +.83. The normality of the population was subjected to analysis and the frequency distribution approached normality with the exception of being slightly skewed in a positive direction and slightly lepotokurtic.

The sample population of twelve innovative and twelve non-innovative colleges was drawn from a total population of 245 private coeducational liberal arts colleges in the midwestern states with student population of less than 5,000. Based upon the score which the institution received on the "Adoption of Selected Student Personnel Practices Inventory," the twenty-four colleges meeting the selection criteria and at the extremes of the scoring continuum were chosen for inclusion in the mutually exclusive groups to be studied. These two groups represented approximately 6% of the total population sampled.

A second instrument was developed which would elicit from the colleges to be studied, the data necessary for the testing of the hypotheses. The instrument along with telephone interviews provided the data upon which the hypotheses were tested.

For the purposes of this study, one generalized, multivariate, null hypothesis was established. Sixteen related statistical hypotheses were established for the purposes of testing the generalized multivariate hypotheses.

The statistical model chosen for testing the hypotheses was multiple discriminant analysis. The ability of this model to maximize

the differences between the groups and minimize the differences within the groups was the basis for choosing this model over other statistical models.

CHAPTER IV

ANALYSIS OF DATA

The statistical technique, multiple discriminant analysis, as programed for Michigan State University's Control Data Computer 3600, included output data which was both directly and indirectly related to the major problem under investigation. The output data which was indirectly related to the major problem, however, yielded information which may provide further assistance in understanding the problem studied. As a matter of record, a simple combined groups correlation matrix is presented in the Appendix (See Appendix XI). The correlation matrix presented in the Appendix indicates the relationship of each of the sixteen variables to all variables. A criterion variable, i.e., innovative characteristics, is also contained in the correlation matrix. A correlation coefficient of .515 is significantly different from zero at the 1% level of confidence, and a coefficient of .404 is significant at the 5% level of confidence (Edwards, 1960, formula, p. 301-3; table of significant values, p. 502).

Prior to the presentation of the analyzed hypotheses by the statistical technique, multiple discriminant analysis, it may be helpful to examine briefly the means and standard deviations. The means and standard deviations for each of the sixteen variables are presented in Table 4-1. From a visual examination of the means and

TABLE 4-1

INNOVATIVE, NON-INNOVATIVE, AND COMBINED GROUP MEANS AND STANDARD DEVIATIONS FOR ALL STATISTICAL HYPOTHESES

	Variable/Hypothesis	Innovative Group X	Innovative Group SD	Non-Innovative Group X	Non-Innovative Group SD	Combined X	Combined SD
S_1-1	Faculty Assist in Policy Formation	5.6	5.0	4.8	5.3	5.3	1.6
S_1-2	Students Assist in Policy Formation	11.1	24.1	9.5	20.8	10.3	6.7
S_1-3	Research Involvement	2.8	14.8	0.7	3.0	1.7	3.3
S_1-4	Ratio of Staff to Students	121.5	208.2	202.2	349.0	161.8	94.2
S_1-5	$ per Student for Staff Salaries	65.8	115.7	33.2	57.1	49.5	31.6
S_1-6	$ for Research and In-Service Ed.	525.0	1619.4	16.7	19.1	270.8	427.8
S_1-7	$ for Professional Travel	1371.2	2190.2	677.1	3716.1	1024.2	966.8
S_1-8	Total Miles Traveled by Dean	2269.2	3071.1	1290.4	4459.5	1779.8	1234.8
S_2-1	Involvement in Professional Assoc.	11.3	18.7	10.3	29.0	10.8	7.2
S_2-2	Graduate Degrees	5.3	4.5	3.6	5.2	4.4	1.7
S_2-3	Graduate Course Credit	106.0	141.2	84.9	165.9	95.5	46.7
S_2-4	Personnel and Guidance Courses	9.9	19.3	5.2	16.9	7.5	5.9
S_2-5	Behavioral Science Courses	24.5	38.2	17.6	42.9	21.0	12.5
S_2-6	Anthro, Psych & Sociology Courses	9.8	26.5	9.0	27.0	9.4	7.9
S_2-7	Age	38.4	46.5	46.6	28.4	42.5	11.4
S_2-8	Open Belief Systems	65.9	19.9	71.2	26.5	68.5	7.4

standard deviations, large differences immediately become apparent. The large differences, however, between means and standard deviations should be interpreted cautiously due to the type of data collected, e.g., the sample population was asked to indicate the number of research projects in which they participated or initiated. The number of research projects, therefore, is rather small when compared to the number of miles traveled. Later in this chapter further discussion of the significant difference between the means will be presented.

The Test of the General Hypothesis

In order to answer the primary problem of this study, the general hypothesis was generated in the null form. It was the encompassing hypothesis established for this study and the basis from which all research hypotheses and statistical hypotheses were derived. The general hypothesis stated the following:

G. H.: No appreciable difference exists between student personnel programs in colleges with innovative student personnel programs and colleges with non-innovative programs.

In order to test the generalized, multivariate, null hypothesis which states that the two groups had similar characteristics and programs, it was essential that a statistical model be used which would maximize the between-groups differences while minimizing the within-groups differences. As was indicated in Chapter III, the statistical model which gave evidence of being the most powerful tool for the purposes of this study was multiple discriminant analysis. The solution of the determinal equation $|W^{-1}A - \lambda| = 0$, as well as correlation matrices, means, and standard deviations, was part of the output data provided by the C. D. C. 3600 at Michigan State University.

By the use of chi square values, Rao (1952, p. 372-73) has been able to establish a test of statistical significance of the latent roots, or discriminant functions. By the use of the test established by Rao, it was possible to test for the multivariate discrimination among several groups. The following equation was used for testing the statistical difference among groups:

$$X^2 = \left[N - \tfrac{1}{2}(p + k)\right] \log (1 + \lambda)$$

N = the total sample of 24 individuals
p = the total number of 16 variables
k = the total number of 2 groups
λ = the latent root of the discriminant function

The formula yields a chi square value for each root. The number of roots yielded is the lesser of the two numbers g-1 and the number of variables. Since there were only two groups in this study, the formula, g-1, provided only one root value. The significance level obtained for the latent root is reported in Table 4-2. The chi square value and the degrees of freedom also appear in the table.

TABLE 4-2

LATENT ROOT VALUE, CHI SQUARE VALUE,
DEGREES OF FREEDOM AND PROBABILITY STATEMENT
FOR THE DISCRIMINANT FUNCTION

Discriminant Function	λ	X^2	DF	P
V_1	7.812	33.731	16	$<.01$

32.1 $<.01$

The evidence, as shown in Table 4-2, indicates that the discriminant function which tests the multivariate discrimination among the innovators and the non-innovators was significant beyond the .01

level of confidence. Also the solution of the determinal equation produced a Wilks lambda equal to 7.81279 which is over seven times larger than the expected chance ratio of zero.

By using the latent root as an estimate of the total variance of dispersion among the groups, the percentage of variance accounted for by each root can be computed (Rao, p. 372). The extent to which the latent root (λ) accounted for the total dispersion appears in Table 4-3. It can be seen that the variables accounted for by the latent root (λ) approximated the total variance.

TABLE 4-3

DISCRIMINANT FUNCTION, PROBABILITY STATEMENT, LATENT ROOT VALUE AND PERCENT OF TRACE FOR THE DISCRIMINANT FUNCTION

Discriminant Function	Level of Significance	λ Latent Root Value	Percentage of Trace
V_1	.01	7.812	.9999

Further evidence indicating the extent of separation of the groups in the discriminant space was derived from an examination of the institution's estimated position on a linear axis. The determination of each institution's position on the linear axis is based upon a scaled vector or weight assigned to each of the sixteen variables. The weight given to each variable is shown in Table 4-4 in rank order according to the weight the variable received.

The estimated position upon which an institution falls on the linear axis is determined by multiplying the weight assigned to each variable by the corresponding score which the institution received

for that given variable. The sum of the multiplied variables gives the estimated position for that institution within the discriminant space. The numerical value (score) estimating the position on the linear axis within the discriminant space for each of the twenty-four institutions is presented in Table 4-5.

TABLE 4-4

RANK ORDER OF VARIABLES ACCORDING TO VECTOR WEIGHTS

Variable/Hypothesis	Vector Weights
S_2-2 Graduate Degrees	.5437
S_1-3 Research Involvement	.4773
S_1-1 Faculty Assist in Policy Formation	-.4140
S_2-5 Behavioral Science Courses	-.3797
S_2-6 Anthro, Psych & Sociology Courses	.2807
S_2-1 Involvement in Professional Associations	.2407
S_2-8 Open Belief Systems	.1208
S_2-7 Age	.0726
S_2-4 Personnel and Guidance Courses	-.0611
S_1-2 Students Assist in Policy Formation	.0209
S_1-4 Ratio of Staff to Students	.0046
S_1-5 $ per Student for Staff Salaries	-.0033
S_1-8 Total Miles Traveled by Dean	-.0019
S_1-6 $ for Research and In-Service Education	-.0018
S_1-7 $ for Professional Travel	.00116
S_2-3 Graduate Course Credit	-.00114

As can be seen from an examination of the numerical value (score) representing the institution's position on the linear axis, there was complete separation of the groups. (Horizontal line in Table 4-5 represents the line of separation.)

The analysis of data revealed that there was complete separation among the groups in excess of the pre-established level of statistical confidence as can readily be seen when examining the information presented in Tables 4-2 and 4-5. From the evidence

available, therefore, the generalized, multivariate, null hypothesis was rejected and regarded as untenable.

TABLE 4-5

RANK ORDER BY VECTOR WEIGHTS
FOR INNOVATIVE AND NON-INNOVATIVE INSTITUTIONS

Code Number*	Raw Score on Instrument	Score
107	75.76	-.2017
104	78.78	1.1654
105	77.94	2.3457
103	81.82	2.8646
101	86.36	3.1768
106	77.27	3.2952
109	72.06	3.6910
111	75.00	3.7271
110	73.53	3.9623
108	74.14	4.7769
112	79.41	5.0506
102	84.85	5.7447
204	30.88	6.5417
203	29.41	7.4717
210	38.24	7.6089
202	29.41	7.8160
212	28.13	8.0859
208	34.38	8.4386
201	12.12	8.4690
211	35.29	8.7716
206	33.82	8.9248
205	32.35	9.4258
209	35.94	9.5185
207	34.38	10.8241

*Since complete anonymity was promised during the data collection period, the colleges have been assigned code numbers.

Determination of the Most Potent Variables

In an attempt to determine the extent to which each variable contributed to the total identification of the variance, two basic options appeared available. Cooley and Lohnes (1962, p. 119)

suggested that vector weights may give some indication of the relative contribution of each variable. The weights assigned to the variables, however, do not provide any indication regarding the percent or level of significance which each variable contributes to the total variance. The first of the alternatives, therefore, was to choose those variables receiving high vector weights. These selected variables then could be analyzed using the multiple discriminant analysis technique in an effort to determine the effectiveness or potency of the selected variables for the purpose of identifying the differences between the innovative and non-innovative student personnel programs.

The second alternative for determining the potency of the variables represents a more traditional approach, i.e., establish a univariate F ratio for each variable. This procedure consists of examining each individual variable in isolation from its dependence upon other variables. The limitations to this approach, however, appear rather evident especially in view of the following statement:

> One of the main problems with which the investigator of data becomes interested is that of deciding whether the means of the groups for each of the variables are significantly different. The well-known variance analysis test provides an answer to this question. Such tests may indicate that some variables show significant differences while others do not. However, since the variables are likely to be highly correlated, they cannot be treated as independent. It may well be that only a small number of the variables with significant differences in means are contributing to discrimination among the groups while other variables which by themselves provide no means of discrimination may aid considerably when taken in conjunction with the rest. It is only by study of the entire constellation of points that we can recognize which variables are useless and which provide real evidence concerning group separation (Tiedeman, 1951, p. 74).

Although Cooley and Lohnes (1962, p. 121) suggest that univariate F ratios be established, they also indicate that there may be

limited agreement between the results of the univariate F ratios and the actual contribution of each variable to the identification of the variance when the multiple discriminant technique is employed. Although the univariate statistical techniques have represented traditionally the most popular procedure for determining the relative contribution of a number of variables under consideration, it was decided for the purposes of this study that the multiple discriminant analysis technique represented the most sound statistical procedure to follow. In keeping with tradition, however, the sixteen variables comprising the generalized multivariate null hypothesis were stated in directional hypothesis form and subjected to univariate F tests. The sixteen univariate F tests which indicate the significance of group differences for individual variables are summarized in the Appendix (See Appendix XII). Five of the sixteen hypotheses tested by univariate F ratios were found to exceed the pre-established .05 level of confidence.

Test of Potent Variables.--Since the relative contribution of the variables may be dependent upon other variables, it was decided that those variables having the highest vector weights would be selected for additional analysis. By repeating the multiple discriminant analysis technique on only a reduced number of variables, the results would yield an indication of the variables or combination of variables most effective in identifying the differences between colleges with innovative and non-innovative student personnel programs.

From an examination of the vector weights assigned to each of the sixteen variables (See Table 4-4), it became apparent that seven variables represented most of the assigned weight, and the remaining

nine variables collectively represented negligible assigned weight. Seven variables representing the largest vector weight were used to determine the effectiveness of identifying group differences. These were: 1) number of graduate degrees, 2) research involvement, 3) faculty assistance in policy formation, 4) number of behavioral science courses, 5) number of courses specifically in anthropology, psychology, and sociology, 6) involvement in professional associations, and 7) open belief system of the chief student personnel administrator.

In order to test the relative efficacy of these seven variables as potential discriminators between the innovative and non-innovative groups, the variables were tested in the same manner as reported earlier for the original sixteen variables. The significance level obtained for the latent root value based upon seven variables is reported in Table 4-6. The chi square value according to procedures established by Rao (1952, p. 372-3) and the degrees of freedom also appear in the table.

TABLE 4-6

LATENT ROOT VALUE, CHI SQUARE VALUE, DEGREES OF FREEDOM AND PROBABILITY STATEMENT OF THE DISCRIMINANT FUNCTION BASED UPON SEVEN VARIABLES

Discriminant Function	λ	χ^2	DF	P
V_1	8.722	12.543	7	$<.10$

14.07 $<.05$ 12.017 $<.10$

The evidence, as presented in Table 4-6, indicates that the discriminant function, which tests the multivariate discrimination

among the innovators and non-innovators based upon seven variables, was less than the pre-established .05 level of significance. Although the .05 level of confidence was not reached based upon Rao's chi square technique, the solution of the determinal equation produced, however, a Wilks lambda equal to 8.722 which is over eight times larger than the chance ratio of zero.

An additional attempt was made to determine what effect the variables had in identifying the majority of the variance. The ten variables with the largest vector weights were analyzed. (See Table 4-4 for rank order of weighted variables.) The results of the discriminant function based upon ten variables which test for the multivariate discrimination among the innovators and non-innovators is presented in Table 4-7.

TABLE 4-7

LATENT ROOT VALUE, CHI SQUARE VALUE, DEGREES OF FREEDOM AND PROBABILITY STATEMENT OF THE DISCRIMINANT FUNCTION BASED UPON TEN VARIABLES

Discriminant Function	λ	x^2	DF	P
V_1	1.293	15.351	10	<.20

18.3 <.05 10 df = 15.9 <.10 13.4 <.20

The analysis of data, which can readily be seen when examining Table 4-7, indicated that based upon Rao's chi square test of the discriminant function, the results failed to reach the pre-established .05 level of significance. The solution of the determinal equation

based upon Wilks lambda was 1.29 which is 1.3 times larger than the chance ratio of zero.

Conclusions and Summary

Conclusions.--The computed results from the multivariate discriminant analysis of sixteen variables clearly indicated, based upon Rao's test of significance, that the separation of the groups was significant at the .01 level. The chance of producing group differences this large or larger by drawing two random sample groups from a sixteen multivariate space is less than one in one hundred. As was indicated earlier, the generalized, multivariate, null hypothesis was considered untenable. Innovative colleges did differ from non-innovative colleges when the sixteen variables were considered collectively.

On the basis of the data analyzed, when considering the generalized, multivariate, null hypothesis as being untenable, support was given for the theory that there are identifiable differences between colleges with innovative student personnel programs and colleges with non-innovative student personnel programs.

One of the secondary problems under investigation in this study was an attempt to identify those characteristics which were most potent and consequently contributed most to the identification of the variance between the groups. Although the well known univariate tests seem to indicate significant differences which could be identified between specific variables of the groups, the researcher is normally forced to pick out and interpret the largest F ratios, t's, or correlation coefficient, and often does so from a large number of non-independent

statistics. The probability of the first kind of error increases, therefore, far beyond their nominal values (Cramer and Darrel, 1966, p. 605). Multivariate analysis, however, provided a statistical model and procedure for dealing separately with each variable in estimation, while at the same time providing tests of hypotheses which lead to a single probability statement referring to all variables jointly.

The univariate test provided information regarding the acceptance or rejection of the individual statistical hypotheses (See Appendix XII). The overriding superiority of the statistical technique of multiple discriminant analysis, which accounts for the relationship and interdependency of variables, was used as the final criterion for accepting or rejecting the variables contributing most to the identification of the variance.

Two attempts were made to determine if the major source of contribution to the variance could be identified using less than sixteen variables. The seven highest weighted vectors were arbitrarily chosen to test the discriminating power of a limited number of variables. The discriminant function obtained from testing the seven highest weighted variables was less than the pre-established .05 level of confidence. A second attempt was made using the multiple discriminant analysis technique. This attempt was based upon the ten highest weighted variables in order to determine the relative potency of variables to discriminate between the innovative and non-innovative colleges. The resulting discriminant function and chi square test again did not reach the .05 level of significance.

In attempting to provide an answer for one of the problems outlined in this study, i.e., what characteristics or variables are more potent in identifying innovative and non-innovative student personnel programs, the evidence from the analysis of data gave no clear indication. It was interesting to note that when using sixteen variables, the variables collectively differentiated between the innovative and non-innovative programs; however, when using less than the full sixteen variables, there was a significant loss in discriminatory power.

Based upon multiple discriminant analysis which deals separately with each variable in estimation while at the same time producing a probability statement referring to all variables jointly, ten variables were not sufficiently effective to produce significant differences between groups. When testing each variable in isolation and as an independent variable, univariate F analysis, however, revealed five variables to be significant at the .05 level or above. The apparent discrepancy of the two statistical tests would lead to the conclusion that there was a very high degree of interrelatedness among all the variables.

Summary.--In summary the overall generalized, multivariate, null hypothesis was regarded as untenable and rejected on the basis of data analysis. Consequently, there was some supportive evidence for the theory that there are identifiable differences between colleges with innovative student personnel programs and colleges with non-innovative student personnel programs.

In an attempt to provide an answer for the problem of what variables are most potent in identifying the differences between innovative and non-innovative programs, there was no clear evidence provided from the analysis of data.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

In this chapter, a general summary will be presented first which includes the problem under investigation, theory, methodology and major findings. Based upon the major findings, some conclusions will be presented. Implications for further research and educational practice will follow the conclusions.

Summary

In recent years, considerable pressure has been exerted upon colleges to provide an education for a maximum number of individuals, while at the same time minimizing those aspects of the college environment which may interfere with the students' optimal progress. While society has been pressuring colleges to be more effective, social scientists, behavioral scientists, and student personnel workers have been developing new theories and practices which are intended to reduce the abrasive aspects of higher education and create an environment conducive to increasing the students' academic productivity.

Although many new practices and theories have been introduced which facilitate the students' academic progress both inside and outside the classroom and laboratory, little has been known about how these practices were communicated, or what distinguished institutions which readily adopt new student personnel practices from colleges which are relatively slow in up-dating their programs.

This research project was conducted, therefore, to examine one part of student personnel work, that of isolating specific variables which were effective in identifying colleges with innovative student personnel programs. The major problem under investigation also generated three secondary problems which required examination. First, which of the characteristics under investigation provided the greatest potency in identifying innovative student personnel programs? Second, what relationships, if any, exist between the 1) organizational and administrative structure and innovativeness and 2) the personal and psychological characteristics of the chief student personnel administrators and innovativeness? Finally, could innovative and non-innovative student personnel programs be identified based upon measurement devices?

To provide a theoretical base for the study, it was found that an interdisciplinary collation of findings from diffusion and communication research represented the most fertile base upon which to draw supportive evidence. Ample research was found which strongly supported the theory that the adoption of a new idea consists of a new concept or product which is communicated through certain channels among members of a social system over a given period of time. Moreover, empirical evidence indicated that the adoption process is a continuous process and can be graphically represented by an "S" curve. The adoption process, therefore, can also be represented as a normal distribution.

The theory and evidence indicated that the normality of adopter distributions served as the theoretical support for identifying

the population sample of a mutually exclusive group of innovators and non-innovators.

Katz (1957) developed a theory of communication which identified the process whereby a new idea or concept is passed from social system to social system. He contended that new ideas or messages are mediated by a reference group before the total social system becomes aware of the new idea or message. The collation of Katz's "two-step flow" theory with Gallaher's (1965) and Spindler's (1963) theory that the administrator plays a mediating function or a "middle-man" role in allowing new ideas to infiltrate the system, as well as creating change and inhibiting change, produced one of the basic theories for this study. The chief student personnel administrator, the resultant theory suggests, plays a key role in determining the propensity for innovativeness in his college's student personnel program due to his "middle-man" role and ability to facilitate or inhibit change by his legitimized authority role.

Theoretical support for the identification of variables related to innovativeness was derived from a review of the empirical findings on file at the Diffusion Document Center (Rogers and Stanfield, 1966). A review of the findings on file indicated the following variables have contributed to the identification of variance related to innovativeness: amount of education, relative age, knowledgeability of professional developments, positive attitude toward change, empathy, mental rigidity, cosmopoliteness, mass media exposure, contact with change agents, faculty involvement in policy making, ratio of staff, monetary expenditure, and research involvement. The variables just

outlined served as the theoretical assumptions for the generation of hypotheses.

Because this study represented an initial exploration into the relationship of student personnel administration as related to innovativeness, the major hypothesis to be tested was established as a generalized, multivariate null hypothesis. The generalized null hypothesis consisted of sixteen related statistical hypotheses. The first eight statistical hypotheses were categorized as administrative and organizational hypotheses. The remaining eight statistical hypotheses were categorized as personal and psychological hypotheses.

It was necessary to develop an instrument which would enable a systematic method of providing mutually exclusive sample populations representing innovative and non-innovative student personnel programs. Studies done by other researchers (Rogers and Rogers, 1961, p. 336) have indicated that adoption scales for measuring the relative innovativeness can be constructed. Moreover, the research indicated that these scales have a reasonable degree of validity and reliability. The "Adoption of Selected Student Personnel Practices Inventory" which was especially developed for this study was found to have a split-half reliability coefficient of +.83. An analysis of the returns from a population sample of 245 colleges revealed that the frequency distribution approached normality. The mean, median, and mode all fell within 1.9 points of each other with a corresponding standard deviation of 14.4. The frequency distribution, however, was slightly skewed in a positive direction and slightly lepotokurtic.

Twelve colleges with innovative student personnel programs and twelve with non-innovative programs were drawn from a sample

population of 245 private coeducational, liberal arts colleges, with student enrollments of 5,000 or less, located in the midwestern states. The twenty-four innovative and non-innovative colleges chosen were based upon the score which each institution received on the "Adoption of Selected Student Personnel Practices Inventory." These colleges represented the extremes of the scoring continuum.

A second instrument was developed which would elicit from the mutually exclusive colleges the data necessary for testing the generalized, multivariate null hypothesis, and the sixteen related statistical hypotheses. The instrument, which was developed by the writer in consultation with ten experts, was tested on a pilot sample before the instrument was sent to the twelve innovative and twelve non-innovative colleges. When the instrument, which provided data for testing the hypotheses, was returned, each student personnel administrator included in the mutually exclusive groups studied was interviewed by telephone. The interview provided further verification and validation of the data contained within the instrument.

The statistical model chosen for testing the hypotheses was multiple discriminant analysis of variance. The ability of this technique to maximize the differences between the groups and minimize the differences within the groups made it the most promising approach of those investigated for use with the hypotheses and data.

The statistical analysis of the data revealed that the overall generalized multivariate null hypothesis was rejected at the .01 level of confidence. The rejection of the null hypothesis indicated tentative support, therefore, to the theory that there were identifiable

differences between innovative and non-innovative college student personnel programs.

Although each of the sixteen statistical hypotheses was subjected to univariate F ratios, the statistical results were considered tenuous due to the large number of variables under consideration and the high degree of inter-correlation found among the variables. For the purposes of this study, the superiority of multiple discriminant analysis as a statistical technique, which accounts for the relationship and interdependency of variables, was used as the final criterion for accepting or rejecting the variables contributing most to the identification of the variance.

To test further the assumption that variables with high vector weights contribute greatly to the identification of the variance, the seven highest weighted variables were chosen for additional analysis in an attempt to determine their relative potency in identifying the differences between the innovative and non-innovative college student personnel programs. The seven variables failed to significantly discriminate between the groups at the pre-established .05 level of confidence.

A second attempt to determine if less than sixteen variables could adequately discriminate differences between innovators and non-innovators was made. This attempt to determine potency of variables was based upon ten variables receiving the highest vector weights. The ten variables chosen for this analysis and tested by multiple discriminant analysis also yielded results which did not meet the pre-established level of confidence. Since it was impossible to identify statistically the extent the variables contributed to the

variance, it was, therefore, impossible to provide any definite solution for the problem of what variables are most potent in identifying the innovative and the non-innovative student personnel programs. It was also impossible to derive any clear evidence indicating the effect administrative, organizational, and/or personal-psychological characteristics had in relation to innovativeness.

Conclusions

Based upon an analysis of the data collected to test the hypotheses and problems of this study, the following represent the major conclusions:

> The primary problem under investigation was that of isolating and identifying specific variables which differentiate colleges with innovative student personnel programs from colleges with non-innovative programs. The analysis of data provided clear evidence for the rejection of the generalized multivariate null hypothesis that innovative and non-innovative college student personnel programs have similar characteristics. The rejection of the null hypothesis lends tentative support to the theory that there are identifiable characteristics which separate innovative programs from non-innovative programs.
>
> One of the secondary problems under investigation was what characteristics or variables were more potent in identifying innovative student personnel programs than other characteristics. The analysis of data yielded inconclusive evidence indicating that one characteristic or combination of characteristics had more or less potency or ability to identify the significant differences existing between innovative and non-innovative student personnel programs.
>
> Another secondary problem under investigation was what relationship existed between administrative-organizational characteristics and innovativeness, and what relationship existed between personal-psychological characteristics of the chief student personnel administrator and innovativeness. It was impossible to make any statistical differences regarding which of the variables under investigation was contributing extensively to the identification of the differences between innovative and non-innovative colleges. Furthermore, it was impossible to draw any conclusions indicating the relative importance which administrative-organizational and personal-psychological variables play in identifying innovativeness.

> The final secondary problem under investigation was to what extent can measurement devices systematically rate the relative innovativeness of college student personnel programs. An analysis of the normative data derived from the "Adoption of Selected Student Personnel Practices Inventory" indicated that measurement devices were effective in measuring and comparing the relative innovativeness of college student personnel programs. The measurement devices did not, however, provide any evidence indicating the characteristics which differentiate the innovative from the non-innovative programs.

Discussion of Conclusions.--The results of the analysis of data pertaining to the major problem of this study appeared to give clear evidence that innovative college student personnel programs can be readily differentiated from colleges which have non-innovative programs. The evidence supporting this assumption was twofold. First, the instrument, "Adoption of Selected Student Personnel Practices Inventory," provided evidence from the normative data indicating that instruments can measure the relative innovativeness of college student personnel programs. Second, the analysis of data by multiple discriminant analysis, based upon sixteen variables, clearly and definitively indicated that there was a significant difference between colleges with innovative and non-innovative college student personnel programs.

Although the findings of this research project are not new to diffusion research, the results of the data analysis have for the first time provided evidence indicating that the characteristics which differentiate innovative student personnel programs from the non-innovative programs were similar to the characteristics found in other social systems. These findings along with Davis's (1965, p. 114) have

also provided support for the assumption that results from innovation studies using other social systems may have a high relationship to college student personnel work.

Furthermore, the results of this study have provided exceptional documentation of the concept that there are unique and identifiable differences between innovators and non-innovators. The basis for this assumption rests upon the statistical technique used in the analysis of data. Previous studies, for the most part, have relied upon univariate statistical techniques in an attempt to determine differences between groups. This procedure normally forces the researcher to pick out and interpret the largest F ratios, t's, or correlation coefficients. Frequently, these are drawn from a large number of non-independent statistics. Also, many innovation studies using multiple correlation techniques have attempted to determine relationships between specific, dependent variables and innovativeness (Rogers and Havens, 1962, p. 38). The superiority of multiple discriminant analysis provided a means for dealing separately with each variable in estimation while at the same time providing a test of hypotheses which led to a single probability statement referring to all variables jointly (Tiedeman, 1951). The research methodology employed in this study provided extensive statistical justification supporting the concept that there are identifiable differences between innovators and non-innovators based upon a number of highly related variables.

While supporting the results of previous innovation research, the major findings of this study did not lend support to the concept that innovation is related to a single variable or a relatively small combination of variables. Much of the traditional diffusion research

has studied the individual as the adoption unit. Considerable empirical research results based upon univariate statistics have been compiled and collated using the individual as the adoption unit. The resulting evidence from this compilation of data indirectly implies that variables related to innovativeness may be considered and studied as independent variables.

Although there have been few innovation research studies which have studied the social system as the unit of adoption, the evidence available from these studies has indicated that innovation is not composed of a single variable or a small number of related variables, but is far more complex (Evans, 1968, p. 152). The evidence from this study gave further support to this premise. Moreover, part of the methodology of this study was an attempt to determine which variables had the most potency in identifying the differences between innovators and non-innovators. The results of the statistical analysis were most inconclusive and tended to support the concept that the behavior of organizations and of the individuals who make up those organizations forms a unified whole (Rogers and Shoemaker, 1968, p. 12).

When using traditional univariate methodology, five of the sixteen variables were found to be greater than the pre-established level of significance; but when using statistical techniques which were capable of analyzing multivariate data, the multivariate test represented, therefore, a more powerful and discriminating analysis. The resulting evidence appeared to support the assumption that innovativeness is a considerably more complex variable when the social system is the unit of analysis than when the individual represents the unit of analysis.

Because it was impossible to demonstrate which variables contributed most to the identification of the variance, it was also impossible to indicate what relationship existed between administrative-organizational and personal-psychological variables and innovativeness. The relationship of organizational characteristics and personal characteristics of the chief student personnel administrator as related to innovativeness was not answered. It remains, however, an important problem worthy of further investigation. An examination of the existing theory (as outlined in Chapter II) would indicate that the role which the chief administrator plays in relation to the organizational structure of the institution cannot easily be identified (Spindler, 1963, p. 143). Further evidence supporting the complex relationship between the two can be found in both Davis's (1965, p. 115) and Evans's (1968, p. 28) research.

Even though the findings of this study demonstrated rather conclusively that identifiable differences exist between colleges with innovative and non-innovative student personnel programs, and that measurement devices appear effective in measuring the relative innovativeness of a college student personnel program, there remained many questions of importance which were not answered. The need for further effort in the area of providing more precise definitions, constructs, and identification of variables becomes painfully obvious. The evidence reported about the generality of the findings should indicate the importance of identifying more specifically the true nature of the variables which explain innovativeness and the corresponding level of potency of the variables.

Limitations.--The major limitation of this study, as seen by this investigator, would be the degree to which the data and the conclusions drawn from the findings can be generalized. This study examined only student personnel programs in private coeducational liberal arts colleges with student enrollments of less than 5,000. The colleges included in the population sample were also drawn from seventeen midwestern states, thus adding to the limitations.

All the colleges (245) which met the criteria for inclusion in the population sample, were included in the original sample receiving the "Adoption of Selected Student Personnel Practices Inventory." Ninety-six of the 245 institutions or 39% of the sample population were excluded due to insufficient tenure of the chief student personnel administrator. In considering the relative effect of the 39% loss, it should be noted that the loss in the criterion group, i.e., innovators was negligible while the majority of the loss due to insufficient tenure was in the control or comparison group, i.e., non-innovators. The final sample studied, consequently, did not represent a normal sample, but rather one that was slightly skewed.

The generalizability of the findings must also be considered in reference to the number of colleges included in the final sample studied. Twelve innovative student personnel programs compared to twelve non-innovative programs represented a sample size somewhat smaller than may be considered desirable. Caution must be exercised in generalizing the findings of this study to other population samples.

Caution must also be exercised in assuming that a cause-and-effect relationship has been established because sixteen variables

were shown to relate highly with innovativeness. The study did not attempt to answer the question whether or not a college adopting certain characteristics related to innovativeness would then tend to become more innovative. The primary concern of this study was to provide evidence by post hoc methodology that the study of student personnel programs and innovativeness is worthy of further research efforts.

One further precaution must be taken to guard against the impression that the study generally supported innovation for innovation's sake. This study considered innovation irrespective of its inherent positive or negative values. The extent to which a college should be innovative or non-innovative, early or late to adopt new ideas and practices, remains in the domain of the individual institution and the personnel which are responsible for it.

Implications for Educational Practice

Despite the limitation of the study, the results do appear to have direct as well as indirect implications for student personnel practice. First of all, the results have tended to verify that the diffusion process, adoption process, and characteristics of innovators of student personnel programs appear similar to other social systems studied. The similarity would tend to support the assumption that the large body of diffusion research findings are applicable to student personnel work.

Second, due to the similarity in findings of this study as compared to other diffusion research findings, it was considered possible, based upon the generalizations of the findings, to justify the following implications:

1) Adoption scales can be developed with reasonable validity and reliability which have the capacity for identifying the extent to which a college student personnel program is innovative or non-innovative, and they can be used, therefore, as future research and evaluation tools.

2) There are unique, significant, and identifiable characteristics which separate a college with an innovative student personnel program from a non-innovative program, consequently, legitimizing the innovators as a unique group worthy of further attention.

3) Based upon the apparent ability to identify the innovators from non-innovators, the results indicate that the chief student personnel administrator is a part of the unique characteristics of an innovative program. It may be possible to accelerate the diffusion of student personnel innovations by concentrating on disseminating the new ideas to the innovators first since they represent the most likely group to adopt and/or be receptive to applied research.

4) If innovativeness is a valued criteria, the characteristics related to innovativeness may be emulated by chief student personnel administrators who wish their program to be more innovative or amenable to change.

5) In student personnel training programs where receptivity to new ideas and flexibility to change are characteristics which represent in part the objectives of the program, the findings then give direction to the student personnel educator.

6) The findings of this initial study, namely, the relationship of student personnel practices to innovativeness, provide a sufficient base as well as justification for further heuristic research endeavors.

Recommendation for Further Research

In the process of building a methodology for this study and during the examination of the findings, more questions were generated than perhaps were answered. The most important and relevant questions which have remained unanswered are those related to the generalizability of the findings. The limited geographic area from which the original sample was drawn, and the relatively small number of colleges

included in the final mutually exclusive groups studied demand replication of the study prior to generalizing these findings to all colleges. Replication of the study should be considered with population samples representing geographic areas other than the midwestern states and colleges and other than private coeducational liberal arts colleges with student enrollments under 5,000.

No attempt was made in this study to establish a cause-and-effect relationship between the characteristics which were found to be unique to innovative colleges and their actual propensity for innovativeness. One might conclude from the findings of the study that a chief student personnel administrator who wished his program to be more innovative, might adopt the characteristics found to be unique to the innovative colleges. At present, however, there is inadequate empirical research indicating that the adoption of innovative characteristics will result in an innovative program. The unknowns in this area would indicate the appropriateness of longitudinal research which might examine what happens to colleges which have the potential for innovativeness and colleges which wish to be more innovative and are willing to adopt the characteristics found in the innovative colleges.

Both in this study and in Davis's (1965) study of innovation in colleges, the findings did not clearly reveal the significance of the inter-relationships between the personal characteristics of the administrators and the organizational variables. Further research is needed in this area to determine the exact effect and role which the administrator plays.

Further research should be focused on more precise exploration of the dimensions of innovativeness. This study revealed that sixteen variables adequately discriminated between the innovative and non-innovative programs. Sixteen variables, however, for practical purposes, represent a large and unwieldy number with which to work. Further effort, therefore, should be given to providing more adequate and precise operational definitions, constructs, and theories. This in turn would allow for the development of refined measurement techniques which would make possible more valid and reliable data collection. With more adequate theory and constructs along with refined measurement devices, it would perhaps be possible to reduce in number potent variables which would explain most of the differences between innovators and the rest of the population.

In Retrospect

During the initial developmental stages of this study, it was hoped that the major portion of the investigation would consist of an experimental study. As the proposal for the study progressed, it became apparent that little supportive research was available which examined the diffusion of innovations among student personnel workers. Without sufficient research evidence indicating either methods or procedures for determining innovative and non-innovative student personnel programs, not to mention what characteristics were representative of an innovative program, the idea of an experimental study gave way to an ex post facto study. Although experimental studies could possibly have been designed, it seemed that to study cause-and-effect relationships before knowing what differentiated

innovative from non-innovative programs, or characteristics unique to innovative student personnel programs, was inappropriate. The prior study, therefore, was undertaken.

By necessity, the purpose and intent of the investigation was designed to examine one particular aspect of student personnel work, namely, that of determining if innovative college student personnel programs were significantly different from non-innovative programs. It is hoped that the positive findings as well as the inconclusive evidence will serve as one of the first foundations upon which both further ex post facto and experimental studies will be built in college student personnel work.

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APPENDIX I

ADOPTION OF SELECTED STUDENT PERSONNEL PRACTICES INVENTORY

INSTRUCTIONS FOR COMPLETING INVENTORY: The examples below illustrate the response procedure.

PLEASE RESPOND TO ALL OF THE FOLLOWING ITEMS AS THEY PERTAIN TO YOUR INSTITUTION: PERSONNEL PRACTICES	Year the practice was adopted	Practice is currently being considered	Not yet adopted or considered and rejected	Practice adopted but discontinued	Practice does not apply to our institution**
Example 1: The use of computers and data processing equipment to compute need, allocate awards and keep financial aid records	___	(1)	2	3	4
Example 2: Local student government holds membership in U. S. National Student Association	___	1	(2)	3	4
Example 3: Participation in the College Work Study Program administered by the U. S. Office of Education	1966	1	2	(3)	4
Example 4: Fraternities and sororities must not have discriminatory practices based upon race, creed or color as part of their selection process. (Practice may not be applicable because Greek organizations do not exist on campus.)	___	1	2	3	(4)

** NOTE: This column should be circled only when the institution's constitution, bylaws and/or official board position is philosophically opposed to this practice.

If the practice is part of or at one time had been incorporated into your program, list the year adopted.

Column 1: Circle only if you are in the process of considering the adoption of the practice.

Column 2: Circle if you have not yet adopted the practice or if it has been considered and rejected.

Column 3: Circle if the practice had been adopted but has been discontinued. Indicate the year of adoption.

Column 4: Circle only when it is impossible to adopt the practice because the institution's constitution, bylaws and/or official board position is philosophically opposed to the practice, or the adoption of a practice is contingent upon a program which does not exist on your campus.

PLEASE TURN THE PAGE AND BEGIN

PLEASE RESPOND TO ALL OF THE FOLLOWING ITEMS

AS THEY PERTAIN TO YOUR INSTITUTION:

PERSONNEL PRACTICES	Year the practice was adopted	Practice is currently being considered	Not yet adopted or considered and rejected	Practice adopted but discontinued	Practice does not apply to our institution **
ADMISSIONS					
1. Early announcement of admissions for students having exceptional academic ability	____	1	2	3	4
2. International students must submit a TOEFL (Test of English as a Foreign Language) score as a prerequisite for admission or take a similar English language proficiency test	____	1	2	3	4
3. Remedial programs provided for socially, culturally and financially deprived students	____	1	2	3	4
FINANCIAL AIDS AND SCHOLARSHIP					
4. Making financial aid awards in the form of "Packaged Aid", i.e., the combination of scholarship aid, loans and work	____	1	2	3	4
5. Prior to the inception of the Economic Opportunity Grants Program, the use of financial aids as a recruitment device to attract socially, culturally and financially deprived students to your campus	____	1	2	3	4
6. Use of College Scholarship Service's Parents Confidential Form as a method of determining financial need	____	1	2	3	4
7. Participation in National Defense Education Act Loan Program	____	1	2	3	4
RESIDENCE HALLS					
8. Residence halls specifically designed as learning centers which contain lecture rooms, classrooms, educational electronic receiving equipment and/or other facilities which are contributory to the learning process	____	1	2	3	4

** NOTE: This column should be circled only when the institution's constitution, bylaws, and/or official board position is philosophically opposed to this practice.

PLEASE RESPOND TO ALL OF THE FOLLOWING ITEMS

AS THEY PERTAIN TO YOUR INSTITUTION:

PRACTICE	Year the practice was adopted	Practice is currently being considered	Not yet adopted or considered and rejected	Practice adopted but discontinued	Practice does not apply to our institution**
RESIDENCE HALLS (cont)					
9. Use of professional residence hall directors with formal counseling, guidance, psychology, sociology and/or student personnel training, rather than widows, retirees, or others	____	1	2	3	4
10. New residence halls specifically designed as coed residence halls	____	1	2	3	4
11. A student who serves as a student counselor and representative of the Dean's Office for each 35 to 60 students and who is specially trained and receives some form of financial remuneration for this position	____	1	2	3	4
12. Construction and renovation of new and old residence halls financed through self-liquidating loans	____	1	2	3	4
HOUSING REGULATIONS					
13. Sophomore, junior, and senior women students may have unlimited "overnights" without requesting specific permission from the residence hall director or student personnel staff	____	1	2	3	4
14. Sophomore, junior, and senior women students are not necessarily restricted to normal residence hall closing hours providing they adhere to procedures which have been established for maintenance of building security	____	1	2	3	4
15. Unsupervised and unrestricted off-campus housing for unmarried students 20 years or younger	____	1	2	3	4
16. Mandatory requirement that all off-campus landlords subscribe to nondiscriminatory practices when renting to students	____	1	2	3	4
STUDENT ACTIVITIES AND GOVERNMENT					
17. A regular and impromptu faculty, administrative and student leader round table, press conference, or similar event which allows for students to question, air issues, and/or constructively criticize college officials	____	1	2	3	4
18. Specific training in the fields of leadership, human relations, group dynamics and interpersonal relationships for students in formal leadership positions	____	1	2	3	4

** NOTE: This column should be circled only when the institution's constitution, bylaws and/or official board position is philosophically opposed to this practice.

PLEASE RESPOND TO ALL OF THE FOLLOWING ITEMS
AS THEY PERTAIN TO YOUR INSTITUTION:

PRACTICE	Year the practice was adopted	Practice is currently being considered	Not yet adopted or considered and rejected	Practice adopted but discontinued	Practice does not apply to our institution**
STUDENT ACTIVITIES AND GOVERNMENT (cont)					
19. Student government leaders are voting members on faculty-administrative committees, i.e., academic affairs, admissions, public affairs, and student affairs	____	1	2	3	4
STUDENT PERSONNEL STAFFING					
20. Division of staff responsibilities and title by function rather than by sex, e.g., Associate Deans, Division Directors, and Housing Directors whose functions include responsibilities for both men's and women's programs rather than staff division by Dean of Men and Dean of Women	____	1	2	3	4
21. A continuous and formal in-service training program	____	1	2	3	4
22. Specific staff member or members assigned the responsibility of research on student life	____	1	2	3	4
23. Research and investigation conducted recently or currently regarding the climate, atmosphere, environmental press and/or stress-relief	____	1	2	3	4
24. An individual assigned to do research regarding placement, vocational choice, and follow-up of graduates	____	1	2	3	4
COUNSELING					
25. A counseling center or at least one individual professionally trained in counseling who is assigned the task of assisting students in the exploration of their personal, vocational and educational goals	____	1	2	3	4
26. The use of intensive group counseling as a means of assisting individuals toward self-realization					
27. A contractual agreement between the college and a psychiatric clinic for diagnostic and emergency referrals, or a resident psychiatric clinic on campus consisting of at least one psychiatrist, clinical psychologist and psychiatric social worker	____	1	2	3	4

**NOTE: This column should be circled only when the institution's constitution, bylaws and/or official board position is philosophically opposed to this practice.

PLEASE RESPOND TO ALL OF THE FOLLOWING ITEMS
AS THEY PERTAIN TO YOUR INSTITUTION:

PRACTICE	Year the practice was adopted	Practice is currently being considered	Not yet adopted or considered and rejected	Practice adopted but discontinued	Practice does not apply to our institution**
EMPLOYMENT AND PLACEMENT					
28. A special office or individual assigned the responsibilities of counseling, collecting and disseminating information to students seeking admission into graduate school					
29. Active participation in GRAD (Graduate Resume Accumulation and Distribution), the national computorized placement program					
30. A summer placement program which helps students find summer employment as a means of gaining practical experience in their major field of study as well as financial aid					
ORIENTATION					
31. A required summer reading program for all incoming freshmen as a part of the orientation program					
32. A special orientation program for parents					
RECORDS					
33. Use of electronic data processing, microfilm or other similar devices for storage and quick information retrieval of student personnel records					
34. Adherence to the A.A.U.P.'s guidelines concerning what should be contained on the student personnel record as well as who and what information should be released to individuals and agencies outside the college					

RETURN TO: Ben Sprunger
Associate Dean of Students
Wheaton College
Wheaton, Illinois 60187

**NOTE: This column should be circled only when the institution's constitution, bylaws and/or official board position is philosophically opposed to this practice.

APPENDIX II

I. GENERAL DATA

INSTRUCTIONS: 1. All data should be supplied by the chief student personnel administrator.
2. All responses will be treated as confidential information.
3. Please supply the following information:

1. Name of individual completing questionnaire _____

2. Title _____

3. Name of institution _____

4. Your age at last birthday _____

5. When did you assume your present position as chief student personnel officer? _____ (Mo.) _____ (Yr.)

6. How many years prior to September 1966 have you been in student personnel work? _____

7. Among the private institutions of higher education, whom do you consider most likely the first to attempt or adopt new student personnel practices?

   A. _____ C. _____

   B. _____ D. _____

8. If you were to consider adopting a new practice, whom would you consider particularly helpful outside your institution?

   A. _____ (Name) _____ (Institution)

   B. _____ (Name) _____ (Institution)

   C. _____ (Name) _____ (Institution)

   D. _____ (Name) _____ (Institution)

APPENDIX III

ORIGINAL LETTER

March 6, 1967

Dean John A. Smith
All-American University
Hometown, U. S. A.

Dear Dean Smith:

The questionnaire which is enclosed is being sent to a selected group of chief student personnel administrators in private colleges having a liberal arts program. I am requesting your assistance and cooperation in completing and returning the questionnaire. A return stamped envelope has been enclosed for your convenience.

As student personnel practices continue to change to meet contemporary needs and as new practices are introduced, I am sure that all of us can benefit from research which indicates how new ideas and practices can be disseminated and adopted more efficiently. Therefore, the major purpose of this questionnaire is to collect information which will allow the investigator to study (1) the dissemination rate of new student personnel practices and (2) the extent of adoption of the selected practices contained in the questionnaire.

Since all institutions have not been included in this study, your response is both significant and necessary. The results of the pilot study indicate that the questionnaire may be completed in approximately 20 minutes. Your responses to the items will be treated as confidential information and complete anonymity will be observed in reporting the results. An analysis of the results from this questionnaire will be mailed to you.

Your response to this questionnaire will assist me greatly toward the completion of my doctoral dissertation. This study is being conducted under the direction of Dr. Norman Stewart, Chairman of the Department of Counseling and Student Personnel, Michigan State University.

I would certainly appreciate your immediate attention to this request.

Sincerely,

Ben Sprunger
Associate Dean of Students

APPENDIX IV

FIRST REMINDER LETTER

March 27, 1967

Dean John A. Smith
All-American University
Hometown, U. S. A.

Dear Dean Smith:

Approximately three weeks ago you received from me an inventory requesting information concerning selected student personnel practices adopted by your institution.

The inventory form may at first appear to be complicated; however, you will find it is not difficult and it can be completed in twenty minutes. I realize that at this time of the year with conventions, spring break, and laying plans for next year, the demands upon our time as deans is exceedingly great. It would, however, be extremely helpful if you could complete the inventory and return it to me. The response to this point has been very encouraging.

As stated in the letter accompanying the inventory, a copy of the results will be sent to you.

I would certainly appreciate your immediate attention to this request. If by chance you have already returned the inventory, please disregard this letter.

Sincerely,

Ben Sprunger
Associate Dean of Students

BS:gw

APPENDIX V

SECOND REMINDER LETTER

April 20, 1967

Dean John A. Smith
All-American University
Hometown, U. S. A.

Dear Dean Smith:

A few weeks ago, I sent an inventory type questionnaire to your institution and to a number of other private liberal arts colleges. The inventory dealt with a number of selected student personnel practices adopted by your institution.

As of this date, over 60% of those receiving the questionnaire have returned it. Since I have had no response from you, it is possible that you never received it, or perhaps your busy schedule has not permitted you to give it your immediate attention, and it has been mislaid. Regardless of what may have happened, may I assure you that your response is needed in order to insure an accurate and representative analysis.

The inventory form may at first appear to be complicated; however, you will find it is not and can be completed in approximately 20 minutes. An analysis of the results will be mailed to you.

I am enclosing another inventory questionnaire and a return envelope for your use. Your help in assisting me to complete this study will be greatly appreciated.

Sincerely,

Ben Sprunger
Associate Dean of Students

BS:lp

Enclosures

APPENDIX VI

CONSULTANTS IN THE DEVELOPMENT, FORMULATION AND SAMPLING OF THE INSTRUMENTS

The following individuals acted as consultants (January - May, 1967) in the formulation and pilot sampling of the instruments:

Mr. Walter Block*
Dean of Students
St. Procopius College
Lisle, Illinois

Dr. Marion Chase*
Dean of Students
North Central College
Naperville, Illinois

Dr. Roberta Christie*
Department of Guidance and
Student Personnel Services
Loyola University
Chicago, Illinois

Dr. William Denman*
Dean of Students
Elmhurst College
Elmhurst, Illinois

Dr. Richard Gross*
Dean of Students
Wheaton College
Wheaton, Illinois

Dr. James Harvey
Dean of Students
Harper College
Palatine, Illinois

Dr. Walter Johnson
Dept. of Counseling, Personnel
Services & Ed. Psychology
Michigan State University
East Lansing, Michigan

Dr. Henry Nelson
Higher Education Division
U. S. Office of Education
Chicago, Illinois

Dr. Norman Stewart, Chairman
Dept. of Counseling, Personnel
Services & Ed. Psychology
Michigan State University
East Lansing, Michigan

Dr. Arthur Volle*
Professor of Psychology and
former Dean of Students
Wheaton College
Wheaton, Illinois

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*Served as a pilot sample for testing second instrument.

APPENDIX VII

TOTAL YEARS OF EXPERIENCE IN STUDENT PERSONNEL WORK

Years	Met All Requirements: Innov. Group	Met All Requirements: Non-Innov. Group	Average Adopters Who Met All Requirements	Administrators Who Did Not Meet All Requirements
1 - 3	0	0	0	43
4 - 6	2	3	16	19
7 - 9	4	5	15	15
10 - 12	1	2	14	8
13 - 15	1	2	10	6
16 & over	4	0	18	5
Total	12	12	73	96
$\bar{X}$	11.6	8.5	11.8	6.3

AGES OF CHIEF STUDENT PERSONNEL ADMINISTRATORS

Years	Met All Requirements: Innov. Group	Met All Requirements: Non-Innov. Group	Average Adopters Who Met All Requirements	Administrators Who Did Not Meet All Requirements
20-29	0	0	0	11
30-39	6	3	14	41
40-49	4	6	31	33
50-59	2	2	23	8
60-over	0	1	4	3
Did not indicate	0	0	1	0
Total	12	12	73	96
$\bar{X}$	38.4	46.5	43.1	38.7

APPENDIX VIII

Survey of Demographic Data Pertaining to Deans of Students and Student Personnel Administrative Procedures in Liberal Arts Colleges

To:

From: Ben Sprunger
Associate Dean of Students
Wheaton College
Wheaton, Illinois 60187

Directions: There are three sections to be completed. In order to save time, Section I may be completed by your secretary or one of your staff members. Please review it to make sure the information is correct before returning it.

Section II and III must be completed by you. Please answer all items in Section II before opening and completing Section III.

SECTION I

1. _____ How many full-time undergraduate students were enrolled at your institution at the beginning of fall semester or fall quarter for the 1966-67 academic year?

Indicate the number in each catagory who are under your administrative responsibility.

2. _____ Full-time professional staff (deans, associates, assistants, residence hall directors, union directors, etc.) who have had professional preparation as student personnel workers.

3. Part-time professional staff (List the title of each person and percent of time spent in student personnel work.)

Position	Percent of Time

(Use reverse side of page if additional space is needed.)

4. _____ Full-time (or the equivalent of full-time) nonprofessional staff (secretaries, clerks, receptionists, etc.)

For each of the following categories, what were the budget appropriations for your administrative area for the last fiscal year?

5. _____ A. Total salary appropriations for all full-time and part-time staff

6. _____ B. Total of financial aid monies administered by the institution, i.e., institutional scholarships, loans, N.D.E.A. Loans, Economic Opportunity Grant, Federal Work Study Program, etc. (Do not include monies received from State Scholarship Agencies, National Merit Winners, unless they are sponsored by your institution, United Student Aid, or state guarantee loan monies.)

7. _____ C. Total allocation for travel and expenses to attend professional conferences.

8. _____ D. Total for research, in-service education and consultants whom you bring to your campus

9. _____ E. Miscellaneous

10. _____ F. What was the total budget appropriation for your administrative area for the last fiscal year? (Do not include capital outlay for new residence halls, unions and furnishings for new buildings.)

Please indicate each institutional policy- and decision-making committee on which students serve. Indicate if it is considered a major or minor policy-and decision-making committee. Also indicate the extent of student voting.

11. Name of Committee	Type of Committee		Students Have a Vote On:		
	Major	Minor	All Matters	Most Matters	Some or No Matters

(Use reverse side of page if additional space is needed.)

SECTION II

This section should be completed by the Dean of Students.

12. Please complete all of the items as they pertain to your educational background.

	Undergraduate Degree	Masters Degree	Post Masters Work
Major			
Minor			
Type of Degrees Received B.S., M.A., Ed.D., Ph.D., etc.			
Year each degree was completed			

13. Please indicate in the blanks below the <u>total</u> number of graduate hours you have compiled since completion of your undergraduate degrees. (Include research credit, independent study credit, practicum credit, etc.)

_____ semester hours, and/or _____ quarter hours

14. Please indicate the total number of <u>courses</u> which you have had in the following areas. <u>Do not</u> include undergraduate courses.

_____ Agriculture

_____ Anthropology

_____ Business Administration

_____ Education: Areas other than guidance, student personnel and higher education

_____ Engineering

_____ Fine and Applied Arts

_____ Guidance, Student Personnel, and/or Administration of Higher Education

_____ Humanities and Arts and Letters

_____ Natural Science

_____ Psychology: Counseling, Clinical, Experimental and/or Social Psychology

_____ Sociology

_____ Others, please indicate_____

15. Please check appropriate column for each organization in which you hold membership or in which you are the institutional representative. Do not check if members of your department hold membership for which they have paid from their own personal funds.

	Hold Membership	Attended Convention 1965-66	Attended Convention 1966-67	Have read at least one paper within last two years (1965-67)	Have held or presently hold an office or committee membership in organization
A. General Student Personnel Organizations					
1. American College Personnel Association (ACPA)					
2. American Personnel and Guidance Assoc. (APGA)					
3. Canadian Association of University Student Personnel Services (CAUSPS)					
4. College Student Personnel Institute (CSPI)					
5. Conference of Jesuit Student Personnel Administrators (CJSPA)					
6. Council of Student Personnel Associations in Higher Education (COSPA)					
7. Evening Student Personnel Association					
8. National Association of Student Personnel Administrators (NASPA)					
9. Student Personnel Association for Teacher Education (SPATE)					
10. National Association of Womens Deans and Counselors (NAWDC)					
B. Related Student Personnel Organizations					
1. Administrators of College and University Counseling Centers					
2. American Association of Collegiate Registrars and Admissions Officers (AACRAO)					
3. American College Health Assoc. (ACHA)					
4. American Psychological Assoc. (APA)					
5. American Rehabilitation Counseling Association (ARCA)					
6. Association of College Admissions Counselors (ACAC)					
7. Association of College Unions - International (ACU-I)					
8. Association of College and University Housing Officers (ACUHO)					

15. (Continued)

	Hold Membership	Attended Convention 1965-66	Attended Convention 1966-67	Have read at least one paper within last two years (1965-67)	Have held or presently hold an office or committee membership in organization
B. Related Student Personnel Organization(cont)					
9. Association for the Coordination of University Religious Affairs (ACURA)					
10. Association for Counselor Education and Supervision (ACES)					
11. Association for School, College and University Staffing (ASCUS)					
12. College Entrance Examination Board (CEEB)					
13. The College Placement Council, Inc.(CPC)					
14. Midwest Association of Student Financial Aid Administrators					
15. Midwest Association of University Student Employment Directors (MAUSED)					
16. National Association of College and University Chaplains and Directors of Religious Life (NACUC)					
17. National Association of College and University Traffic and Security Directors					
18. National Association for Foreign Student Affairs (NAFSA)					
19. National Council of College Publications Advisers (NCCPA)					
20. National Vocational Guidance Association (NVGA)					
21. Oriental Directors Conference					
C. Organizations of Colleges, Universities and Higher Education (Selected)					
1. American Association of Junior Colleges (AAJC)					
2. American Council on Education (ACE)					
3. Association for Higher Education					
4. Association of American Colleges (AAC)					
Others (List Organization)					
5. _____					
6. _____					
7. _____					

16. _____ Please make as accurate an estimate as possible of the number of professionally related speeches you have made since September 1965. (Last two years)

17. _____ Please make as accurate an estimate as possible of the number of times you traveled as a professional consultant since September 1965.

18. _____ Please indicate each professionally related conference you have attended from the period of July 1, 1965 through June 30, 1967 (last two years).

	Name of Conference	City	State
1.			
2.			
3.			
4.			
5.			
6.			

(Use reverse side of page if additional space is needed.)

19. Please indicate each trip, not including attendance at professional conferences, you have taken to observe specific student personnel practices at other institutions from July 1, 1965 through June 30, 1967 (last two years).

	Practice or facility to which you traveled to observe	City	State
1.			
2.			
3.			
4.			
5.			
6.			

(Use reverse side of page if additional space is needed.)

20. _____ Does your college have an institutional policy restricting the number of conferences and number of miles allowed for travel? (Yes or no)

If yes, briefly indicate the restrictions of the policy:_____

_____

_____

_____

21. Since September 1963, how many professionally and/or academically related journal articles or books have you had published or have been presently accepted for publication? (Do not include book reviews.)

Title of Book or Article	Publisher	Date

(Use reverse side of page if additional space is needed.)

22. Since September 1963, how many institutionally conducted research projects which have included empirical hypotheses have you conducted or participated in? (Do not include questionnaires or other descriptive data which you have supplied via mail to other researchers.)

Title of Project	Sponsor	Date

(Use reverse side of page if additional space is needed.)

23. When establishing new student personnel policies, revising old ones, and/or discarding obsolete ones, to what extent does the faculty become involved? (Place a mark on the continuum which best indicates faculty involvement.)

Faculty highly involved ⟷ Faculty has relatively no involvement

SECTION III

Please respond to each item according to your personal feelings. I am sure you will find yourself agreeing strongly with sime statements, disagreeing just as strongly with others, and perhaps uncertain about others.

Please indicate in the blank at the left of each item how much you agree or disagree with it. Please respond to each item by writing +3, +2, +1, -1, -2, or -3 depending on how you feel in each case, using the following numbers:

+3	I agree very much.	-3	I disagree very much.
+2	I agree on the whole.	-2	I disagree on the whole.
+1	I agree a little.	-1	I disagree a little.

____ 1. Man on his own is a helpless and miserable creature.

____ 2. Once I get wound up in a heated discussion I just can't stop.

____ 3. I am a methodical person in whatever I do.

____ 4. Fundamentally, the world we live in is a pretty lonesome place.

____ 5. A person who gets enthusiastic about too many causes is likely to be a pretty "wishy-washy" sort of a person.

____ 6. In a discussion I often find it necessary to repeat myself several times to make sure I am being understood.

____ 7. I do not like everyone I know.

____ 8. I often become so wrapped up in something I am doing that I find it difficult to turn my attention to other matters.

____ 9. There are two kinds of people in the world: those who are for truth and those who are against the truth.

____10. A man who does not believe in some great cause has not really lived.

____11. Once in a while I laugh at a dirty joke.

____12. I'd like it if I could find someone who would tell me how to solve my personal problems.

____13. To compromise with our political opponents is dangerous because it usually leads to the betrayal of our own side.

____14. The United States and Russia have just about nothing in common.

____15. I would rather win than lose in a game.

____16. A person who thinks primarily of his own happiness is beneath contempt.

____17. If I could get into a movie without paying and be sure I was not seen I would probably do it.

____18. It is better to be a dead hero than a live coward.

____19. There is usually only one best way to solve most problems.

____20. There are a number of persons I have come to hate because of the things they stand for.

APPENDIX IX

ORIGINAL LETTER

June 17, 1967

Dean John A. Smith
All-American University
Hometown, U. S. A.

Dear Dean Smith:

You will find enclosed two copies of the questionnaire I referred to in our phone conversation on June 16, 1967. It is only necessary to complete one and return it in the enclosed stamped envelope.

Since I may need to substitute an additional phone call in place of a personal interview, the second copy may be useful as a source of reference. Perhaps you may also wish a copy for your file.

Please be assured that the information you supply will be held in strictest confidence. This information and the analysis of data will neither indicate the personal nor institutional source. The data are to be used as part of my doctoral dissertation. Dr. N. R. Stewart of Michigan State University is serving as the director of the dissertation.

If possible, I would appreciate your returning the questionnaire before July 1, 1967. Needless to say, I am extremely grateful for your willingness to assist me in this project.

Sincerely,

Ben Sprunger
Associate Dean of Students

BS:ss

Enclosures

APPENDIX X

REMINDER LETTER

July 8, 1967

Dean John A. Smith
All-American University
Hometown, U. S. A.

Dear Dean Smith:

A few weeks ago I sent to you a questionnaire following our phone conversation in which you agreed to participate in additional research for my dissertation. I suggested, if possible, that the questionnaire should be returned by July 1, 1967.

Since I have made arrangements to submit the data for analysis at the Computer Center, Michigan State University, on July 24, it is extremely important that you return the questionnaire within the next week. This will allow me approximately a week to put the data in the necessary form for submitting to the computer.

I would certainly appreciate your immediate attention to this request. If by some chance you have already returned the questionnaire, please disregard this letter.

Sincerely,

Ben Sprunger
Associate Dean of Students

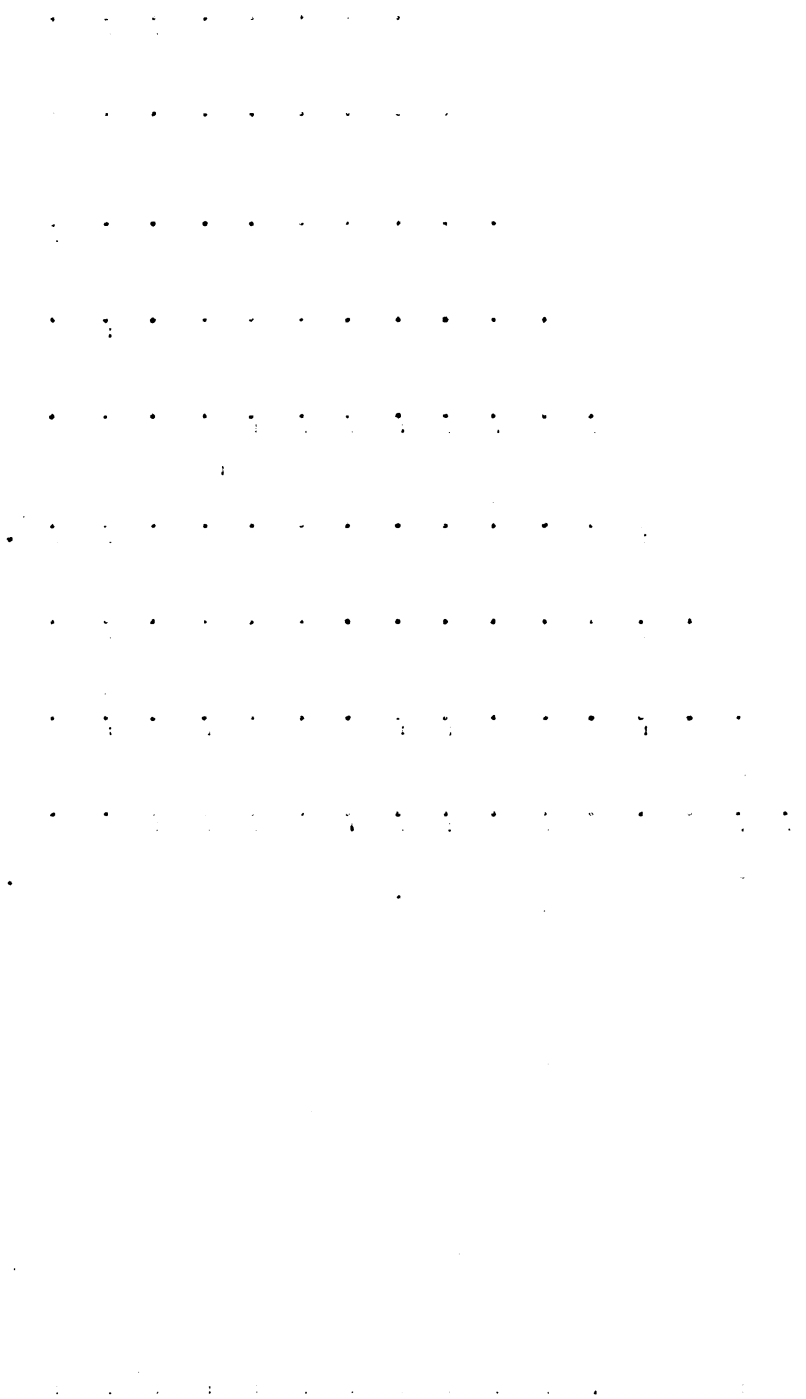
BS:ss

APPENDIX XI

COMBINED CORRELATION MATRIX WITH CRITERION GROUP INCLUDED

VARIABLE/HYPOTHESIS	C - G	S_1-1	S_1-2	S_1-3	S_1-4	S_1-5	S_1-6	S_1-7	S_1-8
Criterion Group									
S_1-1 Faculty Assist in Policy Formation	-.272								
S_1-2 Students Assist in Policy Formation	-.115	.241							
S_1-3 Research Involvement	-.344	.239	.488*						
S_1-4 Ratio of Staff to Students	.437*	-.101	-.321	-.402					
S_1-5 $ per Student for Staff Salaries	-.526**	.092	.153	.520**	-.542**				
S_1-6 $ for Research and In-Service Ed.	-.607**	.310	.290	.836**	-.483**	.612**			
S_1-7 $ for Professional Travel	.367	.019	.080	.213	-.330	.711**	.341		
S_1-8 Total Miles Traveled by Dean	-.405*	-.067	.300	.384	-.501*	.549**	.366	.501*	
S_2-1 Involvement in Professional Assoc.	-.065	-.265	.238	.477*	-.061	.292	.254	.285	.376
S_2-2 Graduate Degrees	-.511*	.042	.222	.437*	-.225	.424*	.463*	.453*	.241
S_2-3 Graduate Course Credit	-.231	.176	.109	.332	-.035	.104	.226	.062	.029
S_2-4 Personnel and Guidance Courses	-.407*	.111	.267	.611**	-.185	.505*	.563**	.475*	.124
S_2-5 Behavioral Science Courses	-.283	-.016	.176	.472*	.080	.228	.335	.269	-.099
S_2-6 Anthro, Psych & Sociology Courses	-.054	.075	.137	.398	.082	.024	.209	.043	-.110
S_2-7 Age	.365	-.214	-.045	-.204	.025	-.100	-.388	.112	-.097
S_2-8 Open Belief Systems	.362	.036	.022	-.316	.523**	-.455**	-.443*	-.401	-.324

df = n-2:24-2 = 22 * r < 404 = p < .05 ** r < 515 = p < .01



APPENDIX XI (Cont.)

COMBINED CORRELATION MATRIX WITH CRITERION GROUP INCLUDED

VARIABLE/HYPOTHESIS	S_2-1	S_2-2	S_2-3	S_2-4	S_2-5	S_2-6	S_2-7	S_2-8
Criterion Group								
S_1-1 Faculty Assist in Policy Formation								
S_1-2 Students Assist in Policy Formation								
S_1-3 Research Involvement								
S_1-4 Ratio of Staff to Students								
S_1-5 $ per Student for Staff Salaries								
S_1-6 $ for Research and In-Service Ed.								
S_1-7 $ for Professional Travel								
S_1-8 Total Miles Traveled by Dean								
S_2-1 Involvement in Professional Assoc.								
S_2-2 Graduate Degrees	.454*							
S_2-3 Graduate Course Credit	.056	.306						
S_2-4 Personnel and Guidance Courses	.545**	.656**	.211					
S_2-5 Behavioral Science Courses	.451*	.655**	.275	.619**				
S_2-6 Anthro, Psych & Sociology Courses	.083	.211	.230	.223	.748**			
S_2-7 Age	.001	-.114	-.035	-.140	.056	.053		
S_2-8 Open Belief Systems	-.294	-.188	-.285	-.314	.082	.221	.079	

df = n-2:24-2 = 22 *r < 404 = p < .05 ** r < 515 = p < .01

APPENDIX XII

UNIVARIATE F TESTS FOR ALL STATISTICAL HYPOTHESES

VARIABLE/HYPOTHESIS	Sums of Square Between	Sums of Square Within	Means Square Between	Means Square Within	F Ratio	P
S_1-1 Faculty Assist in Policy Formation	4.2	52.3	4.2	2.4	1.75	.199
S_1-2 Students Assist in Policy Formation	13.5	1009.8	13.5	45.9	.29	.593
S_1-3 Research Involvement	30.4	256.9	30.4	10.3	2.95	.100
S_1-4 Ratio of Staff to Students	39042.6	165128.7	39042.7	7505.8	5.20	.033*
S_1-5 $ per Student for Staff Salaries	6379.8	23025.7	6379.8	756.6	8.43	.008**
S_1-6 $ for Research and In-Service Ed.	1550416.7	2659166.7	1550416.7	120871.2	12.83	.002**
S_1-7 $ for Professional Travel	2690051.0	19200239.6	2690051.0	872738.2	3.08	.093
S_1-8 Total Miles Traveled by Dean	5083001.0	31831772.5	5083001.0	1446898.8	3.51	.074
S_2-1 Involvement in Professional Assoc.	5.0	1184.9	5.0	53.9	.093	.763
S_2-2 Graduate Degrees	16.7	47.2	16.7	2.1	7.77	.010**
S_2-3 Graduate Course Credit	2667.0	47456.9	2667.0	2157.1	1.24	.287
S_2-4 Personnel and Guidance Courses	130.7	657.2	130.7	29.9	4.37	.048*
S_2-5 Behavioral Science Courses	287.0	3303.9	287.0	150.2	1.91	.181
S_2-6 Anthro, Psych & Sociology Courses	4.1	1443.7	4.2	65.2	.06	.803
S_2-7 Age	400.2	2603.8	400.2	118.4	3.48	.079
S_2-8 Open Belief Systems	165.4	1098.6	165.4	49.9	3.31	.082

df = g_1-1, n_1-22 * F < 4.30 = P > .05 ** F < 7.94 = P > .01