

THE DEVELOPMENT AND APPLICATION OF A METHOD FOR EVALUATING
DEFINED PHASES OF STUDENT ACTIVITIES PROGRAMS IN
INSTITUTIONS OF HIGHER EDUCATION

A DISSERTATION

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THE DEGREE OF DOCTOR OF EDUCATION
IN THE DEPARTMENT OF EDUCATION
WITH A SPECIALIZATION IN EVALUATION AND RESEARCH

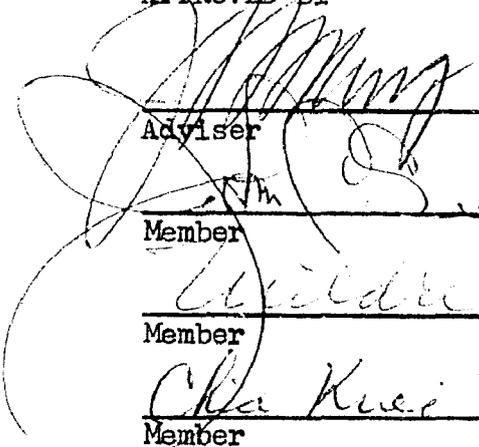
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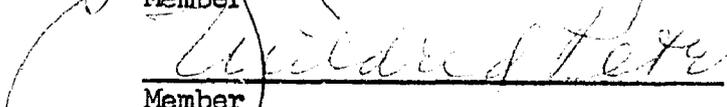
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PREFACE

The purpose of this study is to develop a methodology for evaluating the need, scope, operation, and implementation of program segments composing general student activities programs in institutions of higher education. Further, the proposed methodology is designed in a way that permits successful application by an individual member or group of persons selected from the student body, faculty, administration, or any other component part of the institution's community population. It should be noted that the methodology proposed here is not intended as a panacea, but at best a possible starting point for further development of evaluation procedures for educational research in the area of student activities.

The author has been the beneficiary of so many sources that it is possible to acknowledge only the most obvious. He owes a great debt of sincere gratitude to Dr. J. W. Menge for serving as a constant source of stimulation through sagacious counseling, direction, and the exertion of an effort far beyond that demanded by his position of doctoral adviser. He is most grateful for the assistance and guidance received from Dr. Karl Folley, Dr. Mildred Peters, Dr. John Sullivan, and Dr. Chia Tsao, who formed his doctoral committee. Their encouragement and helpful suggestions were greatly appreciated.

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On a personal note, especial thanks to my wife, Helen, and our three daughters, Dale, Lynn and Jill. Their magnanimous patience, understanding and cooperation throughout the project were truly admirable. Finally, the author feels indeed fortunate to have been able to enlist the services of Mrs. Mary McNair for the general preparation and typing of the final edition of the manuscript, and wishes to express his gratitude for her many excellent suggestions and contributions.

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CHAPTER I

INTRODUCTION

Background of the Problem

During the past thirty-five years the area of student-personnel services in higher education has been greatly expanded, and is becoming increasingly important in the total education of the individual student. The American Council on Education became so impressed with the importance of the area that in the 1949 edition of its publication, "The Student Personnel Point of View," the following statement of general philosophy concerning this phase of the total educational program was made:

The student personnel point of view encompasses the student as a whole. The concept of education is broadened to include attention to the student's well-rounded development--physically, socially, emotionally, and spiritually, as well as intellectually. The student is thought of as a responsible participant in his own development and not as a passive recipient of an imprinted economic, political, or religious doctrine, or vocational skill. As a responsible participant in the societal process of our American democracy, his full and balanced maturity is viewed as a major end-goal of education, and, as well, as a necessary means to the fullest development of his fellow-citizen.¹

As may be surmised from the foregoing definition, student personnel services in most universities and colleges deal with the total life of the student outside of the classroom and include such areas as: alumni affairs, counseling and testing, graduate place-

¹American Council on Education Studies, The Student Personnel Point of View (Washington: 1949), Series VI, Volume XLIII, No. 13, p. 1.

ment, university food service, student housing, orientation, student financial aids and placement, student health service, student publications, student religious activities, reading and study efficiency, student activities, university veteran affairs, foreign student counseling, athletics, and admissions. Of the many areas composing the usual Division of Student Personnel, the one of primary concern to this study is that of student activities. However, prior to considering the specific points of interest in this connection, it might be wise to examine briefly what is meant by the term "student activities," and to trace the development of the area in American higher education.

Student activities have been variously termed "extra-curricular activities," "extra-curriculum activities," and by those who believe that all activities under the direction and supervision of the school should be considered educative and within the scope of the curriculum, "co-curricular activities." In any event, for all practical purposes, the following definition seems aptly to describe the area under consideration:

Student activities may be considered as those programs and events, carrying no academic credit, sponsored and organized by pupils' or students' organizations or by the educational institution, designed to entertain, instruct, and/or provide exercise of interests and abilities; subject to some measure of control by the institution.²

With the area so defined, the task of briefly tracing the history of student activities in American education becomes a much

²Encyclopedia of Educational Research, ed. by Walter S. Monroe (New York: MacMillan Company, 1950), p. 424. Definition reprinted by permission of Dictionary of Education, C. V. Good, McGraw-Hill Book Company, Inc., 1945.

simpler one. According to Arbuckle, when higher education was first introduced into the American colonies it followed a European pattern that had prevailed for centuries, where the concern was with the development of the total student, and equal attention was paid to his social, religious, moral, and intellectual growth.³

For example, in the earliest American schools, although athletics were not very important, by 1811 football had become popular at Exeter Academy, and in 1859 the first match game with another school was played.

Rhetorical societies and debating and dramatic clubs were organized in the New England academies around the beginning of the nineteenth century. Student publications which were read at assemblies were started by literary societies, and printed magazines, newspapers, and articles of current events were introduced in New England high schools around 1850.

Honor systems, study-hall self government, and monitorial instructional regimes existed in the early nineteenth century. However, the need for supervising student government was brought to the attention of the American Institute of Instruction when, in 1831, Jacob Abbot warned that the operation and general governing of the school could not safely be turned over entirely to the students.

The rise of German education in the nineteenth century brought an increasing emphasis on intellectual growth alone, and American universities were quick to follow the German pattern.

³Dugald S. Arbuckle, Student Personnel Services in Higher Education (New York: McGraw-Hill Company, Incorporated, 1953).

However, by the beginning of the twentieth century the pendulum was beginning to swing back, and activities were becoming a more prominent part of the educational scene. Actually, the modern period and general development of activities in American schools began with several notable experiments in student government, such as the Junior Republic, founded by William George in 1895. Activity along these lines was greatly stimulated and furthered by certain influential citizens, such as Wilson Gill, who founded the American Patriotic League to improve training in school citizenship. After the turn of the century, debating societies, athletic associations, dramatic groups, musical organizations, clubs of all kinds, and honor societies began to be organized in large numbers.

As attitudes of opposition or indifference on the part of the teaching profession changed to tolerance, then to assimilation, the idea of a program of activities, like the program of studies, made its appearance. By the 1920's and 1930's "guidance" was receiving increasing attention in colleges and universities throughout the nation. Although much of the guidance in colleges during the decade of the 20's was highly vocational in nature, there is marked evidence in the literature of twenty to thirty years ago of a gradually broadening concept concerning the guidance of students. Ultimately the area was expanded so as to include groups and thus great contributions were made to the development of the general area of student activities.

Throughout the history and general development of the student

activities area of education the nature of the activity and the form of organization were influenced by the social conditions and educational theories which prevailed at the time. Frequently the driving force that pressed the development was found to be an irrepressible adolescent urge for self-expression rather than insight on the part of the school as to the needs of youth. More recently, however, growth and development of student activities have been guided by the social forces and educational philosophy which emphasize the importance of meeting the needs both of the individual and of society in the democratic way of living.

Beyond this fact there is a general recognition in colleges and universities throughout the nation that the American college student of today is not the same as the college youth of a century ago. He is a different type of student living in a different world, and the old concept of higher education is no longer suitable. The newer concept of education is dedicated to the whole individual and the specific services concerned with the welfare of the individual are no longer considered as extras to be tacked on the academic program. Student activities are becoming more and more a part of the student's total education, and it is becoming increasingly difficult to differentiate between these areas of education and those of the formal curriculum known as "laboratory" experiences and sessions.

Many institutions of higher learning still lack what would be considered the bare minimum of a good student activities program. Older institutions of this type may find it difficult to change a pattern of education that has been in effect for one or two

centuries. In the case of a younger institution there is less to change, and it is easier to "adopt" the activities point of view than to "change" to the student activities point of view.

Another difficulty confronting the development of good programs is the fact that many phases of activities programs have often been added in a disjointed manner without any great concern for the needs of the students and the feelings of the faculty members. In some instances faculty members have been hostile and indifferent while the students have felt that certain activities were being imposed upon them. In other cases the organizations and administrations of these areas became the job of an individual who was already loaded down with other tasks and who quite frequently had little understanding of, or sympathy with, the student activities point of view. In still other situations the activities area became the added responsibility of one who was imbued with the academic tradition, and who naturally enough would think of this area as one of secondary importance. Where the activities area became the responsibility of an autocratic administrator who daily sent forth his orders of the day, active participation in the program suffered severely, and invariably the program became one of meaningless routine. Finally, there were those situations where the development of activities did not prosper, not because of the values held by the persons responsible, but because these persons lacked the knowledge, understanding, and skills that were essential if the task was to be done well.

Numerous studies of these problem areas have been made in

different geographical sections of the nation, and these studies have yielded somewhat divergent results. However, there is general agreement that a common core of certain types of student activities exists in all American institutions of higher education. The types of activities composing this core are: clubs, athletic groups, musical, dramatic, debating, and honor societies, publications, and finally student government organizations.

Although there exists this core of activities upon which there is general agreement, actually very great differences obtain between individual institutions in the matter of their particular student activities programs. Similarly, great differences have been reported in kind and volume of activity carried on by a particular type of student organization. In the case of student government, for example, one school will have a "puppet" form, whereas in another situation students might well participate in making and enforcing regulations governing their behavior throughout the school, in regulating all other types of organizations, and in initiating any activity which they feel will promote the welfare of the school community.

In the actual conduct of student activities, certain difficulties invariably arise concerning the need, scope, implementation, and operation of certain segments and specific events composing an activities program. This fact, coupled with some of the shortcomings mentioned earlier constitutes a problem that must be faced and resolved cooperatively by the student body,

faculty, administration, and alumni if the modern philosophy of the education of the whole individual is to be fulfilled.

In certain instances, lack of financial wherewithal, building facilities, and trained personnel have placed certain limitations upon the student activities area of higher education. However, one of the more difficult problems regarding further growth and development of activities programs, is the lack of an objective evaluative methodology by which questions of need, scope, implementation, and operation of such programs can be reliably ascertained.

Of particular interest to this study is the situation which currently exists in the student activities programs of large universities. With the tremendous expansion of student activities and other personnel services since the end of World War II, the need for objective evaluation is greater than it has been at any time in the past. The matter of providing staff places a definite financial demand on the budget of the institution, despite the somewhat ameliorating circumstance provided through means of assessing each student a certain amount which is commonly termed a "student activities fee." In the present day many universities are seeking to develop a greater flexibility in their activities programs to meet more efficiently the challenge of increasing enrollments and the changing needs of student bodies. These circumstances combined with the fact that, in a manner of speaking, student activities are constantly on trial with the student body, faculty, and administration, create the necessity for these areas to prove their worth to the general educative process within

American university and college communities. One way that this responsibility can be met is through employment of dynamic, meaningful evaluative methodologies, which are capable of determining whether or not such services or programs are of a sufficiently contributory nature to condone their existence.

Since the decision concerning the general worth of a student activities program, considered by segments or in total, relies mainly upon subjective or value judgment, such programs do not readily lend themselves to the simple analysis and evaluation of enumerative data which is possible within many other areas of the university educational endeavor. In fact, it might well be said that any decision concerning the educational value of a student activities program, or segment of it, depends for the most part upon the value judgment of the individual making the decision. For this reason it becomes necessary to consider such questions as: Who is the decision-maker? What are his biases? What constituency does he represent? Does his background qualify him for decision-making in this area? Does he possess the necessary and correct information from reliable sources for decision? These are but a few of the questions that becloud any endeavor to evaluate a student activities program in an institution of higher education.

Some student personnel workers have stated that there is the ever present problem of infiltration by pressure groups into the area of evaluation and decision concerning certain phases of the activities program. To know who is sincere and relatively unbiased, and those who might have vested interests in a particular

matter, further complicates an already complex area. Another perplexing aspect of the evaluation of phases of activities programs, or even particular events, is that of finding reliable, current, and pertinent data for decision-making. Personnel workers, or delegated investigators, must constantly heed the philosophical admonition that honesty of intention, and integrity in the matter of interpretation of whatever data may come to hand, are poor and inexcusable substitutes for thorough purposeful investigation of the most reliable and germane data available.

Of course, the foregoing becomes relatively meaningless if the institution in question does not provide for some type of agency having a continuing responsibility for collecting data concerning the operation of the various events composing the total activities program. Without such a central source of information, the investigator faces an almost insurmountable problem of collecting reliable data. Data gathered under circumstances of little or no central administrative agency responsibility may be subject to a large amount of bias and error. Add to this disadvantage the difficulty of maintaining order in the investigation of such a dynamic constantly changing program as student activities, and the problem associated with the evaluation of this area begins to assume its true size and proportion.

Statement of the Problem

The purpose of this study is to develop a methodology for evaluating the need, scope, operation, and implementation of program segments composing general student activities programs

in institutions of higher education. Further, the proposed methodology is to be designed in a way that will permit successful application by an individual member or group of persons selected from the student body, faculty, administration, or any other component part of the institution's community population.

The methodology should provide for, and should materially aid in resolving such problems as:

1. Securing valid statistical information that is current, pertinent, and from a reliable source.
2. Treating and objectively interpreting the data relative to the questions of need, scope, implementation, and operation of segments of a student activities program.
3. Providing necessary and sufficient information for more informed decision-making concerning controversial issues of student activities programs.
4. Supplying reliable information concerning the attitudes of the constituencies to be affected by, and those responsible for, program operation, prior to any final decision-making by the agency originally commissioning the study of the problem area under consideration.
5. Providing an outline for a complete and adequately substantiated report by the designated investigatory personnel responsible for actions of fact-finding and recommendation to the agency originally responsible for the commissioning of the investigation or study of the problem area.

The general problem of the study presents a rather broad area

composed of various individual problems that must be resolved in order to accomplish the development of the proposed methodology. This fact, and ultimately the general problem of the study, may be resolved by the following approach:

1. The underlying rationale and general considerations of the methodology will be defined and discussed.
2. A procedure for simply and scientifically "sampling" a college or university community population through the methods of random sampling and "optimum allocation" under conditions that might well prevail during a normal school year, will be developed.
3. A minimum size sample table with accompanying development and explanation concerning its limitations, use, and possible extensions of its application to other areas of research and study, will be developed.
4. The underlying rationale associated with the "attitude sampling" instrument which is based upon a "forced-choice," "rank-ordering" theory, and its importance to the proposed methodology, will be shown.
5. The methods of procuring content and the procedures of administration of the data gathering instrument will be defined and discussed.
6. The development of an efficient, simply applied, statistical technique composed of trend analysis, and the analysis of variance, single classification, for treatment of the enumerative data and those data gathered by the attitude sampling instrument, will be discussed and

demonstrated.

7. The proper statistical interpretation of the findings as a result of the treatment of the respective enumerative and attitudinal data will be shown and explained.
8. The various theoretical aspects necessary to the development of the proposed methodology will be demonstrated throughout by means of applied examples and other types of practical illustrations.
9. The flexibility of the methodology will be illustrated by means of application to an actual segment of the student activities program of Wayne State University.

Basic Assumptions

Although the general purpose and scope of the proposed methodology might leave the impression of being quite broad and extensive, relatively few basic assumptions are necessary to insure its successful application. Naturally, there are certain common assumptions made in all types of research. For example, it is assumed that those persons delegated the task of applying the methodology to a given problem area are qualified in the matter of background, judgment, representativeness, and general capability to carry out the study in a reliable fashion. These factors need not be specifically stated, but are assumed as would be such qualities as integrity, good character, and honest purpose or intent.

With these facts in mind, the following basic assumptions are stated as those necessary to the success of the particular methodology proposed in this study:

1. The judgments, opinions, and attitudes of the student body, faculty, and administration, concerning the various segments, and total program, of student activities are important in any decision concerning need, scope, implementation, and operation of such programs.
2. It is possible to procure student, faculty, and administration judgments, opinions, and attitudes relative to particular problem areas, or general areas under study, in the student activities program.
3. The office or agency commissioning the study of a particular area of the activities program commands sufficient respect to aid the investigating personnel in the matter of securing the cooperation of the institution's community population in giving requested information and general help.
4. The investigating personnel accepts the assignment willingly and in good faith, with full knowledge of the responsibility, time, and effort necessary to the solution of the problem involved and the completion of the study of the area under consideration.
5. The methodology is a tool which can only secure relevant and representative information deemed necessary by the investigatory personnel as a basis for its recommendations to the commissioning agency, and the responsibility for final decisions concerning the area under study rests with the commissioning agency.

Although it has not been directly stated, it should be pointed out that the proposed methodology is indirectly based upon, and contains only standard acceptable statistical techniques and procedures, with allowances for the fact that any predictions or recommendations made as a result of application of the methodology are subject to the limitations imposed by the employed procedures.

A further possible limiting factor of the proposed methodology is that associated with the possible lack of established objectives for the program area under investigation. Under such conditions, lack of criteria upon which to base judgments of worth or achievement, presents a definite barrier to extensive recommendations by the investigatory personnel. However, if such a condition prevails much of the difficulty can be overcome, and the methodology can still be successfully applied, providing the investigatory personnel takes note of these discrepancies in their initial deliberations concerning the problem area and attempts to discover possible objectives from evidence rendered by available attitudinal and enumerative data.

Although the problem has now been generally introduced, its orientation in regard to already existing literature has not been touched upon. This phase of the treatment is covered in the next chapter which deals with the investigation and discussion of related literature in the area of methods of evaluating student activities programs.

CHAPTER II
RELATED RESEARCH
Related Studies

The student activities programs of institutions of higher learning have now attained such stature and importance in the total education of the individual student that general subjective judgment concerning such questions as worth, effectiveness, need, scope, operation, and implementation of segments or events composing such programs, no longer serves as a sufficient means of evaluation. To be sure, comparatively subjective methods of evaluation are still being employed in the activities area of many American colleges and universities, but in more recent years a general effort has been directed toward the development and application of more scientific and objective methods of evaluation in the majority of institutions throughout the nation. A rather exhaustive search of the literature shows that in recent years the question of evaluation has received more attention than any other problem in student activities. Despite this extensive effort it must be reported that results obtained have not been conclusive.

In an effort to improve evaluation of student personnel services, Dressel has offered the following suggestions:

1. Start with an all-institutional statement of objectives.
2. Assign responsibility for the various objectives to the appropriate parts of the educational program.

3. Keep a wide range of objectives in mind.
4. Do not lose sight of knowledge and critical thinking as outcomes of the activities of personnel services.
5. Look for possible inadequacies in tests and devices in common use.
6. Be slow to replace long-term goals by immediate criteria without critical examination of the matter.
7. Lay out a master plan for evaluation so that, in the enthusiasm for one type of evaluation or one objective, its relative importance in a total evaluation program is not overlooked.
8. Seek advice on experimental design and associated statistical treatment.
9. Involve as many personnel workers as possible in an evaluation study.¹

These would appear to be sound considerations in the improvement of evaluational methods applied to any type of program or operation associated with the educational program of an institution of higher learning.

Schmidt suggests that the most meaningful and efficient method of evaluating an activities program is through self-evaluation by the students, supplemented by evaluations of program sponsors.² Although many of Schmidt's suggestions are good, the one glaring

¹Paul L. Dressel, "Personnel Services in High Schools and Colleges," Occupations, 29 (February, 1951), p. 337.

²L. G. Schmidt, "College Evaluates Its Activity Program," Personnel and Guidance Journal, 32 (November, 1953), pp. 155-56.

weakness of his proposed plan is that those individuals who have the most at stake, that is the membership and the program sponsors, are asked to evaluate their own program objectively without assistance from any outside faction or agency. Such efforts frequently lead to unrealistic and biased findings, which in turn contribute little or nothing to the improvement of the organization or program involved.

Crum states in regard to evaluating high school activities programs that: "Evaluation is a continuous process to be done at frequent intervals."³ He further adds that each activity should evaluate its own program, and recommends that parents, teachers and students should view their accomplishments and failures cooperatively through group evaluation discussions, sponsors and student self-evaluation check lists, rating scales, observation and outside evaluation criticism, and any other methods that might help improve individual activities. It is Crum's belief that to be consistent with a philosophy of learning, all of the experiences of the individual in all activities must be taken into consideration. It must be recognized that the student is what he is at the present moment because of the interaction of experiences and the accumulated effect they have on the individual. Any attempt to relate a specific attitude to a specific activity is a fallacious act. Attention must be focused on the student rather than on the program.

Crum further suggests that certain evaluating devices be used to determine whether the activities program has been successful in

³Lewis R. Crum, "Evaluation of An Activities Program," School Activities, 26 (April, 1955), pp. 243-47.

attaining its original objectives; the devices are: personality tests, attitude tests, interest inventory tests, rating scales, anecdotal records, observations, check lists, sociograms, case studies, and questionnaires.

Basically, the method of evaluation suggested by Crum resolves itself into a listing of, first, value judgment criteria for program evaluation, and, secondly, a listing of many evaluational devices that may be used to measure the effectiveness of specific pupil and school objectives. As to how, or in what order, these devices might be employed Crum does not indicate, and in so doing considerably weakens his approach to the problem.

As part of a five-year evaluation of education at Princeton, Hare sampled alumni who had participated in four particular activities that, according to pilot study findings, would enable the respondent to describe more easily some of the characteristics of undergraduate experience that those activities contributed to college life and to later occupations.⁴ The study, based upon alumni questionnaires, focused upon the testing of two hypotheses: (1) extra-curriculum activities have educational values, and (2) the effects of participation on members is different for different activities.

Although Hare's findings supported the hypotheses, the methodology and the limitations imposed upon it restricted its application and possibilities. Since the methodology is one that is cumbersome

⁴A. Paul Hare, "An Evaluation of Extra-curriculum Activities," School Review, 63 (March, 1955), pp. 164-68.

to apply even in a limited area, its use in the evaluation of a broader or total program would be most difficult if not impossible.

Benerd claims that evaluation is the weakest part of the co-curricular programs of education.⁵ She defines the educational objective of a co-curricular program as, ". . . to provide for the pupils the conditions which tend to make pupils integrated, well-adjusted participants in constructive social activity."⁶ She further observes that if the school curriculum is going to meet this objective, each school must evaluate the activity program provided for the schools.

The evaluation of a program should be based upon the following questions:

1. Do the students receive instructions and practice in sharing responsibility?
2. Do they have opportunities to deal with tensions that arise?
3. Do they have a part in planning the discussion activities of the group meetings?
4. Is the over-social pupil kept from over doing?
5. Is the unsocial pupil who is in need of the influence of a club encouraged to find the group in which he can be at ease?

⁵ Gladys Benerd, "How Can We Evaluate the Co-curricular Program," National Association of Secondary School Principals Bulletin, 37 (November, 1953), pp. 61-2.

⁶ Clark William Trow, "How Shall We Teach Ethics," The School Review (December, 1951), pp. 519-23, as quoted in Benerd, pp. 61-2.

Benerd further feels that administrators can be of service to both faculty and pupils by helping to evaluate the co-curricular program. A convenient measuring instrument that might be used is M. E. Herriott's scale for judging a junior high school.⁷ The scale is divided into eight parts: (a) objectives; (b) instructional program; (c) student body organization; (d) teachers; (e) guidance and counseling; (f) service units; (g) administration; (h) the school plant. In evaluating the activities program of an institution, only those questions that would directly apply to the area would be selected from the scale to carry out the investigation. Benerd concludes her treatment of the subject by stating that Herriott's scale could readily be applied to any level of education, namely, elementary, secondary, and college educational programs.

Probably the main weakness of the methodology suggested by Benerd lies in the fact that it is directed toward the faculty and administration and therefore is devoid of student opinion and evaluation concerning the activities program. The five questions recommended as a basic part of the evaluational procedure are almost naive, and although the Herriott scale possesses some merit, the fact that it is to be employed only by administrators decidedly weakens its possibility of yielding unbiased information.

Hearn suggests some specific techniques which might be used

⁷Cooperative Study of Secondary School Standards, "Pupil Activity Program," The Study (1950 Edition, Washington, D. C.), pp. 38-48.

in the evaluation of school activities programs.⁸ Use of any one of these devices should prove helpful, but, as he further suggests, a more accurate picture can be gained by using several different criteria, such as:

1. The Check List

Cooperative Study of Secondary School Standards
Check List, section dealing with student activities.⁹

Schools employing these criteria must base evaluation on expressed purposes and objectives of the particular institution. This emphasizes the importance of the school's written statement of general and specific purposes, aims, and objectives, and as such, constitutes an essential criterion. The particular instrument suggested for use is of forced-choice form, and its results can be expressed in scores for purposes of comparison. Specific aspects of the activities program for which criteria have been developed are general organization, pupil participation in school government, home room, assemblies, publications, music, drama, speech, social activities, physical education, school clubs, and finance.

2. The Opinion Poll

⁸Arthur G. Hearn, "Evaluating the School Activity Program," School Activities, 23 (February, 1952), pp. 179-80.

⁹American Council on Education, Evaluative Criteria (Washington, D. C.: 1950).

This type of investigation is based upon two premises: first, the effectiveness of a program depends upon the attitudes of all participants, that is, students, faculty, and administration; secondly, a systematic effort to appraise these attitudes is necessary. The unsigned questionnaire is the instrument suggested for gathering information concerning scope, needs, interests, and abilities.

3. Behavioral Changes of Pupils

Extensive use of school records concerning improved attendance, scholarship, participation, and social behavior.

Although this methodology is proposed for the evaluation of a high school program, with certain modifications it could be adapted to a college or university program evaluation. Probably the greatest limitation of the suggested procedures and criteria is that of attempting to isolate and examine the many possible variables discussed by Hearn, and the lack of a definite procedure for administering the various phases of the proposed methodology.

Brailey's study, dealing with student personnel services in certain urban universities, is based upon one of the four critical elements set forth in the brochure, "The Personnel Point of View," 1949, American Council on Education.¹⁰ Specifically, Brailey's thesis deals with the evaluation of student personnel services in six universities. The sole basis of the evaluation is student

¹⁰Lester G. Brailey, The Effectiveness of Student Personnel Services in Certain Urban Universities (University of Pittsburgh, Doctoral Dissertation, 1952).

reaction to the services which was obtained by a sixty-item objective inventory. The universities selected for study were closely comparable except for the administrative organization of the respective personnel programs. In this respect they were dissimilar. Three of them had highly centralized organizations under a single administrative head. The other three were characterized by decentralization, with a number of officers participating in the administration on the same level of authority.

Brailey wanted to discover whether, as indicated by the response inventories, students in highly centralized schools reacted more favorable to personnel services than did students in the decentralized universities. A sample of approximately 200 respondents was procured from each school by distributing the inventory in selected classrooms. The adequacy of the sample was strengthened by limiting the population to "Liberal Arts" students in the Sophomore, Junior, and Senior classes of each university.

Administration of the data-gathering instrument was carried out through a personnel administrator in each university, who besides furnishing information about the institution, also arranged classroom distribution, collection, and return of the instruments to Brailey. A suggested plan of distribution was followed, and there were no special instructions for respondents other than the introductory remarks at the head of each inventory. Inventories were tallied by simple frequency according to place of residence, class, and sex. In most cases, only total results were used for interpretation, and in order to facilitate comparisons the objective data were converted from frequencies to percentages.

Students were asked to respond to each item by checking a "yes" if favorably impressed, a "no" if unfavorably impressed and a "?" if they felt they had insufficient information or experience to answer positively or negatively. The schools with higher percentages of "yes" responses were considered to have a more favorable student reaction. Items which were not answered at all and those checked "?" were lumped together, on the assumption that both indicated insufficient evidence to form a judgment.

Responses were presented in tabular form for each service, and through application of the t-test for statistically significant differences of per cents it was established that the "yes" responses of the centralized and decentralized universities were significantly different, in favor of the centralized program.

Brailey points out that there are many limitations to his proposed methodology, and recognizes the fact that such a system does not permit full consideration of such factors as budget, "human element," personal influences, and other factors that might prove basic to any claims for superiority of a particular type of institution. Realizing these limitations, Brailey suggests that the experiences and findings relative to his methodological procedures might well be used as a starting point for further study and development in the area of student activities, student personnel, and other educational program evaluation.

A study by Klopff undertakes to develop a program of evaluative criteria for the administration of student activities in

higher education.¹¹ The study deals with one institution, the University of Wisconsin. Included in the report of the study is a proposal of eleven basic assumptions concerning student activities, a list of four general rules for professional organization and services, and a presentation of three basic guides for policies concerning student activities. Beyond this the report contributes little to the general area of a methodological approach to student activities program evaluation.

In 1950, Olson, in reviewing what had been done in student program evaluation, was surprised to discover how little was actually known about it.¹² Although many people and many studies were concerned with evaluating counseling services, little had been done concerning the specific problem of judging the effectiveness of a school activities program.

Taking the existing facts into consideration, Olson suggests that the areas to be considered in any evaluation of an activities program are administrative, student body, union officers and workers, individual projects for the union and student body, and school-wide projects. Data pertaining to these areas should be obtained by sending questionnaires to all segments of the university, and, in situations where possible, direct interviews should be employed. Reports and evaluations by participants of ongoing events, both pre-evaluation and post-evaluation, are

¹¹Gordon J. Klopff, The Development of a Program and Evaluative Criteria for the Administration of Student Activities in Higher Education (University of Wisconsin, Doctoral Dissertation, August, 1950).

¹²Dorothy Ann Olson, "Student Program Evaluation," Recreation, 43 (March, 1950), pp. 582-84.

most important. Personnel then must be alert to use such information, and be prepared to put into effect recommendations based upon reliable findings.

Olson's criteria of the evaluation procedure are of a general nature and are embodied in the form of five questions:

1. Is the program, so far as possible, a student organized, administered, and supervised program?
2. Does the program embrace the interests of the entire student body?
3. Are activities encouraged according to accepted social standards?
4. Is there effective integration of the developing individual?
5. Are past experiences evaluated by participants, administrators, and supervisors?

Although Olson suggested many pertinent and important ideas concerning program evaluation, they were presented in more of a framework of proposal and suggestion than as a concrete methodological approach to student program evaluation, and as such serves merely the purpose of stimulating thought, and possibly creating greater awareness of the need for further study in the area of student activities program evaluation.

Hardaway, the Acting Director of Research at Indiana State Teacher College in 1947, conducted a study of extra-curricular activities at the school during the Winter term.¹³ This study,

¹³ Charles Hardaway, "Study of Extra-curricular Activities at ISTC," Teachers College Journal, 19 (November, 1947), pp. 22-31.

a survey type, was conducted to determine the extent of participation in extra-curricular activities by the undergraduate student body, and to determine possible correlation between participation in extra-curricular activities and scholarship achievement. All veterans were excluded from the survey in as much as the majority of them had been out of school for a two or three year period and thus would not present a true picture of the situation under study. For the same reason all students over the age of twenty-three years were also excluded from the study. As a result, a total of 639 students were included in the survey.

The first phase of the study was a survey of all possible opportunities available on campus for participation by the students in extra-curricular activities. This survey included sororities, fraternities, clubs, athletics, and others, plus the number of students participating in each. The second part of the study, dealing with the relationship between participation and scholarship achievement, was successfully applied to the situation, but the findings and results were termed "inconclusive" by Hardaway.

Obviously this study was little more than a mild survey of conditions at ISTC, and has little to recommend it as a worthy contribution to the matter of developing good evaluative methodology and procedure.

In 1940 Trump and Willett, acting through the Committee on Curriculum Trends of the North Central Association, conducted an evaluation study of some of the procedures in the organization and administration of extra-class activities in the public high

schools of the North Central Association.¹⁴

Questionnaires were sent to 1,453 schools of all sizes and types in twenty states served by the Association. Replies were received and tabulated from 904, or nearly two thirds of the original group.

In addition to this general study, the programs of extra-class activities in five selected schools were studied more intensively in an effort to secure additional data and to try out techniques which might be used in other schools. The schools in these studies represented a variety of types which included a large metropolitan high school, a school in a relatively homogeneous suburban residential community, a mixed suburban community, a highly industrial community with considerable foreign population, and a small school in a rural community. While it was obviously impossible to secure a cross-section of the population with such a limited number of schools, the data did reveal trends that had general implications.

The general technique used in making the evaluation of extra-curricular activities was that of assembling from the writings of educational authorities some general principles governing the organization and administration of such activities and then to observe practices in the schools in relation to these generally accepted principles.

¹⁴J. I. Trump and G. W. Willett, "Evaluation of Extra-Curricular Activities in North Central Association High Schools," North Central Association Quarterly, 16 (October, 1941), pp. 196-207.

Principles covering the program of activities, administrative relationship, administrative procedure, financial requirements, and evaluation of activities programs were set forth as basic criteria. Upon compilation of the data many definite conclusions were drawn regarding these areas, and a ten-point program was proposed in order that activities programs might become more effective in the total educational program.

The apparent weakness of this methodological procedure lies in the fact that it was conducted only at the administrative level. Chief respondents were the high school principals, or their designees, while the respective faculties and student bodies had little or no voice in giving answers to the items in the questionnaire. Consequently, the study contains a definite probability of bias in response, and any resulting conclusions drawn from the data will be similarly affected.

Anderson points out that such authorities as Koos and Rugg contended that the outcomes of participation had been largely assumed and, at that time (1926), there was a definite lack of quantitative evidence to prove that there were many, or for that matter, any, benefits derived from out-of-class activities.¹⁵

The purpose of Anderson's study was to make an evaluation of the extra-curricular program by obtaining the judgments and opinions of students who were about to graduate from secondary

¹⁵John Dickson Anderson, An Evaluation of Participation in Extra-Curricular Activities by Secondary School Students (University of Pittsburgh, Doctoral Dissertation, 1941).

school. The evaluation deals with (1) amount of participation; (2) benefits to be gained through participation in various activities; (3) relationship of appraisal to certain factors; (4) continuing interests in related activities; and (5) suggestions for improving the extra-curricular program.

The questionnaire method was employed to obtain information from 546 boys and 586 girls from seven high schools in Pittsburgh, Pennsylvania. The survey was conducted in the Spring of 1940 just before the respondents had completed their school training. Well-developed programs existed in the schools that were chosen, and there was a good cross-section of school population represented. The schools were of large and small enrollments, and located in various types of communities, namely, industrial, residential, and rural.

The extra-curricular program was not evaluated as a whole but an appraisal was made of each of the twelve divisions or departments into which the extra-curriculum had been analyzed. The values of participation were listed, 29 in number, and an attempt was made to distinguish between the values which were more immediate or temporary in their realization and those outcomes which tend to carry over into adult life. The students were requested to evaluate the contributions made to each of the outcomes placed in these categories by the departments of activities in which they had engaged.

Whenever possible the responses were considered with reference to socio-economic status, intelligence, scholarship, and sex

of the respondents. Classification of the students with reference to the first of these factors was based on scores made on the Heilman Revision of the Chapman-Sims Socio-Economic Scale.¹⁶ Intelligence quotients and ranks in scholarship were obtained from the permanent records of the respondents.

The appraisal ratings checked by the students in evaluating the influence of an activity upon each of the outcomes of participation were weighted as follows: great contributions, 2; some contribution, 1; no contribution, 0. These weights made possible the computation of appraisal averages which were serviceable in making comparisons. An appraisal average was determined as the quotient of the sum of the products of the appraisal frequencies multiplied by the weights and divided by the number of students evaluating a certain activity. As an example, 521 students credited athletics with making great contribution to training in observing rules and regulations, 90 with some contribution, and 18 checked athletics as making no contribution. In this instance the average appraisal rating was 1.8.

Students also made a "Self-Estimate of Amount of Participation" on the basis of "too much," "about right," "not enough," and listed reasons for participation such as: (a) wanted to be with friends; (b) wanted to help the school; (c) urged by other students; and (d) participated to overcome handicaps. These are but a few of the reasons listed, and from these data and through

¹⁶J. D. Heilman, "A Revision of the Chapman-Sims Socio-Economic Scale," Journal of Educational Research, 13 (1928), pp. 117-126.

comparing differences of appraisals according to socio-economic status, sex, and other classifications, recommendations were made for better activities programs in schools of the types studied.

This study made a very substantial contribution to the development of better methodological and evaluative procedures for studying student activities programs. Although it is definitely lacking in modern statistical technique, it should be pointed out that at the time of this study, 1940, such techniques were not widely known nor had they been extensively adapted to educational problems and program evaluation. This study did much to orientate thinking concerning program evaluation in the direction of the statistical approach to that particular area.

Houston noted that extra-curricular activities in most high schools were being challenged and seriously questioned from an educational standpoint.¹⁷ Charges that eligibility requirements, limited participation, sponsor domination, lack of sponsor guidance, the use of childish motivators such as the serving of refreshments, meetings without challenging programs, and other such questionable practices were alleged to render club activities, for example, ineffective in an educational sense.

Houston pointed out that these charges, though not necessarily true, could be avoided only by careful evaluation of the organization's activities. Further, it was generally recognized,

¹⁷Victor M. Houston, "Self-Evaluation of Extra-curricular Organization," School Activities, 12 (September, 1940), pp. 3-4.

especially in out-of-school life, that self-evaluation is probably productive of greater growth than evaluation imposed by an agency not in close touch with purposes and programs of the organization being evaluated.

With the foregoing as background information, Houston suggested that each organization evaluate itself, and further, that such evaluation would be most effective if it were a continuous process in which each individual member participated. Houston proposed that there were many points to be considered in such a plan of self-evaluation, and suggested a list of questions as a guide. The questions were distributed over five general categories, namely: (a) purpose; (b) activities; (c) membership; (d) participation and control; and (e) meetings, of the organization being evaluated.

Although Houston's methodology encourages student and sponsor activity in evaluation, it actually prevents the administration from lending its support to a program which is an integral part of the educational program of the school. Another limitation is that of too much subjective judgment by those persons with heavily vested interests in the organization undergoing evaluational investigation. Under such a plan, it is entirely possible for a given organization to ignore completely its responsibility to apply sound principles of education, not to mention the possibility of its ignoring the total educational program of the particular school involved.

Briggs carried out two separate studies concerning evalua-

tion of extra-curricular activities in teachers colleges. The first study was a survey of participation by the students.¹⁸ Most of this information was gathered from administrative officers and school publications, and ultimately resolved itself into a compilation of frequencies concerning the number of students participating in the various activities that composed the extra-curricular program of the school involved. This study aroused Briggs' curiosity and led to the second study which was concerned with the influences that had a part in the student initially selecting, and ultimately evaluating the extra-curricular activities in which he participated.¹⁹

The second study, like the first, was a survey type of evaluation. The data were gathered by personal interviews with 3,939 students in 19 state teachers colleges in Illinois, Kentucky, Missouri, Arkansas, Nebraska, Kansas, Oklahoma, and Texas. Blank interviewing forms with a list of all extra-curricular activities found in teachers colleges were placed in the hands of the interviewers, and upon gaining the desired information from the respondents, the interview schedules were forwarded to Briggs.

The student being interviewed indicated which semester of which year, from his freshman year on to the date of the interview,

¹⁸ Eugene S. Briggs, The Preparation of Secondary Teachers in Teachers Colleges for Guiding and Directing Extra-Class Activities (Phillips University, Doctoral Dissertation, Enid, Oklahoma, 1935).

¹⁹ Eugene S. Briggs, "Evaluation of Extra-Curricular Activities by Teachers College Students," School and Society, 48 (October 22, 1938), pp. 539-40.

he participated in the activities of his choice. An approximately equal number of students, about 965, were selected at random from each of the four college years for the interview.

In an attempt to secure a finer degree of evaluation of extra-curricular activities, each student was asked to rate, on a five-point scale, the relative value to him of the extra-curricular work he had done in a particular area as compared to the amount of work he might have accomplished in that field with the same amount of time expended in curricular work. None of the response sheets were signed.

The combined studies might have yielded adequate enumerative and attitudinal data. However, lack of proper statistical analysis and evaluation imposed decided limitations upon the findings. Actually, the report of the findings and interpretations of the data gives little more than a simple survey summary of the area under examination. Once again it should be pointed out that at the time these studies were made comparatively little was known about the possible applications of such statistical techniques as analysis of variance and co-variance and the investigator's effort cannot be criticized on this count.

One of the early studies of student activities programs was carried out by Brown in 1933 and 1934.²⁰ This was a survey type of study which began early in 1933 and culminated in the latter part of 1934. Information was obtained through a questionnaire,

²⁰Clara M. Brown, "Social Activities Survey," Journal of Higher Education, 8 (May, 1937), pp. 257-64.

distributed to all students in the Fall 1933-34 directory of the University of Minnesota. The questionnaires were accompanied by a letter from the President in which he explained the purpose of the investigation and urged students to fill out and return the questionnaire. Returns were received from approximately twenty-five hundred students, about 27% of the student body.

The questionnaire itself was set up in three sections: the first section was devoted to collecting all possible information about the social activities of the student, certain socio-economic data that might help to explain the individual student's social behavior, and, finally, his comments upon social life at the university; the second section was comprised of two series of statements dealing with the kind of social contacts that students enjoyed and what they considered to be acceptable social behavior; the third section asked for information regarding the factors each felt would make for his happiness, the obstacles he believed stood in the way, and his general philosophy of life.

Only the findings collected by the first section of the questionnaire comprised this study. The second section furnished data for developing scales of social preference and social behavior, while the data collected from the third section was analyzed by a psychiatrist, and the findings were published as an article in a professional journal.

Brown points out that the important part of the survey methodology which was employed was not that of being able to discover what conditions existed in 1934, but rather what was going to happen as a result of the knowledge gained. It is

worthy of note that many student groups, as a result of the findings yielded by the survey type methodology, began making a more intelligent attack on the problem of providing a better social life for the bulk of the student body. As a further development the university administration began giving the matter of a student activities program more serious study. Also, off-campus groups interested in the welfare of the institution attempted to develop more uniformly coordinated programs in cooperation with university agencies concerned with the extra-curricular area of the educational program.

Summary of the Related Research

Examination of the related literature of the past few decades reveals the fact that in the more recent years of the period noticeable changes have occurred in the design and technique of evaluation studies made of educational programs. The most apparent and significant change is the broader scope of these evaluations, which are now designed to include related measurements of a comprehensive range of the objectives of the program under examination. Probably two basic reasons may be cited for this change. First, as measurement techniques have improved, or as they are more available in a wider variety, it becomes possible to measure larger and more complex aspects of behavior, and more important in this case, to judge programs in terms of more complex aspects of behavior or criteria. Second, it is evident that the prevalent conception of education has changed from one that was predominantly concerned with the development of specific types of

subject-matter achievement to one concerned also with the related aspects of personal and social development. Psychologically, it might well be said that stress on interaction now supplements that which is placed on reaction. As a result of these facts, broader programs of evaluation have come into existence.

To be sure, broader programs of evaluation have come into existence, but a somewhat closer examination of the literature reveals that instruments for gathering data and general design of methodological procedure for the purpose of program evaluation needs further and more adequate appraisal. Experimental designs and controls as well as criteria for evaluative judgment, scales, and questionnaires, suggested in many of the related studies are quite elaborate. In the matter of establishing the validity and reliability of data-gathering instruments, and for that matter, the associated procedures, there is a certain evanescent quality of unproved value judgment being employed as criteria. Naturally, such a condition leaves much to be desired, and at the same time provides an area of almost infinite possibility for further research and study. Many of the proposed methodological procedures and recommended data-gathering instruments found in the related literature are so elaborate, time consuming, and costly that they cannot be easily adapted to the average school situation. Efforts toward devising simple and inexpensive means of program evaluation, available to schools of all levels and financial means, would seem much more commendable than those devised on the basis of a multitude of expensive stand-

ardized instruments being dispensed to potential respondents for investigation of the "whole" individual.

On the positive side, follow-up studies of a reasonably comprehensive nature have been reported, and an attempt has been made to determine not only the immediate and short-range effects of activities experiences, but also the long-range effects. Obviously the nature and scope of the follow-up studies could be improved in terms of established designs and criteria, but at least a start has been made in this direction. Designs of evaluation to determine the general worth of an activities program based upon the growth or change in the individual participants undoubtedly should receive more attention. For the most part, the program evaluation studies of the past have been based upon data gathered from groups and organizations. Perhaps the study of changes in the activities program participant as compared with the non-participant holds more promise as a better method of activities program evaluation than does the more often utilized group survey technique.

As a result of examining the field of related research, it becomes obvious that certain "needs" for program evaluation methodologies are poignantly in evidence: (1) there is a definite need for the formulation of a systematic method of attack upon several aspects of student activities program evaluation; (2) procedures are needed for continuous reformulation and redefinition of activities program objectives; (3) a methodology capable of validly appraising with a minimum of duplication the need, scope,

operation, and implementation of an activities program segment, and ultimately the total program, is definitely needed; (4) a methodology embodying the necessary analytical and statistical techniques for economically measuring and efficiently analyzing enumerative and attitudinal data is called for, and, finally (5) procedures are needed to determine the best ways of integrating and interpreting the results of attempted program evaluation. The proposed methodology of this study attempts to meet the five aforementioned "needs" of program evaluation. A summary of the proposed methodology is presented in Chapter V, and a thorough explanation and general development of it is given in Chapter III. It is enough to say here that the proposed methodology of this study is not directly patterned after any of those found in the related literature, but is of such a nature that it directly or indirectly touches upon certain phases of the majority of them.

CHAPTER III

DESCRIPTION OF THE PROPOSED METHODOLOGY

Underlying Rationale and Illustrative Applications

The uniqueness of the proposed methodology, if it can claim such distinction, lies in the fact that it is primarily patterned after, and guided by, the principles and techniques of the science of statistics.

Rosander has pointed out that to many persons the term "statistics" refers to numerical data, and that such items as baseball statistics, income statistics, employment statistics, market statistics, and public opinion statistics are found in this category.¹ He also takes into account that many other persons think of statistics as tools or methods to be used in collecting, organizing and analyzing numerical data. This approach emphasizes the computation of various values or measures such as an arithmetic mean, an index number, or a correlation. In conclusion, Rosander explains that during the past twenty-five years the field of statistics has undergone a number of basic changes. New principles have been formulated, new techniques have been developed, new concepts have been introduced, and, in general, statistics has developed to such an extent that it is now legitimately a science in its own right consisting of a set of

¹A. C. Rosander, Elementary Principles of Statistics (New York: D. Van Nostrand Co., Inc., 1951), Chapter I.

unique principles and techniques.

Great care was taken to pattern the proposed methodology after the "principle-technique" concept, thus avoiding certain weaknesses found in other methodologies. To further clarify, many of the methodologies found in the related literature emphasize the use of facts, especially numerical data, to facilitate evaluation. There is a tendency to oversimplify the collection, interpretation, and use of facts. A common fallacy of this approach is the belief that "facts" can be easily identified, that the meaning of these facts is readily discernible, and that this meaning is the same for all people.

Actually, such an approach is fallacious on at least three accounts. First, "facts" are affected by, and the products of, the process used to obtain them. Second, "facts" may be distorted by the personnel who collect, select, and publish them. Third, the interpretation of the "facts" depends upon the background and experience of the person considering them. When the methodology places emphasis upon the use of numerical facts without consideration of the methods of collection and interpretation, then such practice results in inefficiency and, frequently, support of previously held biases. Other methodologies found in the related literature were devised as methods for calculating comparative measures or indices. Actually, these methods infer that they are "tools" that can be applied whenever the need arises. Frequently, this allows the research personnel to wait until after the data has been accumulated before applying the suggested criteria and treatments prescribed by the methodology. Basic dangers

inherent in this approach are: the data may not be from a representative source; there may be an inadequate amount of data; and finally, the data may be ambiguous, or even biased to an unknown degree. No amount of adjustment, manipulation, or analysis by the research personnel can overcome these deficiencies. It is becoming increasingly apparent that the planning and collection of data are not merely questions of common sense that involve nonmathematical problems which research personnel can ignore.

The methodology proposed here takes into account the shortcomings of alternative types of evaluational methods, and at the same time answers many other questions by applying the statistical principles dealing with the concept of probability in the making of estimates and inferences. Thus, the methodology may be applied to a problem regardless of whether it is one involving "pure" research or one involving practical operations. Since these principles deal mainly with the quantitative aspects of objects, that is, measurements or enumerations, it should be pointed out that the term "quantitative," as used here, is broadly interpreted and includes qualitative characteristics that have been quantified.

As a result of basing the proposed methodology upon the statistical principles of probability, sampling, estimation, and inference, at least three general values are incorporated. First, a statistical principle may be a guide to immediate action concerning plans and procedures, and a possible indicator of final action necessary for solving the problem. Second, these principles have wide applicability to a variety of conditions; though

specific techniques may have to be developed, the basic principles are still the same. Third, these principles are valuable to use as a guide in the initial design of inquiries. In essence, the proposed methodology is technically sound because it is forced to meet the various conditions or specifications set up by the incorporated statistical principles concerned with probability, sampling, estimation, and inference.

The procedural steps in the methodology proposed here might be considered to be divided into four general phases: (1) procedures of organization and orientation; (2) problem area analysis and gathering of data; (3) treatment of the data; and (4) procedures of decision-making and reporting. Derivation, definition, and clarification of the total methodology is carried out by analyzing the respective "Steps" of each of the general phases. However, before proceeding to the derivational and analytical development of the proposed methodology, it might be worthwhile to consider actual areas of possible application. This practical and illustrated approach should expedite the understanding of the derivations and definitions and provide more understanding of the general merit and possibilities of the methodology.

If the student activities program is considered to be a composite one, that is, made up of a wide variety of individual activities, which for purposes of easier identification might be termed "segments," and a study of the over-all program, or any one of its segments, is desired, application of the proposed methodology will yield reliable information from which definite conclusions may be drawn with a specified degree of confidence.

For example, such "segments" as student government, student council, fraternities and sororities, student unions, particular student organizations, general program structure, possible implementation of new forms of student governing agencies, regulations governing participation, fraternity housing, and pledge-rush procedures, to mention a few, may be studied and evaluated. In fact, any phase, type, or form of student activities may be studied by the proposed methodology, as long as that study bases its conclusions upon such enumerative data as: number of events, number of persons included, amount of money spent, and other similar enumerations, plus the most important item of all, attitudinal data which is to be procured from those constituencies of the general university population of faculty, students, and administrators, who are associated with the particular segment under study.

To illustrate, if "adequacy of fraternity housing" is being studied, the logical constituencies are fraternity members and pledges, faculty advisers, administrative officers, such as housing counselors, and in some cases where expenditure of institutional funds is indicated, university administrative officials of the higher echelons. Other examples could be cited, but since frequent recapitulations, summaries, practical examples, and explanations of relationships and general functionings will be found to compose the major part of the derivations and definitions of the "steps" there is ample opportunity provided for the reader to gain further general insight and facility in the understanding

and application of the proposed methodology.

Before proceeding with detailed descriptions of procedural steps, an overview of the complete methodology is presented here in outline form. It will be noted that the four general phases of the plan, which were referred to above, are designated as the four major divisions of the outline, i.e., A, B, C, and D, respectively.

Outline of Total Plan

- A. Procedures of Organization and Orientation.
 1. Designations, Definitions, and Appointments.
 2. Additional Appointments to Investigatory Group.
 3. Orienting Investigatory Personnel.
 4. Individual Investigations.
- B. Problem Area Analysis and Gathering of Data.
 1. Analyzing the Problem Area.
 2. Developing Methods of Collecting Attitudinal Data.
 3. Running a Pilot Study.
 4. Determining Size of Sample Needed.
 5. Administering Instruments for Gathering Data.
- C. Treatment of the Data.
 1. Scoring the Data-Gathering Instrument and Preparing Data for Analysis of Variance.
 2. Analyzing the Data, Intra-Stratum.
 3. Analyzing the Data, Inter-Strata.
 4. Trend Analysis of Enumerative Data.

D. Procedures of Reporting and Recommending.

1. Making Statistical Inferences Concerning Difference and Trend.
2. Preparing the Written Report.
3. Preparation for Making Oral Report.
4. Providing for Other Studies.

The succeeding sections of this chapter present detailed descriptions, and illustrative applications, of the specific procedural steps listed under each of the major divisions in the outline above.

A. Procedures of Organization and Orientation

This phase dealing with the procedures of organization and orientation is composed of four "Steps." These Steps, in general, deal with the responsibilities of the commissioning agency, the additional appointments of the original investigatory personnel, general orientation of the new appointees, and finally the responsibilities of individual members of the investigatory personnel in the matter of personal investigations for various types of information and data.

Step 1--Designations, Definitions, and Appointments.

The commissioning agency is basically responsible for two specific actions. The first action is that of designating and defining that area, or segment, of the activities program which is to be studied. The second action deals with the appointment of the individual, office, or group to carry out the investigation of the designated segment.

In the matter of designating and defining the segment to be studied, the commissioning agency must account for certain necessary elements. When designating the area of study, the agency must be constantly aware of precisely what segment of the activities program it wishes to have examined. For example, if the commissioning agency should designate "student government" as a problem area, when actually it was interested in studying "student council," the scope, direction, and consequent findings of the study would be decidedly different from what they might have been had the area been correctly designated as "student council."

In order that the investigation have clearly marked lines of pursuit, not only must care be taken in designating the problem area, but sufficient definition of certain elements of the study area must also be made by the commissioning agency. Fundamental to this "definition" phase is the institutional philosophy concerning the general activities program. The philosophy should indicate, in general terms, the aims and objectives of the activities program, some expression concerning the part of the total educational effort that is considered fulfilled by the activities program, and finally the university-wide constituencies responsible for said program.

For example, the student activities area of an university usually has at its head a director, or the office responsible for the over-all program. This office should have written evidence that contains, among other things, definite statements regarding the aims and objectives of the co-curricular program. At Wayne

State University, the Manual of Policies and Procedures Regulating Student Activities is such an instrument, and the office of the Director of Student Activities is responsible for the editing and printing of it.²

Statements concerning the role of the student activities program in connection with the total education of the individual, and the constituencies responsible for it, should be found in the files of those administrative bodies responsible for the general operation of the university's educational program. For example, at Wayne State University the University Council has made record of the fact that it considers student activities to be an integral part of the total educational program of the institution, and that this program should be student-faculty centered and operated.³ This action was subsequently approved by the Council of Deans and ultimately the President's Office to become a definitely stated part of the educational program of the institution.⁴

Once the philosophy of the general activities program has been considered, the remainder of "definition" is carried out by the process of delimitation. As an example, suppose the fraternity situation is to be studied. The rules of "designation"

²Wayne State University Student Activities, Manual of Policies and Procedures (Bulletin of the Division of Student Personnel, Annual Publication).

³Wayne State University Council, composed of 43 faculty representatives. Takes action on the majority of University policy and administration problems and procedures.

⁴Wayne State University Council of Deans, composed of 18 members. Makes top-level decisions, and is executive advisory board of the President.

would immediately demand that the statement "all fraternities," "social male fraternities," "professional male fraternities," "honorary fraternities," or some such descriptive terminology be included. To render the problem more specific, additional information of a delimiting nature should be included in the description of the problem area. In the present example, the commissioning agency might be interested in a "total survey of the fraternity situation," or "the pledge-rush procedures of the male fraternities," or possibly, "the educational values of fraternity membership." All such statements are good examples of additional information of a delimiting nature which greatly contribute to the further definition of the problem area. Through such designation and definition, investigatory personnel can more easily determine the constituencies involved in the particular area under study, decide upon the scope of the investigation, and gain direction in the matter of record-searching for enumerative data.

Step 2--Additional Appointments to Investigatory Group.

If an individual, or an office, is appointed by the commissioning agency, in the interest of efficiency, less work, and avoiding possible accusation of partiality, additional members may need to be appointed to form a larger study committee. The appointing of the additional personnel should be guided by the principle that all constituencies associated with the program segment under study should have some form of representation on the committee. Membership is gained through appointment by the individual, or the office, originally designated by the commissioning agency. It is the responsibility of this agency to appoint

those individuals as representatives who are responsible, thorough, logical, fair-minded, and interested in the improvement of the institution's activities program.

A very important part of the formation of the study committee is the number of members composing it. The most efficient committee size according to Benne and Muntyan is seven or eight persons, and in no case should the number exceed nine.⁵ On this basis, it is incumbent upon the appointing personnel to seek those persons for membership who might well represent more than one of the concerned constituencies. Of course, this fact depends upon the number of constituencies involved in the problem area. If the problem area is such that one person from each constituency is equitable representation, and further, the number of constituencies involved in seven or less, then the question of committee size is not a problem. In the case where a group is originally elected or appointed by the commissioning agency, the element of representation need be the only consideration. If the group feels that it is justly representative, and will not be confronted with the accusation of partiality, then no further appointments are necessary. On the other hand, if such is not the case, additional membership should be appointed for the same reasons that existed in the "individual" and "office" appointments.

For purposes of further clarification two examples will be cited. First, suppose the President's Office wishes to have a

⁵K. D. Benne and B. Muntyan, "Human Relations in Curriculum Change," The Nature of the Group (New York: The Dryden Press, 1952), Part III, Section A.

general survey study made of all social fraternities and sororities. Since this area is a segment of the student activities program of the university, the President's Office commissions the Office of the Dean of Students to conduct the investigation. In defining the problem area the President's Office has directed that the total fraternity and sorority segment be investigated, and a report of the findings plus any recommendations for improvement be made. Viewing the problem area according to the definition set forth by the commissioning agency, the Dean's Office, decides that those constituencies most affected by the study are fraternity and sorority pledges and members, faculty advisers of fraternities and sororities, and personnel of the Dean's Office associated with the area under study. More remotely affected is the potential membership which is composed of students of the freshman and sophomore classes.

Based upon this analysis, the Dean after carefully investigating the individuals to be involved, appoints the following personnel to the investigating committee: one representative from the inter-fraternity council; one representative from the pan-hellenic council; one each from the fraternity and the sorority faculty advisers; the adviser of the pan-hellenic council; the adviser of the inter-fraternity council; one representative from the freshman class board; and one from the sophomore class board. Thus, the investigatory committee is a representative body, prepared to investigate, in survey fashion, the total social fraternity and sorority program on campus.

As a second example, suppose that an agency similar to that of the University Council at Wayne State University, elects two of its own members to study the "University Student Council." The two members are informed by the commissioning agency that the study should investigate the total operation of the student council, and further that since the general student activities program is student-faculty centered, the investigation should include both of these constituencies.

Upon considering all of the factors involved, the two elected faculty members decide to take advantage of the option of appointing additional members to the investigating team. The following additional appointments are made: a representative from the faculty advisers of student council, the president and another member of the present student council, a recognized student leader from the student union governing group, and finally, a recent graduate who had been a member of student council, and had held leadership positions in other areas of the activities program during his or her undergraduate career. These appointments thus provide a representative committee established in accordance with the aims and objectives of the student activities program and the defined segment under study.

Step 2 (Additional Appointments to Investigatory Group) is thus designed to serve the purpose of providing a motivated, informed, and responsible investigatory personnel, which in turn contributes further to the probability of more valid and reliable findings being rendered by the proposed methodology.

Step 3--Orienting Investigatory Personnel.

It is the duty of the originally chosen individual, office, or group to amass and compile all factual information that might already be available at a reliable central source. This information plus a detailed definition of the problem area to be studied, accompanied by a tentative time schedule for completion of the study, should be prepared and presented to the additional personnel at the first meeting.

Care should be taken in defining the scope and elements of the problem area to parallel as closely as possible the "designation and definition" of the commissioning agency. Nothing, if possible, should be added or omitted in the translation of the commissioning agency's direction. Official memoranda, or other forms of written communication, that might have passed between the commissioning agency and the originally appointed personnel, can be utilized to great advantage at this point in clarifying and defining the problem area.

The source of the enumerative data and other factual information should be made known to the new appointees, and should be followed by a discussion and interpretation of these materials. There should be no question as to what elements or areas the facts and figures apply. Complete and unified understanding of the data is most essential to a solid foundation for the investigation. If during the course of discussion, it is discovered that information of this nature has been overlooked, inclusion of it at the next meeting, or immediately if possible, should be provided for, and adequate time allowed for discussion of the

same. During this period of orientation the complete outline of the methodology is discussed in conjunction with a tentative time schedule for completion of the investigation. Sub-committee structures may be considered at this time; however it should be pointed out that sub-committee structure is not essential to the successful use of the methodology.

Providing all of the foregoing has been successfully negotiated, a so-called "starting point" is now brought up for discussion. This is most easily resolved by the nature of the designated problem area. If the designation has been one of a "general survey" variety, a search should be made for the smallest, or most simply structured element of the segment to be studied. For example, in the study of the "student council" segment it might be wise to start with some such phase as the basic eligibility requirements for membership, and from there proceed to the representation of constituencies, and from there to the eventual survey of the total segment. In the case of a more delimited problem area, the "starting point" is still with a simply-structured element, and in an actual situation, does not present the problem associated with the larger areas due to an almost natural indication of the most poignant, and therefore initial, element to be studied.

The purpose of Step 3 (Orienting Investigating Personnel) is to further contribute to a more efficient investigation of a wider scope, yielding more reliable germane information about the segment being studied.

Step 4--Individual Investigations.

After the orientation period each individual member of the investigatory team undertakes a preliminary personal investigation of the problem area. The approach is that of amassing information of all forms from any source or constituency. Since a so-called "starting point" of the investigation has been mutually agreed upon prior to this individual effort, the committee member would be wise to collect information pertaining to that element first, and then proceed to enlarge his sphere of knowledge until he has covered, with a reasonable thoroughness, the total segment.

It would appear that the attitudes, enumerative data, proposed ideas, and other general information obtained by the individual from his constituency and any other area of his choosing might well bias his point of view. Actually, this is exactly what Step 4 is designed to do! Upon completing the preliminary investigation of any element, and ultimately the total segment, the individual investigator has become more familiar with the problem area, has formed certain opinions which he didn't have before, and thus is in a much better position to participate in, and contribute more fully to, the discussions pertaining to the area under study. In order to facilitate this individual investigation, each investigator should keep a personal file of the records, enumerative data, and general information that has resulted from the effort. All information should be recorded in at least note fashion, and as little as possible is entrusted to the individual's memory.

At first glance this procedure might appear to be tedious, and far too time consuming for the apparent value received. Actually, this need not be true at all. Most of the work in this preliminary inquiry can be carried on in a most informal fashion. Much can be learned, and later noted, from a casual conversation about the problem area with a group of associates from the constituency which the investigator represents. Other informal conversations with classroom associates, faculty members and administrators can furnish added information, and if the constituency is a group that has an office, enumerative data, regardless of bias, may be obtained from that office's files.

This step of the methodology should prepare a motivated, better-informed setting for carrying out the provisions of the next series of steps in a more reliable fashion than otherwise might have been possible.

B. Problem Area Analysis and Gathering of Data

The procedural "steps" associated with this phase of the methodology deal with problem area analysis and the gathering of attitudinal data. Thus, this phase contains information concerning the scientific analysis of the problem area, the possible methods and the suggested method of gathering attitudinal data, determining sample design, running a pilot study to establish criteria for determining an adequate sample size, determining sample size with a given confidence, and administering the attitudinal data-gathering instrument. Discussion of the second phase will be carried out by considering the derivations and definitions of the

five "steps" composing it.

Step 1--Analyzing the Problem Area.

This Step pertains to the procedures that are to be followed by the investigatory personnel during those meetings wherein the group is attempting to analyze the various elements and situations that compose the total problem area. This is a critically important stage in the total study. It is at this point that decisions are made as to what the substantive content of the investigation will be, and to what extent further information is needed from the constituencies relative to specific parts of the problem area.

A newly assembled group will probably have vague and varied expectancies as to the way the group and leader are going to operate. It is important then that the group establish workable procedures so that discussion may be started quickly in an atmosphere of security and confidence. The group leader should discuss early in these meetings such procedural matters as time limitations on topics as related to the size of the group, matters of procedure open to group decision as compared to those which must be followed, and those procedural matters left open for later revision by the group. No elaborate set of procedural rules should be adopted by the group at the beginning of the investigation. Rules of procedure should be reduced to a minimum and adopted by the group only after it sees the need for them. If this need vanishes, the group should feel perfectly free to change the rules that formerly applied.

The analytic procedures are prescribed and must be followed

for the successful operation of the methodology. At first this might appear to be invoking limitations, but the investigatory group soon will discover that the recommended procedures are easily followed and actually alleviate the process of decision-making. To add to the benefit of following the prescribed procedures of analysis, it should be noted that it is through this analysis that the format and content of the attitude-sampling instrument are derived.

The prescribed analysis is best described by presenting it first in outline form. A more detailed explanation of the outline will then be given.

1. Condition analysis.

- A. General description of the situation.
- B. What conditions, if any, might be "blocking" the most efficient functioning of the particular element or area under consideration?

2. Causal analysis.

- A. What might be causing the "blocking" condition?
- B. Most probable cause of the "block."

3. Action analysis.

- A. Possible courses of action that might counteract causal factors of the "blocking" conditions.
- B. Unchangeable factors affecting possible action.

4. Implementation analysis.

- A. Practicability of implementing suggested action.
- B. How to implement suggested action.

The "condition analysis" is in two parts: (1) the situation, and (2) the "blocks." The "situation" is given to the description of such things as the "setting" and the "elements" of the general condition. For example, suppose that in studying the general program segment of "student council" the committee is discussing the element of "student body voting in student council elections." For the sake of brevity, a minimum amount of description is presented here: The student council elections are held once a year, usually in the middle of May. Examination of the past three years shows that the election days were held on May 11, 1954, May 19, 1955, and May 15, 1956, respectively. The vote in 1954 was 851 out of a possible 9,327 eligibles; in 1955, 923 out of 9,613 eligibles; and in 1956, 893 out of a possible 9,756. The old type of marking ballot is employed, campaign speeches are not allowed on campus, limited space is provided on campus for posters, and each candidate is allotted a given portion of two columns of the campus newspaper.

The "block" analysis conjectures as to what "conditions" might be blocking the existence of a better situation. It is essential to note that the "blocks" are considered as evident conditions that might be rendering the situation less functional or operative. Continuing with the analysis of the example of "student body voting in student council elections," the "block" analysis would be carried out as follows: The group considers the "situation" description, and decides that the number of people voting is a small percentage of those who are eligible to

vote. Other aspects of the "situation" indicate the following facts as possible "blocks" to the condition of getting a greater number of students to vote: (1) indefinite days and dates for election day; (2) old form of ballot; (3) campaign speeches not allowed; and (4) limited publicity media. It should be noted that these possible blocking conditions are evident physical facts that the group feels might be causing difficulty.

The causal analysis is dichotomous and consists of: (1) possible causes, and (2) most probable causes. Under the category of "possible causes" the group lists all of those items that it feels might be contributory to the "blocking" condition. The "most probable causes" are found by further discussion and analysis of the "possible causes" list. To illustrate, the example of "student council voting" is utilized once again. Upon considering the four possible "blocking" conditions, the group might advance the following "possible causes": (1) the student council has been remiss in its duty of determining a fixed time for the annual election; (2) possible lack of finance forced the use of the old ballot form; (3) administrative officials are adverse to a free election campaign; (4) the advisers have not been alert to their responsibilities; (5) the student publications area is unfriendly to the student council. These are but a few of the many "possible causes" that might be advanced by the investigatory group.

The list of "possible causes" is then reduced to "most probable causes" by considering facts and information that had

been previously collected through personal investigation and those presented during the orientation period. Those items that are left in doubt, and those not unanimously agreed upon, are held in abeyance as possible material for the questionnaire. When the list of "most probable causes" is finally compiled it is further treated under "action analysis."

The action analysis is applied by considering: (1) possible courses of action, and (2) unchangeable factors affecting possible action. Continuing with the "student council" illustration, suppose that the "most probable causes" of the "blocking" conditions are: (1) the student council is remiss in fixing an election day; (2) lack of finance; and (3) administrative officials are adverse to electioneering by the candidates. A few "possible actions" to counteract the "most probable causes" of the "blocking conditions" might be: (1) a fixed date and procedure for conducting the student council elections; (2) greater appropriation of funds for election; (3) a meeting between administrative officials and student leaders to discuss the possibility of greater freedom for candidates in campaigning for office; and (4) a change of administrative officials. The group now considers the list of "possible actions" to discover if there are any "unchangeable factors" affecting them. On this basis, suggestions number 2 and number 4 might well be unchangeable factors, and be eliminated from the suggested "actions" list. This procedure leaves two remaining actions to be considered for "implementation."

The implementation analysis consists of: (1) practicality of implementation, and (2) how to implement the suggested action. Some suggested actions may not be of sufficient practical nature to warrant attempted implementation. If this fact becomes apparent the suggested action so decreed is also eliminated. At this point, only those "actions" are left which are possible and practical to "implement." The question of "how" is now discussed. Those "actions" for which the "how" of implementation are unanimously agreed upon are accepted as settled decisions of the committee. Those "actions" which might have more than one method of implementation are recorded along with the suggested "hows" of implementing and form additional content for the questionnaire. The mechanical procedures associated with the total analysis can most easily be carried out by employing a "work sheet," a sample copy of which may be found in Appendix B.

Through the analytical procedures of this Step, problems of value judgment, opinion, or attitude are resolved through general agreement of the investigatory personnel. Other problems, that are not resolved through this process, become part of the content of a questionnaire which is distributed to an adequately sized sample of the constituencies associated with the area under investigation. The recommended type of questionnaire is discussed in the next "Step" of this phase, and a sample copy may be found in Appendix B.

Step 2--Developing Methods of Collecting Attitudinal Data.

Three types of data-gathering instruments may be adapted

to supplying attitudinal data in the particular form that the proposed methodology demands. These three "tools" are the interview guide,⁶ the schedule,⁷ and the questionnaire. Of these three instruments, the most efficient and highly recommended type for satisfying the requirements of the methodology is the forced-choice rank-ordering type questionnaire. Thus, this particular type of data-gathering instrument will be the only one described and discussed here.

In general, the word questionnaire refers to an information-seeking device that the respondent fills in himself. There are many different forms of questionnaires, but all of them have one thing in common. Each of the different forms contains a set of related items, that is, a set of questions all logically related to a central problem or problems. The form of these questions determines the form of the questionnaire. Differentiation of the questionnaire form depends greatly upon the degree to which its questions are structured. In other words, some ways of asking a question leave only a few alternative ways of answering it, while others allow a wide variety of responses. Those questions that have few alternatives are considered "highly structured," while

⁶An "interview guide" is a list of points or topics which an interviewer must cover during the interview. This instrument allows considerable flexibility in the manner, order, and language employed by the interviewer.

⁷"Schedule" is the name usually applied to a set of questions which are asked and filled in by an interviewer in a face-to-face situation with another person. The wording of the question is the same for all respondents.

those allowing a greater latitude are considered "unstructured." Because of the practical limitations of space and problem definition, this subject will not be considered further here, but for those readers who are interested in a more complete treatment of the matter, see Goode and Hatt.⁸

The questionnaire used in this study is of a "structured" form, and forces the respondent to not only choose certain items, but at the same time "rank-order" them according to his personal choice or belief. Since the choice is dependent upon the respondent's attitude, opinion, or value judgment, the instrument is termed a "forced-choice rank-ordering attitude questionnaire." Each "item" of the questionnaire is composed of four choices: A, B, C, and D. Below the four choices is an area captioned "other comments." Every "choice" of a particular "item" must be ranked in comparison with the other three, while the filling out of the "other comments" section is purely optional and left to the discretion of the respondent. The "ranking" of item choices is accomplished by the respondent ranking the choice most closely representing his opinion, attitude, or situation as "1," the next closest as "2," the next as "3," and finally, the least representative as "4." Tied rankings are not permitted, and a distinct selection must be made for each "choice."

Since the questionnaire plays such a vital role in the proposed methodology, it is most important that it be constructed

⁸William J. Goode and Paul K Hatt, Methods in Social Research (New York: McGraw-Hill Book Company, Inc., 1952), Chapter 11, p. 132.

cautiously and carefully. For this reason it might be wise to consider certain limitations and precautions that should be observed in the construction of the attitude questionnaire. First, directions should be few and simple and the wording of the questions should be of such a nature that they will be clearly and easily understood. Second, it is frequently desirable to include "cross-check" questions. The consistency of replies may be checked by this means. Third, the questionnaire must be limited in its length and scope. A self-administering questionnaire should not require more than thirty minutes to complete. Fourth, in judgment, attitude, or opinion determination the questions should give no hint as to the "expected" or "desired" answer; in fact, there should be no "desired" answer. Fifth, questions should be kept as short as possible. It is better to ask two easily understood questions than a long involved one. Sixth, motivating interest, ease of answering, and willingness to answer can often be secured by allowing for an "other comments" area in a forced-choice instrument. Seventh, it might be stated that the rank-ordering forced-choice attitude questionnaire can be most fruitfully used for highly select respondents with a comparatively strong interest in the subject matter. Greater education and a generally higher socio-economic status are also desirable attributes to find in the respondents when this instrument is employed.

Although the general format of the methodology questionnaire has been described previously, and some of the basic precautions

and problems of questionnaire construction have been given a cursory treatment, nothing has been said about the actual subject matter content of the items. It may be recalled from Step 1 of phase B (Analyzing the Problem Area) that the content of the attitudinal data-gathering instrument is taken from the "action" and "implementation" phases of the problem area analysis. It should further be recalled that those "actions" and "implementations" which were to any degree doubtful concerning committee acceptance, were recorded. It is from these listings, while observing the basics of questionnaire construction, the items of the forced-choice rank-ordering questionnaire are formed. Further clarification and understanding of the problem can probably best be effected by exemplification. Using the example of "student body voting in student council elections" considered in Step 1, it may be recalled that after the condition and causal analyses, four "possible actions" were suggested. Of the four "possibles," numbers 2 and 4 were eliminated on the basis of unchangeable factors. Let us suppose, however, that the committee unanimously agreed that number 4 (a change of administrative officials) was eliminated because of unchangeable factors, but in the case of number 2 (greater appropriation of funds for elections) there is sufficient debate to cast a doubt concerning the unchangeability factor. If there is debate, there must be some basis for it, and consequently at least two opposite proposals concerning the question. The item and the basic proposals are recorded by the secretary.

"Action" number 1 (fixed election date and procedure for

conducting elections), and action number 3 (meeting between administrative officials and student leaders to discuss the possibility of greater freedom for candidates in campaigning for office) are accepted as "practicable" for implementation, and further the investigatory personnel unanimously agree on "how" number 3 should be implemented; however, upon considering number 1 there is sufficient disagreement to qualify it for inclusion in the questionnaire. The extent of disagreement necessary to qualify materials for inclusion in the questionnaire is left to the discretion of the members of the study committee. If it is felt that more opinions are necessary to resolve the problem under consideration, the subject should be included as an "item" on the questionnaire. Consequently, in this example, the study committee would undoubtedly decide that two "items" must appear in the questionnaire. First, number 2 (greater appropriation of funds for operating the election), and second, number 1 (fixed election date and procedure).

Assuming that the "choices" composing the illustrative questionnaire "items" shown below were proposed as possible methods of resolving the problems under consideration, the format of the two questionnaire "items" dealing with the aforementioned problem areas would be as follows:

1. The following are suggestions concerning the appropriation of funds for operating the Student Council elections. Rank each suggestion according to your preference. Rank the "most" preferred choice as number 1, the "least" preferred as number 4. Please be sure that each "choice" is assigned a "ranking."

By sending one instead of two delegates to the National Student Association Convention enough money can be saved to provide the wherewithal for procuring voting machines for the elections.

Since the Student Council represents all of the students on campus, it should be granted additional money by the student activities budget committee to carry out its elections with voting machines.

Since the student activities budget committee cannot grant additional funds to Student Council without depriving some other equally important student governing organization of the amount appropriated, Student Council should publicize elections more widely, but avoid an increase in cost by continuing to use the "hand mark" form of ballot.

Student Council and the other six student government types of organizations can share the additional costs of conducting an election in the modern way by using voting machines.

Other comments: _____

2. The following are suggestions for how both the date and procedures for the Student Council election may be definitely fixed, and thus improve the student government election system. Please follow the procedures of "Item 1," and be sure that each suggestion is assigned a "ranking."

Fix the date of election as the first Monday in May, and follow the procedure of registered voting, as employed in city, state, and federal elections.

Fix the date of election as the Monday three weeks prior to the last day of regular classes, and follow the procedure of "punching" the identification card of the voter instead of having a register of voters. As for the remainder of the procedures, employ those of city, state, and federal elections.

Fix the date of election as the Monday three weeks prior to the last day of regular classes, and follow the "punched" identification card procedure, along with the Hare Lottery system which was the procedure of election of the past semester.

Fix the date of election as the first Tuesday in May, and continue the present plan of allowing the incumbent council to decide which election procedure to employ.

Other comments: _____

Before concluding the treatment of the "Step" a word should be said about the problem of the validity and reliability of attitude questionnaires. According to Wylie it is seldom feasible to check the accuracy of questionnaire data.⁹ Although some errors are revealed, he concluded that the totals and averages compiled are not seriously affected. Bain revealed that the more objective the question and the more within the individual's first-hand experience the more dependable the information.¹⁰ The latter statement by Bain is one of the reasons this methodology demands (a) that questionnaire item content be derived from the method of problem area analysis found in Step 1, and (b) that the constituencies associated with the problem area be sampled.

For those readers who might wish to examine the general area of questionnaire construction more closely, Hubbard provides a comprehensive summary of the subject, and for those who might only be interested in the forced-choice rank-ordering type of instrument used in the proposed methodology, a sample form is

⁹A. T. Wylie, "To What Extent May We Rely Upon the Answers to a School Questionnaire?" Journal of Education Method, 6 (1927), pp. 252-57.

¹⁰R. Bain, "Stability in Questionnaire Response," American Journal of Sociology, 37 (1931), pp. 445-53.

provided in Appendix B.¹¹

Step 3--Running A Pilot Study.

The procedure called a "pilot study" is used to furnish answers to such questions as: How to formulate questionnaire items in areas where the literature is inadequate? How to select items for the final form of the data-gathering instrument? How to determine whether an item is ambiguous or poorly worded? What questions are comparatively valid? What types of questions yield reliable answers? Do the respondents answer willingly? Does the "sample" seem sufficiently informed about the problem area to be able to respond? Thus the procedure known as a pilot study yields information which the researcher can use to improve the research instruments, techniques, and methods, which in turn yield more valid and reliable results.

The pilot study, as a part of the proposed methodology, serves two specific purposes: first, to establish criteria by which an adequately-sized sample for the main study may be determined; second, to identify poor questionnaire items which in turn affect validity and reliability of the final form of the questionnaire to be used in the main study. Because of the difference in length of the respective discussions necessary to accord adequate treatment to these specific purposes of the pilot study, the "second" of the two purposes will be discussed first.

The determination of poor items in the forced-choice rank-

¹¹F. W. Hubbard, "Questionnaires," Education Research, 9 (1939), pp. 502-07, 608-09.

ordering attitude questionnaire is mainly determined by what the respondents may write in the "other comments" section at the end of each item. Information from the "comment" section may be supplemented by personal interviews with a few of the respondents who have made such comment, and with others who did not. As a result, a form of comparative analysis is possible, and a decision concerning poor items can be more easily reached. In the case of those items where no comment is made, the researcher can be reasonably assured that the item has been understood by the majority of the respondents. (Since lack of understanding of an item often leads to various interpretations by respondents, it is obvious that it is a factor of the validity and reliability of a questionnaire.) When many respondents enter qualifying remarks concerning their "rankings," or criticize the absence of a possible choice, the item is usually poor and should be revised.

Perhaps the best approach at this point is to suggest a few signs which might indicate that something is wrong with an item, or in broader scope, the questionnaire. Specification of what is wrong, and elimination of the error are the almost self-evident sequential steps to be taken once the signs of the trouble have been noted:

1. "All-or-none" statements. If respondents tend to criticize the "choices" associated with certain items as being of the "all-or-none" type, re-examination of these items is indicated. Everybody is against sin, for good government, for patriotism and health, and other obviously good influences. If the items are made up of such "choices," a stereotyped response is being elicited from the respondents, thus eliminating the possibility of analyzing the variance in the response according to a methodological step to be described later (Step 2, phase C).

2. A high proportion of "don't know" or "don't understand" statements. This is indicative of the fact that the items are improperly drawn, or that a bad sampling design has been used, i.e., it may be a good question but it was asked of the wrong people. Naturally, the implications of the latter part of the previous statement are that the constituencies being sampled are not necessarily associated with the problem area and therefore are comparatively uninformed concerning it. That part dealing with poor items suggests the possibility (a) that the item, composed of a question and its associated "choices" is vague, or (b) that it is too complex, or (c) that it assumes possession by the respondent of more information than he actually has.
3. A great number of qualifying, or irrelevant statements. If many of these are offered by the respondents when the item offers supposedly clear and exhaustive alternatives, it is an indication of weakness. Such additional comments not only suggest that the item needs revision, but often indicate the precise revisions necessary.
4. A high proportion of "objection" statements. If a considerable percentage of respondents object to the item, it indicates that a taboo subject has been brought up, or improper labeling has aroused the respondents' suspicions, or possibly the respondents feel that the item is seeking an incriminating answer.

With the foregoing information as a rough guide, the investigatory personnel will find itself in a good position to improve the data-gathering instrument from the results obtained in the pilot study.

The most important function of the pilot study in the proposed methodology is to secure data to be used in the statistical determination of the size of sample needed for attaining a given level of reliability of results in the main study. The development of the necessary particular numerical forms is probably best described and discussed in terms of a practical situation. Suppose, for example, that the investigatory personnel have

followed the procedures of the proposed methodology through Step 2 of phase B (Developing Methods of Collecting Attitudinal Data). The next "Step" is that of running the pilot study. Therefore, a small random sample is selected from each of the constituencies associated with the problem area by using a random numbers table (the complete process is described in detail under Step 4 of this phase). The total number of individuals chosen for the sample in the pilot study depends upon the size of the total population associated with the problem area. Usually a random sample of 35 or 40 in the pilot study, allocated in rough proportion to the number of people in each of five to seven "associated" constituencies composing a total population of, say, 500 to 700 people is sufficient for determining the necessary numerical forms.

The questionnaire is administered to the "sample" individuals of each constituency through a central office, and collected at the same point. A total return is necessary, and can usually be attained. In the event that a total return is not realized, the number of non-respondents are replaced by the same number of individuals from the particular constituency that failed to supply its original quota of respondents.

Upon receiving a "returned" questionnaire, each "choice" of each "item" is "weighted" as follows: If a "choice" has been ranked 1, 4 points are assigned to it; if it has been ranked 2, 3 points are given; for a ranking of 3, 2 points; and for a ranking of 4, 1 point.

Treating each constituency separately and then in combined total, it is recommended that a "score sheet" for each item be set up.¹² As a limited illustration of a combined constituency form (the single constituency form is not illustrated here, but is very similar except that it pertains to the respondents of one constituency only--see Appendix B for sample form), suppose that the four possible responses A, B, C, and D, to item 5 have been "ranked" by six respondents, two each from three different constituencies. The data in tabular form might appear as follows:

TABLE I
RANK CHOICES MADE BY A TOTAL SAMPLE OF SIX RESPONDENTS
TO A SAMPLE QUESTIONNAIRE ITEM

(Combined Constituencies Respondents)	Rank-Choice Scores			
	Response			
	A	B	C	D
a	4	1	2	3
b	2	3	1	4
c	4	2	1	3
d	3	1	2	4
e	4	3	1	2
f	4	1	3	2
Total	21	11	10	18
Mean	3.5	1.8	1.7	3.0
Standard Deviation	.84	.98	.82	.90

¹²This "combined" score sheet is only used in the pilot study and not in the main study.

Upon completing the entries on the tabular "work sheet," the next task is to find the mean and standard deviation of the "rank-choice" scores, separately, for each of the possible responses to the item.¹³ In the illustration given above there are four possible responses to Item 5. It is necessary, therefore, to compute four means and corresponding standard deviations.¹⁴ These are shown at

¹³As a rough "check" on the mechanical procedures of "entering" and "squaring" the "weights," henceforth referred to as "scores," barring compensating errors, the following must be true: The grand total of the x-scores should be equal to the product formed by multiplying the number of respondents by the sum of the "scores" of an individual respondent. The grand total of the "squared" scores (x^2) should be equal to the product formed by multiplying the number of respondents by the sum of the "squared" scores of an individual respondent. In the limited example above, the check would be: Sum of scores for individual respondent: $4 + 3 + 2 + 1 = 10$; Sum of squared scores for individual respondent: $16 + 9 + 4 + 1 = 30$; Number of respondents: 6.

Check (1): $21 + 11 + 10 + 18 = 6 \times 10$; or $60 = 60$.

Check (2): $77 + 25 + 20 + 58 = 6 \times 30$; or $180 = 180$.

Thus, the researcher can be assured that for each individual respondent a different rank score appears under each of the possible choices, and that the computation of "squared" scores is correct.

¹⁴Suggested formulas for determining the mean and standard deviation of a particular "choice" and "item," in both the single constituency and combined constituency form, are:

$$M_i = \frac{\sum x}{n}$$

and

$$s_i = \sqrt{\frac{\sum x^2 - \frac{(\sum x)^2}{n}}{n - 1}}$$

where x = a score on one of the choices of a particular item, n = the number of respondents, M_i = the mean of one of the choices of a particular item, s_i = the standard deviation of one of the choices of a particular item, and i = one of the choices of a particular item. In the limited example above "i" takes on the values of A, B, C, or D.

the foot of Table I. For example, the mean of the "rank-choices" assigned to "response A" by the six respondents is 3.5 and the standard deviation of this distribution of "rank-choices" for "response A" is .84. The mean of "response B" is 1.8 and the standard deviation is .98. "Response C" has a mean of 1.7 and standard deviation of .82, while "response D" has a mean of 3.0 and a standard deviation of .90. This is the general class of basic numerical forms from which one particular pair, composed of one mean and its accompanying standard deviation will be selected for determining an adequately-sized sample for the main study. With the computation of these "pairs" of values from the combined constituencies for each choice of every item on the questionnaire, assuming that the previously described analysis for item reliability and validity has been completed, the pilot study of the methodology has served its purposes. The investigatory personnel are now in position to perform the procedures and operations for determining an adequately-sized sample at a given level of confidence and allowable relative sampling error. The next task is to allocate the sample size over the constituencies associated with the problem area.

Step 4--Determining Size of Sample Needed.

The first procedure to be performed under this step is that of considering all of the constituencies' "pairs" of numerical forms from the "choices" of those items of the questionnaire that were considered to be valid and reliable after analysis of the "other comments" statements according to Step 3. For example, suppose the original questionnaire used in the pilot

study contains ten items. After the analysis of the "other comments" statements, it is decided that two of the items of the questionnaire are not of sufficient validity and reliability in their present form to be included in the final form of the questionnaire. This leaves eight items that are sufficiently valid and reliable to be included. From the combined constituency form, the means and their accompanying standard deviations of each "choice" of the eight valid and reliable items are examined for the basic criteria upon which the determination of an adequately-sized sample at a given level of confidence and an allowable relative sampling error is based. The so-called "basic criteria" is termed the coefficient of variation by statisticians. It is specifically defined for the proposed methodology as the highest valued fraction formed by dividing the standard deviation of any "choice" by its accompanying mean, taken from the combined constituency score sheets of the valid items.

Considering the values found in the limited example of a combined constituency in Table I under Step 3, the generally defined coefficients of variation are:

$$c_A = \frac{s_A}{M_A} = \frac{.84}{3.5} = .24$$

$$c_B = \frac{s_B}{M_B} = \frac{.98}{1.83} = .54$$

$$c_C = \frac{s_C}{M_C} = \frac{.82}{1.67} = .49$$

$$c_D = \frac{s_D}{M_D} = \frac{.90}{3} = .30$$

However, the coefficient of variation, which is necessary to determine an adequately-sized sample for the main study, is the "highest valued" coefficient of any "choice," occurring in the combined constituency score sheet forms. Therefore, if none of the "choices" of the other possible questionnaire items (not shown in this example) yield a "coefficient" fraction of higher value, the coefficient of variation for this example would be $c_E = .54$.

After the coefficient of variation has been determined, Table XIV, Appendix A, may be consulted to determine the minimum number of individuals necessary to form an adequately-sized sample at a given confidence level and acceptable relative sampling error. Development of the formulas and the general rationale underlying the composition of Table XIV, accompanied by an explanation and examples of how to use the table may be found in Appendix A.

An illustration will serve to demonstrate how Table XIV is employed in the case of the preceding example where the coefficient of variation would be $c_B = .54$. Suppose that

sufficient accuracy will be attained if the relative sampling error does not exceed 10%. Thus, a permissible value of the mean, M_B , which will not materially affect the reliability of the study, lies somewhere within the range of 1.65 and 2.01.¹⁵ Then further suppose that the 5% level of confidence is sufficient for the purposes of the particular research of the example. Now, since $c_B = .54$ is not equal to a marginal value of the Table, it is necessary to interpolate (see "Explanation" Appendix A). The Table is entered through the 10% column, and the following values are read:

$$c = .6 = 139 \quad (1a)$$

$$c = .54 = 96 + x \quad (1b)$$

$$c = .5 = 96 \quad (1c)$$

subtracting (1c) from (1a):

$$\begin{array}{r} .6 = 139 \\ -.5 = -96 \\ \hline .1 = 43 \end{array} \quad (1d)$$

¹⁵The relative sampling error

$$\frac{P_s \frac{s_{\bar{x}}}{\bar{x}}}{\bar{x}}$$

is a ratio formed by dividing the standard error of the mean ($s_{\bar{x}}$) by the population mean (\bar{x}). Both of the latter values are population parameters.

Use of pilot study, or main study, estimates of the population mean and standard error values in the relative sampling error formula is permissible on the basis that these estimates are known to approximate the true values of these population parameters with a specified degree of confidence or reliability.

In this illustration the pilot study estimate of the mean, $M_B = 1.83$, was used as follows:

$\frac{s_{\bar{x}}}{1.83} = .10$ then $s_{\bar{x}} = .18$; and the range is defined as $1.83 \pm .18$.

then subtracting (1c) from (1b):

$$\begin{array}{r} .54 = 96 + x \\ -.5 = -96 \\ \hline .04 = x \end{array} \quad (1e)$$

and establishing the following proportion between (1d) and (1e):

$$\frac{.04}{.1} = \frac{x}{43}$$

solving for "x": $x = (43) (.4) = 17.2$, rounded to 18.

Therefore, the required minimum sample is: $n = 96 + x = 96 + 18 = 114$.

After determining the total minimum sample size, it is necessary to allocate a particular number of the individuals to each of the constituencies (strata) associated with the problem area. Rosander shows that the optimum allocation of a random sample of size "n" will be made when the number "n_j" of sample elements assigned to a particular stratum (constituency) is proportional to the product of the stratum (constituency) population size N_j and the highest-valued standard deviation of all the "choices" of all the items in the stratum (single constituency) s_j.¹⁶ In other words, "n_j" is proportional to "N_js_j." If this statement is true, then the total sample size "n" must be proportional to the sum of the various N_js_j values, also. Thus the following equation is true:

$$\frac{n_j}{n} = \frac{N_j s_j}{\sum N_j s_j}$$

¹⁶Rosander, op. cit., p. 41.

or the number allocated to any particular stratum is:

$$n_j = \frac{n(N_j s_j)}{\sum N_j s_j}$$

Therefore, if this principle is to be applied, a knowledge of N_j , the population of the individual constituency, and s_j , the highest-valued standard deviation of all the "choices" of all the items in the constituency, is essential. Actually, absolute values of N_j are not necessary; reasonably close estimates will do just as well.

The investigatory personnel often know the exact number, " N_j ," of individuals in the constituencies through a central source of such data, or can closely approximate the number from related information. The highest value of " s_j " is estimated from the individual constituency score sheet of the pilot study by the methods shown in Step 3 of phase B. It should be carefully noted that " s_j " is the highest-valued standard deviation of a particular constituency and not the highest-valued " s " of the combined constituency which was used to determine the total minimum size sample.

The example in Table II shows how to allocate a sample of 100 over four constituencies totaling 700 students.

TABLE II

ALLOCATION OF A FIXED SAMPLE SIZE OF 100
OVER FOUR CONSTITUENCIES OF 700 STUDENTS

Constitu- tency	Constitu- ency Size, N_j	Highest-valued Standard Devia- tion of the Con- stituency, s_j	$N_j s_j$	$\frac{N_j s_j}{\sum N_j s_j}$	Allocation of $n = 100$, $(n) \frac{N_j s_j}{\sum N_j s_j}$
1	110	1.0	110	.203	20
2	220	.8	176	.325	33
3	300	.6	180	.331	33
4	70	1.1	77	.142	14
Sum	700		543	1.000	100

In this example, 20 persons are chosen from the first constituency, 33 persons are chosen from the second, 33 from the third, and 14 from the fourth.

With the completion of the allocation, the final procedure of Step 4, phase B is that of selecting, with the aid of a random numbers table, the actual individuals who will compose the sample. To continue with the illustrative data in Table II, it is noted that 20, 33, 33, and 14 persons are to be chosen from constituencies 1, 2, 3, and 4, respectively. This process may be accomplished by a file card system. Every known individual in the total sample is represented by a card containing, as a minimum, the individual's name and constituency; other additional

information might be included if the investigatory personnel so desires. (It may be assumed that in urban universities a central records office can supply the recommended minimum information and, in some instances, the actual file of cards.)

The cards are sorted into the respective constituencies; in this case, 4 categories--one for each constituency. The cards are then serially numbered in three-digit figures. The first constituency composed of 110 persons is numbered from 000 through 109; the second constituency with 220 persons, from 110 through 329; the third with 200, from 330 through 629; and finally the fourth composed of 70 persons, 630 through 699. Thus each person of the total population of 700 has a serial number. (If there had been 1,001 people in the population, four-digit numbers from 0000 through 1000 would have been used. In general, the number of digits in the serial numbers is equal to the number of digits in the number designating the size of the population.

Now that the total population has been numbered serially, the next procedure is to enter a random numbers table selecting those numbers which correspond to any serial number in any constituency. A tally of usable random numbers is kept by strata (constituencies) so that when the number of sampling units required from a particular constituency is reached, additional random numbers which fall in this constituency are ignored.¹⁷

¹⁷For a complete explanation of random numbers tables and their uses, consult any elementary statistics textbook published since 1950.

In this manner any number of sampling units can be drawn at random from any of the constituencies (strata).

Upon completing the selection of the sample by pulling out the numbered file cards of the individuals selected, the procedures of Step 4, phase B come to an end, and the investigatory personnel prepare for Step 5.

Step 5--Administering Instruments for Gathering Data.

Adequate definition of the constituencies associated with the problem area is a fundamental prerequisite for deciding which office, or offices, can most easily distribute and collect the questionnaires to be filled out by individuals composing the study sample. For example, if the study of a particular problem area involves students and faculty in the colleges of Education, Engineering, and Law, the Deans' offices of those three units might be requested to perform the task of distributing and collecting the questionnaires. On the other hand, suppose a study of fraternities is in process. The constituencies might be defined as fraternity pledges and members, faculty advisers, and "non-fraternity" students of second semester freshman and first semester sophomore classification. In such a case, each individual fraternity might be asked to distribute and collect the questionnaires of its pledges and members, while the Dean of Students Office might be responsible for reaching the faculty advisers and the "non-fraternity" students involved.

Instructions to the prospective respondent by the agency distributing the questionnaire should be kept to a minimum. Other

than requesting that the questionnaire be filled out immediately, or at the respondent's earliest convenience and returned as soon as possible, little need be said by the individuals responsible for actually distributing the questionnaire. The introductory statement and accompanying directions for the questionnaire itself should be sufficient motivation to elicit a sincere and honest response. These factors, plus the request for cooperation from an agency or person of sufficient prestige to impress the potential respondent, reasonably assures the cooperation sought and the return of a completed questionnaire.

Although the size of a sample of each constituency contains a few extra individuals as a precautionary factor against unforeseen complication, every effort should be made to obtain a completed questionnaire from each individual included in the sample of the constituency. A method that has frequently met with success is that of requesting the individual to fill out the questionnaire immediately in a place designated for this purpose adjacent to the place where the person picks up the questionnaire. This, besides having the good psychological effect of respondent self-importance, contributes to increasing the reliability of the study. (The reliability of a study employing random sampling of attitudes depends greatly upon the respondent's own attitudes, opinion, and judgments, and not those that might result from discussion of the subject matter with his associates.) If such an arrangement is not possible, the distributing agency should instruct the respondent that he may be allowed approximately 24

hours in which to complete the questionnaire. The respondent should further be requested not to discuss the questionnaire with his associates, but to give only his own opinions, attitudes, and judgments concerning the item content. In the event an individual finds it impossible to comply with the "24-hour" request, the "issuing" personnel should attempt to arrange for a particular time when the individual could return and, if possible, complete the questionnaire in the aforementioned adjoining facility provided specifically for this purpose.

Each questionnaire will be coded with the serial number that appears on the individual's file card. Since the investigatory personnel will send the numbered questionnaires and duplicate file cards to the distributing agency, it is a relatively simple matter for the "distributing" personnel to place an individual's card in an "out" file upon issuing a questionnaire to the person. When the completed questionnaire is returned, it should be cursorily inspected to make sure that all of the choices of the various items have received a rank. If an omission is discovered, the respondent's attention may politely be brought to the "oversight," and the necessary adjustments made. In the case of firm refusal on the part of the respondent to make the aforementioned adjustment, the issue should not be pursued further. However, after the respondent has departed a brief note should be included under the appropriate "other comments" section, or in the margin, pertaining to what has transpired.

When a questionnaire is returned, the respondent's card should be checked and replaced in the original, or "in," file. After all of the questionnaires have been returned, the "issuing" office of the particular constituency being sampled forwards them with the accompanying "card" file to the office of the investigatory personnel.

With the completion of Step 5 of phase B, the part of the methodology dealing with problem area analysis and the gathering of attitudinal data is terminated. The investigatory personnel then prepares for the actual treatment of the attitudinal and enumerative data.

C. Treatment of the Data

This phase of the methodology is composed of four Steps and deals with the scoring of the data-gathering instrument, the application of the statistical technique called "analysis of variance," and a technique of trend analysis. Upon completing these Steps the investigatory personnel is in possession of all the information the methodology is expected to supply for more informed decision-making.

Step 1--Scoring the Data-Gathering Instrument and Preparing Data for Analysis of Variance.

The completed questionnaires are maintained in separate collections, according to the several constituencies represented. Score sheets are prepared for each item of the questionnaire, and the scores that are entered are those of the individuals composing a particular constituency (single constituency form). For purposes of future reference this type of score sheet will be termed

"Form A." It is used in the intra-stratum analysis to be described later. A second form, designated as "Form B," will be used in the inter-strata analysis, also to be described later.

The following example will illustrate the technique of scoring the data-gathering instrument. Suppose that a particular problem area under study is of such a nature that there are four constituencies associated with it. These are: (1) the student body of the College of Engineering, (2) the faculty of the College of Engineering, (3) the student body of the School of Pharmacy, and (4) the faculty of the School of Pharmacy. The investigatory personnel design a questionnaire composed of eight items and, after the pilot study, the respective Deans' Offices of the colleges distribute the questionnaire to the individuals selected by random sampling. The questionnaires are completed by the respondents, and are returned to the investigatory personnel who proceed to "score" the questionnaires. "Scoring" used in this sense includes not only the act of assigning appropriate "weights" to the rankings of the various choices of all the items, but also the preparation of "Form A" for making intra-stratum analyses. The results of these analyses may indicate the need for making further analyses between strata (constituencies). Returning to the example, the investigatory personnel assign the "weights" to the rankings of the items as in the pilot study; 4 points for a ranking of 1; 3 points for a ranking of 2; 2 points for 3; and 1 for 4. After weighting the four choices for each of the eight items, the investigatory personnel make entries on Form A, for

Item 1, College of Engineering student body sample of seven people, as shown in Figure 1.

FIGURE 1

ILLUSTRATION OF SAMPLE WORKSHEET FOR
INTRA-STRATUM ANALYSIS, FORM A¹⁸

Constituency: Student Body, Engineering. Item #1

Number in Sample: 7.

Choices: A, B, C, D.

	$x \frac{A}{\quad} x^2$	$x \frac{B}{\quad} x^2$	$x \frac{C}{\quad} x^2$	$x \frac{D}{\quad} x^2$				
	4	16	3	9	2	4	1	1
	3	9	4	16	1	1	2	4
	3	9	2	4	4	16	1	1
	3	9	2	4	4	16	1	1
	2	4	1	1	4	16	3	9
	4	16	2	4	1	1	3	9
	4	16	2	4	1	1	3	9
ΣX	23		16		17		14	$\Sigma X_t = 70$
ΣX^2		79		42		55		34 $\Sigma X_t^2 = 210$

As explained earlier there were four possible choices for Item 1, i.e., choices A, B, C, and D. The data in Figure 1 show that of the seven responses to "Choice A," three give this choice the highest rank (4), three give it the next highest rank (3) and one gives it a lower rank (2). Similar rank order preferences are shown for the other three choices for Item 1, namely B, C, and D.

It should be kept in mind that the illustrative "Form A"

¹⁸Uses to be made of the sums and sums of squares shown at the foot of Figure 1 will be explained and illustrated in the description of the next "Step."

presented in Figure 1 summarizes the data for one questionnaire item only for only one of the four population constituencies sampled--in this example the student body of the College of Engineering. The procedures of analysis of variance will first be applied to this single item for this one constituency. The purpose will be to determine whether or not the observed differences in expressed preferences among the four choices are statistically significant. The results will indicate whether any of the four choices for Item 1 is "significantly" preferred by the Engineering student body. It should be recalled that in the illustrative problem being discussed here an eight item questionnaire was administered to four different constituencies of students and faculty. It follows that the procedures described above for summarizing and analyzing data would for this problem be carried through $8 \times 4 = 32$ times. In other words, 32 Form A Worksheets would be prepared.

Step 2--Analyzing the Data, Intra-Stratum.

With the completion of the 32 Form A sheets under Step 1, the data are ready for treatment by the method of analysis of variance, single classification. Before demonstrating the procedures, it is appropriate to discuss briefly the nature of the analysis of variance so that its usefulness in the methodology may be made clear.

According to Edwards the analysis of variance deals with variances rather than standard deviations and standard errors.¹⁹

¹⁹Allen L. Edwards, Statistical Methods for the Behavioral Sciences (New York: Rinehart and Co., Inc., 1954).

The basic rationale of the analysis of variance is that the total sum of squares of a set of derived measures, namely, squares of differences between a set of scores and their mean, for several groups, can be broken down into specific parts, and these parts in turn can be identified with a given source of variation. In the simplest case, the single classification, which is the type employed in the methodology, the total sum of squares is analyzed into two parts: (1) the sum of squares based upon the variation within the several groups; and (2) the sum of squares based upon variation between the group mean scores.

Based upon the assumption that the so-called "groups" or samples making up a total series of measurements are random samples from a common normal population, the two estimates of the population variance, the within groups and the between groups variances, may be expected to differ only within the limits of random sampling. This null hypothesis may be tested by dividing the between groups variance by the within groups variance to get the variance ratio which is designated as F . Values of F corresponding to the 5 and 1 per cent levels of confidence have been organized in the form of a table and may be found in any good elementary statistics textbook. If the obtained value of the variance ratio (F) equals or exceeds the value found in the table, then the null hypothesis that the samples have been drawn from the same common normal population must be rejected. If the null hypothesis is rejected, the populations from which the samples have been drawn may differ in terms of the means,

variances, or both. However, if the variances are approximately the same, it may be concluded that the means differ. It is worthy of note that the latter case occurs a high percentage of the time in most applied problems, and thus the comparison of means is frequently used.

The above is the basic rationale of the analysis of variance in its simplest form. For those readers who might be interested in a more complete discussion and further treatment, see Edwards.²⁰

At this point, the analysis of variance will be applied to the data presented earlier in Figure 1. This will demonstrate the use of "Form A." The three things to be done with these data are: (1) compute the total sum of squares; (2) find the between groups (choices) sum of squares; and (3) compute the within groups sum of squares. When this task is completed the F-ratio is calculated to determine if a significant difference between groups (choices) exists. Only that part of the table necessary to the calculations is shown below.

²⁰Ibid., p. 88.

	Choice A		Choice B		Choice C		Choice D		
	X	X ²							
	4	16	3	9	2	4	1	1	
	3	9	4	16	1	1	2	4	
	3	9	2	4	4	16	1	1	
	3	9	2	4	4	16	1	1	
	2	4	1	1	4	16	3	9	
	4	16	2	4	1	1	3	9	
	4	16	2	4	1	1	3	9	
ΣX	23		16		17		14		$\Sigma X_t = 70$
ΣX^2		79		42		55		34	$\Sigma X_t^2 = 210$
$(\Sigma X)^2$	529		256		289		196		$(\Sigma X_t)^2 = 4900$
$N =$	$\frac{23}{7} = 3.285$		$\frac{16}{7} = 2.285$		$\frac{17}{7} = 2.428$		$\frac{14}{7} = 2.000$		$N = 28$

Total Sum of Squares:

The total sum of squares is determined first by combining the scores of the four groups and treating them as one set of measurements. This could be accomplished by finding the mean \bar{X}_t of the combined distribution, subtracting this value from each of the scores, squaring these deviations, and summing to get the total sum of squares. However, the value of the total sum of squares can be obtained directly from the scores as they appear in Form A. Thus:

$$(N = 28) \quad \sum_1^N (X - \bar{X}_t)^2 = \Sigma X_t^2 - \frac{(\Sigma X_t)^2}{N}$$

Substituting in this formula, the total sum of squares is:

$$\begin{aligned} &= 210 - \frac{4900}{28} \\ &= 210 - 175 \\ &= 35 \end{aligned}$$

Sum of Squares Within Groups:

Although certain "short methods" will be shown later in the discussion of finding within groups sum of squares, for the purposes of better understanding it first will be treated through the direct and basic approach.

In order to find the sum of squares within each group, each group is considered separately. That is, the mean of each group, and the sum of the squared deviations within each group from its own mean, is found. Thus, in this example:

$$\begin{aligned} \sum_1^7 (X - \bar{X}_A)^2 &= \sum_1^7 X_A^2 - \frac{(\sum X_A)^2}{7} \\ \text{Choice A} &= 79 - \frac{529}{7} \\ &= 79 - 75.571 \\ \text{Within Group (A)} &= 3.429 \end{aligned}$$

$$\begin{aligned} \text{and} \quad \sum_1^7 (X - \bar{X}_B)^2 &= \sum_1^7 X_B^2 - \frac{(\sum X_B)^2}{7} \\ \text{Choice B} &= 42 - \frac{256}{7} \\ &= 42 - 36.571 \\ \text{Within Group (B)} &= 5.429 \end{aligned}$$

$$\begin{aligned} \text{and} \quad \sum_1^7 (X - \bar{X}_C)^2 &= \sum_1^7 X_C^2 - \frac{(\sum X_C)^2}{7} \\ \text{Choice C} &= 55 - \frac{289}{7} \\ &= 55 - 41.286 \\ \text{Within Group (C)} &= 13.714 \end{aligned}$$

$$\begin{aligned} \text{and} \quad \sum_{1}^{7} (X - \bar{X}_D)^2 &= \sum_{1}^{7} X_D^2 - \frac{(\sum X_D)^2}{7} \\ \text{Choice D} &= 34 - \frac{196}{7} \\ &= 34 - 28 \\ \text{Within Group (D)} &= 6 \end{aligned}$$

Therefore the sum of these four sums of squares,

$$3.429 + 5.429 + 13.714 + 6 = 28.572$$

is the sum of squares within groups. It is a measure of the variation of the individual observations about the means of the particular groups to which they belong.

Although the method shown above is the true theoretical approach, it is seldom used for determining the value of the within groups sum of squares. A more practical procedure is that of finding the total sum of squares and the between groups sum of squares first, and then subtracting the between groups sum of squares from the total sum of squares, which in turn yields a difference which is equal to the within group sum of squares.²¹

Sum of Squares Between Groups:

If the total sum of squares and the within groups sum of squares is known a subtraction may be made to find the value of the between groups sum of squares, for since:

²¹To be sure, the latter method is faster and more practical than the former, but a mild warning concerning the subtraction process of finding the within groups sum of squares should be given. It should be remembered that if an error is made in determining the total sum of squares or the between groups sum of squares, then the within group sum automatically contains the error. For this reason, many statisticians use the "basic" method shown above to check the results found by the "difference" method.

Total sum of squares = Between groups + Within groups,

then: Between groups = total - Within groups.

However, there are two reasons at this point for now carrying out the subtraction process: (1) usually the between groups sum of squares is computed before the within groups sum of squares, thus under such a circumstance only the total sum of squares is known and it would be impossible to subtract the within group sum of squares to find the between groups sum; (2) since the between group sum of squares is usually found before the within group sum of squares, it is necessary to know how to calculate this value directly.

The theoretical approach to finding the between groups sum of squares is presented in Appendix A.²² In actual practice, however, the following method for computing between groups sum of squares is employed. If there are K groups with n_i observations in each group, and $n = \sum n_i$, then the sum of squares between groups may be found by the formula

$$\text{Between groups} = \sum_1^k \left[\frac{(\sum X)^2}{n_i} - \frac{(\sum X)^2}{n} \right] \quad (4)$$

In the present example, the between groups sum of squares would be found by formula (4) as follows:

²² See NOTE 1, Appendix A, p. 229.

$$\begin{aligned}
\text{Between groups} &= \frac{(\sum X_A)^2}{7} + \frac{(\sum X_B)^2}{7} + \frac{(\sum X_C)^2}{7} + \frac{(\sum X_D)^2}{7} - \frac{(\sum X_t)^2}{28} \\
&= \frac{(23)^2}{7} + \frac{(16)^2}{7} + \frac{(17)^2}{7} + \frac{(11)^2}{7} - \frac{(70)^2}{28} \\
&= \frac{529}{7} + \frac{256}{7} + \frac{289}{7} + \frac{196}{7} - \frac{4900}{28} \\
&= \frac{1270}{7} - \frac{4900}{28} \\
&= 181.428 - 175
\end{aligned}$$

$$\text{Between groups} = 6.428$$

As a rough check of the computations, the following equation should balance:

$$\begin{array}{l} \text{Total Sum of} \\ \text{Squares} \end{array} = \text{Between Groups} + \text{Within Groups}$$

in the present example:

$$35 = 6.428 + 28.572$$

$$35 = 35$$

Each of the sums of squares has associated with it a specified number of degrees of freedom. For the total sum of squares, there are $(n - 1)$ degrees of freedom. In the present example, this value would be $28 - 1 = 27$. The number of degrees of freedom for the sum of squares between k groups would be $(k - 1)$. In the example being used to demonstrate this step, the degrees of freedom associated with the sum of squares between groups would be $4 - 1 = 3$. The number of degrees of freedom within each group is equal to $(n_i - 1)$, where n_i is the number of observations in each group. But since there are k groups, the sum of squares

within groups is equal to $k(n_i - 1)$. In the present example there are 4 groups composed of 7 observations each. Therefore the number of degrees of freedom associated with the sum of squares within groups would be $4(7 - 1) = 24$.

If the sum of squares within groups is divided by its degrees of freedom, the result will be an estimate of the common population variance that is independent of the variation in the group means. If the sum of squares between groups is divided by its degrees of freedom, the result will be another estimate of the common population variance, but this estimate is independent of the variation within groups. These estimates of the population variance are called "mean squares," and the analysis is usually summarized in the form of a "variance table" shown below. (Data shown are from the example.)

TABLE III
VARIANCE TABLE FOR DATA OF EXAMPLE ON PAGE 95

Source of Variation	Sum of Squares	d.f.	Mean Square
Between Groups	6.428	3	2.143
Within Groups	28.572	24	1.190
Total	35.000	27	

Upon completion of the variance table the F-ratio test of significance is applied. The F-ratio is defined as:

$$F = \frac{\text{Mean Square Between Groups}}{\text{Mean Square Within Groups}}$$

and the null hypothesis that is being tested is that the samples

are random samples from a common normally distributed population.

$$\text{For the data of Table III: } F = \frac{2.143}{1.190} = 1.80$$

To determine whether this value is significant at the 5 or 1 per cent levels, a table of 5 and 1 per cent levels for the F-distribution is entered in the column showing the degrees of freedom of the greater mean square. In this example, that value is "3." Proceeding down the column until the row entry corresponding to the degrees of freedom of the lesser mean square, 24 in this case, is found, the values of F significant at the 5 and 1 per cent levels are shown in light and bold type, respectively. Using Table VIII of Edwards²³ the value at the 5 per cent point²⁴ is 3.01, and at the 1 per cent point is 4.72, with the respective degrees of freedom of 3 and 24. Therefore, the value of F found in the example, 1.80, is not significant and the null hypothesis must be accepted.

Interpreting this finding, the investigatory personnel could conclude that there is no statistically significant difference

²³ Edwards, op. cit., p. 88.

²⁴ Rationale of "levels" and "points." The probability obtained in a two-tailed test of significance is designated as a "level of significance." When a one-tailed test of significance is made the probability obtained is referred to as a "point." In other words, if a one-tailed test is made and it is found that "F" has a probability of .05, it is significant at the 5 per cent "point." If a two-tailed test is made, and "F" has a probability of .05, that is, .025 of the total area of the F-distribution is cut off in the right tail by the positive value of F, and .025 of the total area is cut off in the left tail by the negative value of F, or in other words, the probability of obtaining a positive or negative value of F associated with the .025 point of the distribution is used, then such a test is referred to as "level of significance."

between the four choices of Item 1, as far as the Engineering Student Body is concerned.

If a significant difference would have been discovered by the F-ratio test, it would have been necessary to run a further test of significance, the latter is known as the "t-test" of significance and is used to establish which of the "choice" means, or in general terms, the group means are significantly different from the others.

The form of the "t-test" ratio for determining a significant difference between two means is:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{s_{\bar{X}_1 - \bar{X}_2}} \quad (6)$$

Where \bar{X}_1 is the mean of one of the groups, \bar{X}_2 is the mean of the other group being compared to the first one, and $s_{\bar{X}_1 - \bar{X}_2}$ is the standard error of the difference between two means.

In the case of an analysis of variance design involving several groups the most efficient method of finding the standard error of one of the means, is through the use of the mean square within groups as the estimate of the population variance. This method is based upon the assumption of homogeneous variance, and the fact that:

$$s_{\bar{x}} = \frac{s}{\sqrt{n}}$$

where $s_{\bar{x}}$ = the standard error of the mean.

s = the square root of the mean square within groups.

n = the number of subjects or observations in a given group.

Now, the standard error of the difference between two means is given by the formula:

$$s \bar{x}_1 - \bar{x}_2 = \sqrt{\frac{s^2}{n_1} + \frac{s^2}{n_2}}$$

$$= s \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}$$

where $s \bar{x}_1 - \bar{x}_2$ = the denominator of the t-ratio (the standard error of the difference between two means).

s = the square root of the mean square within groups.

n_1 = the number of observations in group 1.

n_2 = the number of observations in group 2.

Thus formula (6) may be written in the form:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{s \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}} \quad (7)$$

and the degrees of freedom available for entering the table of "t" will be those associated with s^2 , the mean square within groups, as determined in the analysis of variance.

For purposes of illustration, suppose that when the F-ratio was applied to the example involving Item 1, and the Engineering Student Body, it was found to be significant at the 5 per cent point. This would necessitate the application of the "t-test" of significant difference between means to the four "choices" taken two at a time. Due to the practical limitations of space, time, and the preservation of continuity of thought, only one t-test will be performed, utilizing the data of choices A and B,

respectively, to demonstrate the general approach discussed in the foregoing. Substituting in formula (7):

$$t = \frac{\bar{X}_A - \bar{X}_B}{s \sqrt{\frac{1}{n_A} + \frac{1}{n_B}}}$$

$$t = \frac{3.285 - 2.285}{\sqrt{1.19} \sqrt{\frac{1}{7} + \frac{1}{7}}}$$

$$t = \frac{1}{1.09 \sqrt{\frac{2}{7}}} = \frac{1}{.582} = 1.72$$

Now, with 24 degrees of freedom, the "t" table, Table V, Edwards,²⁵ is entered, and it is found that a value of "t" as large as 1.72 would occur in random samples of this size between 10 and 20 per cent of the time due to chance factors alone. On this basis one would accept the null hypothesis, namely, that there is no statistically significant difference between the mean of Group A and that of Group B. It should of course be noted that since the F-ratio showed no significant difference in the example originally, substitution of the same figures in the formula for the t-test should yield the same condition of "no statistically significant difference."

With the application of the analysis of variance to the last

²⁵Edwards, op. cit., p. 88.

of the 32 Form A sheets, the intra-stratum analysis is completed, and, depending upon the results, the investigatory personnel prepare to undertake the task of effecting the number of Form B sheets necessary to complete the total analysis of the problem area. The Form B sheets are analyzed under Step 3 of this phase, and the procedures associated with this Step are discussed in the next section. As a matter of convenience for those readers who might be interested, a summary of the computations associated with Step 2 of phase C is presented in Appendix A, page 231.

Step 3--Analyzing the Data, Inter-Strata.

After the analysis of variance of Step 2 of this phase is applied to each of the 32 Form A sheets of the example, the investigatory personnel will know which choice, A, B, C, or D of each of the eight items composing the questionnaire is "statistically significantly" preferred by a particular constituency. For those items of the questionnaire that did not reveal a "statistically significant" preference of one of the four choices, or at least a substantial majority of the constituencies favoring one of the choices, a Form B must be effected. Form B differs from Form A only to the extent that it is an inter-strata diagram instead of an intra-strata one. Thus, Form B may be analyzed by the same technique applied in Step 2, namely, the analysis of variance, single classification. An example will be used to clarify and demonstrate the procedures involved.

Suppose that the following situation, shown in tabular form,

results from the analysis of the Form A sheets:

TABLE IV
SIGNIFICANTLY PREFERRED CHOICES RESULTING
FROM ANALYSIS OF FORM A SHEETS

Constituencies	Items							
	1	2	3	4	5	6	7	8
I. Engineer- ing, Student Body.	A	No Choice	C	A	D	B	A	B
II. Engineer- ing, Faculty.	B	C	C	A	D	B	B	No Choice
III. Pharmacy, Student Body.	A	No Choice	C	A	D	A	C	B
IV. Pharmacy, Faculty.	A	A	C	B	D	A	D	C

Those cells showing "no choice" indicate that the opinions, attitudes, or judgments of a particular constituency concerning the choices of a certain item, were of such a nature that no one "choice" appeared to be "significantly" preferable. Considering Table IV, it is readily noted that items 3 and 5 demand no further analysis, since choices C and D of the respective items, were unanimously selected as the most preferable by all constituencies. Items 1 and 4 do not demand further analysis on the basis of a definite majority of the constituencies favoring one of the choices more than any of the others. However, items 2, 6, 7, and 8 need further analysis to discover a more definite pattern of opinion of the combined constituencies than is indicated in Table IV. The aforementioned pattern, providing one exists, may be found

through the utilization of Form B, which differentiates between the choices of different constituencies, as opposed to Form A which differentiates between the choices of the same constituency. As an example, suppose the investigatory personnel was going to further analyze item 2. If such was the case, only choices A and C of all the constituencies would be considered. This action is naturally based upon the fact that only choices A and C were indicated as significantly preferred in the original analysis by two of the four constituencies. In this case a Form B is used, and might appear as follows:

FIGURE 2

ILLUSTRATION OF SAMPLE WORKSHEET FOR
INTER-STRATA ANALYSIS, FORM B

<u>Item 2</u>	<u>Choice A</u>								
Constituencies:	I. Engineering Student Body, size--7.								
	II. Engineering Faculty, size--5.								
	III. Pharmacy Student Body, size--6.								
	IV. Pharmacy Faculty, size--4.								
	<u>X</u>	<u>I</u> <u>x²</u>	<u>X</u>	<u>II</u> <u>x²</u>	<u>X</u>	<u>III</u> <u>x²</u>	<u>X</u>	<u>IV</u> <u>x²</u>	
	4	16	3	9	3	9	4	16	
	3	9	2	4	2	4	4	16	
	2	4	3	9	4	16	4	16	
	1	1	2	4	1	1	3	9	
	2	4	3	9	2	4			
	3	9			3	9			
	3	9							
ΣX	18		13		15		15		$\Sigma X_t = 61$
ΣX^2		52		35		43		57	$\Sigma X_t^2 = 187$
$(\Sigma X)^2$	324		169		225		225		$(\Sigma X_t)^2 = 3721$
$M =$	$\frac{18}{7} = 2.571$		$\frac{13}{5} = 2.6$		$\frac{15}{6} = 2.5$		$\frac{15}{4} = 3.75$		$N = 22$

If the analysis of variance of the data reveals "no statistically significant difference" between the mean scores of the four respective constituencies, then choice A would be considered the preferred choice of all the constituencies. On the other hand, if a significant difference between the constituencies was indicated, a Form B would be negotiated on choice C. Then if the analysis of choice C showed "no statistically significant difference" between the constituencies, choice C would be considered the preferable choice of the total sample. However, if a "statistically significant difference" should exist, the investigatory personnel should include this information in its report to the commissioning agency, and allow the ultimate decision concerning the respective "choices," A and C to be made by that body. Naturally, Items 6, 7, and 8 can be analyzed similarly, and upon consulting Table IV (Significantly Preferred Choices Resulting From Analysis of Form A Sheets), it would appear that Item 7 might demand the greatest amount of such analysis because of the indication of four significantly preferred choices by the constituencies.

In order to demonstrate the analytical procedures of this Step, it will be recalled from an earlier discussion on page 107 that Items 2, 6, 7 and 8 are items that would necessitate Form B sheets, and further analysis. It may also be recalled that the size of the sample representing constituency I (Engineering Student Body) was 7; constituency II (Engineering Faculty), 5; constituency III (Pharmacy Student Body), 6; and constituency

IV (Pharmacy Faculty), 4. Reproducing only that segment of Table IV which is pertinent to, and important in, the situation presently under consideration, Table V pictures the results.

TABLE V
SIGNIFICANTLY PREFERRED CHOICES
FOR SELECTED ITEMS

Constituencies	Items			
	2	6	7	8
I. Engineering Student Body	No significant choice	B	A	B
II. Engineering Faculty	C	B	B	No significant choice
III. Pharmacy Student Body	No significant choice	A	C	B
IV. Pharmacy Faculty	A	A	D	C

Considering the items shown in Table V separately it becomes apparent in item 2 that an inter-strata analysis should first be run on choice A. If the "A" choices of constituencies I, II, and III do not differ significantly from IV, then choice "A" may be considered preferable for Item 2. However, if two of the constituencies differ significantly from IV in the A choice, a similar analysis must be run on choice C. If the results favor C, then C can be considered the preferable choice of Item 2. However, if the analysis of C proves to be inconclusive, then the investigatory personnel notes in its report to the commissioning agency

that choice A or choice C might be considered as "preferred," and the ultimate decision concerning these choices of Item 2 is left to the commissioning agency. Item 6 shows that choice A or choice B might be preferred choices, thus an analysis of variance is run on choice A over the four constituencies to determine whether there is a statistically significant difference between the rankings of choice A by constituencies I and II as compared with constituencies III and IV, and through a process analogous to that employed in the case of Item 2, the preferred choice, if any, may be discovered. Similarly, Item 7 and Item 8 may be analyzed in order to discover the preferred choice of the constituencies, if there is such preference.

To clarify the actual analysis of variance of Form B, pertinent parts of Figure 2 are reproduced as Figure 3 and analyzed. The analysis of the sum of squares between groups in Form B demonstrates the analysis under the condition of unequal group size.

FIGURE 3

ILLUSTRATION OF THE PREPARATION OF DATA FOR ANALYSIS
OF VARIANCE, APPLIED TO FORM B DATA FROM FIGURE 2

Item 2

Choice A

Constituencies: I, II, III, IV.

	I		II		III		IV		
	X	X ²	X	X ²	X	X ²	X	X ²	
	4	16	3	9	3	9	4	16	
	3	9	2	4	2	4	4	16	
	2	4	3	9	4	16	4	16	
	1	1	2	4	1	1	3	9	
	2	4	3	9	2	4			
	3	9			3	9			
	3	9							
ΣX	18		13		15		15		$\Sigma X_t = 61$
ΣX^2		52		35		43		57	$\Sigma X_t^2 = 187$
$(\Sigma X)^2$	324		169		225		225		$(\Sigma X_t)^2 = 3721$
M	2.571		2.6		2.5		3.75		n = 22

Computations:

$$1. \text{ Total Sum of Squares} = \Sigma X_t^2 - \frac{(\Sigma X_t)^2}{n}$$

$$= 187 - \frac{3721}{22}$$

$$= 187 - 169.136 = 17.864$$

$$2. \text{ Between Groups} = \frac{(\Sigma X_I)^2}{n_I} + \frac{(\Sigma X_{II})^2}{n_{II}} + \frac{(\Sigma X_{III})^2}{n_{III}} + \frac{(\Sigma X_{IV})^2}{n_{IV}} - \frac{(\Sigma X_t)^2}{n}$$

$$\frac{(18)^2}{7} + \frac{(13)^2}{5} + \frac{(15)^2}{6} + \frac{(15)^2}{4} - \frac{(61)^2}{22}$$

$$\begin{aligned}
 \text{Between Groups} &= \frac{324}{7} + \frac{169}{5} + \frac{225}{6} + \frac{225}{4} - \frac{3721}{22} \\
 &= 46.286 + 33.8 + 37.5 + 56.25 - 169.136 \\
 &= 173.836 - 169.136 \\
 &= 4.7
 \end{aligned}$$

$$\begin{aligned}
 3. \text{ Within Groups} &= \text{Total} - \text{Between Groups} \\
 &= 17.864 - 4.7 \\
 &= 13.164
 \end{aligned}$$

4. Check of within groups value by direct computation:

$$\begin{aligned}
 &\frac{\sum X_I^2 - (\sum X_I)^2}{n_I} + \frac{\sum X_{II}^2 - (\sum X_{II})^2}{n_{II}} + \frac{\sum X_{III}^2 - (\sum X_{III})^2}{n_{III}} + \frac{\sum X_{IV}^2 - (\sum X_{IV})^2}{n_{IV}} = \\
 &52 - \frac{324}{7} + 35 - \frac{169}{5} + 43 - \frac{225}{6} + 57 - \frac{225}{4} = \\
 &52 - 46.286 + 35 - 33.8 + 43 - 37.5 + 57 - 56.25 = \\
 &187 - 173.836 = 13.164 \\
 &13.164 = 13.164
 \end{aligned}$$

Composing the variance table.

TABLE VI

VARIANCE TABLE OF CONSTITUENCIES, ITEM 2, CHOICE A

Source of Variation	Sum of Squares	d. f.	Mean Square	F
Between Groups	4.7	3	1.567	$\frac{1.567}{.731} = 2.143$
Within Groups	13.164	18	.731	
Total	17.864	21		

Entering Table VIII of Edwards²⁶ with 3 and 18 degrees of freedom respectively it found that a value of $F = 2.143$ is not significant at the 5 or 1 per cent points²⁷ and therefore the null hypothesis that there is no statistically significant differences between the mean scores of the four constituencies' rankings of choice A on Item 2 must be accepted. On the basis of this finding the investigatory personnel may conclude that choice A could be considered a preferable choice by the combined constituencies.

Had the results indicated the rejection of the above null hypothesis, a similar analysis on choice C would have been run, and depending upon the outcome of that analysis, a conclusion could have been reached, as previously described. Comparable analyses would be run on each of the "indicated" choices of Items 6, 7, and 8, and a similar dialectic would be employed in attempting to reach a conclusion.

Chapter IV, which presents an actual rather than hypothetical application, provides additional illustrations of the procedures described here for making "inter-strata" analyses.

Step 4--Trend Analysis of Enumerative Data.

This step is the last one of that phase of the methodology which deals with the general subject of the treatment of the data. It should be pointed out that in some types of problem areas this step will not be necessary to the methodology, and

²⁶Ibid., p. 88.

²⁷See footnote 24, p. 101.

may be omitted. However, in those problem areas where enumerative data have been taken from records maintained over a given period of time, a general summary and evaluation may be efficiently effected through application of the technique of trend analysis.

Statistically speaking, trend is one of four factors of change in a time series. In practice the term "time series" is ordinarily restricted to economics, although any series of observations made repeatedly over a period of time is in reality a "time series."

Time series analysis, as now practiced, is either curve-fitting for the purpose of description, or regression for the purpose of estimating, predicting, or both. For that reason a series of data ordered by time is assumed to be subject to sources of variation expressible in terms of: (1) long-time trends, (2) short-time seasonal variations, (3) longer-time cyclical factors, and (4) irregular varied components.

Neiswanger has pointed out that four separate objectives are reached through the analysis of time series: (1) planning for the future is facilitated; (2) it is possible to measure the statistical position of an individual concern; (3) controls to reduce the influence of a variable can be more intelligently applied; and (4) interested parties are better able to understand, interpret, and anticipate the course of events.²⁸

Since the enumerative data rendered by some problem areas to which the methodology may be applied contain elements of time series data, it is possible to apply certain principles of time

²⁸William A. Neiswanger, Elementary Statistical Methods (New York: The MacMillan Company, 1949).

series analysis and thus enable the investigatory personnel to make more informed estimates and predictions concerning the problem area. Although such data could be analyzed in terms of seasonal variation, cyclical variation, irregular component variation, or trend variation, it would appear that the trend analysis variation would prove to be the most profitable and efficient method of rendering meaningful results for use by the investigatory personnel in the process of decision-making concerning the recommendations to be made to the commissioning agency.

Although there are a number of methods available for estimating trends, the one that is utilized in the proposed methodology is the least-squares straight-line method. A trend line computed by the method of least squares is such that the sum of the squares of the deviations of the observed values about it is a minimum. Consequently, the least-squares line is sometimes called the "line of best fit."

The proposed methodology takes into account only straight-line trends. The underlying reason for this lies in the fact that straight-line functions are the most generally useful members of the family of trends, although second-degree parabolas and third-degree curves provide greater flexibility in "fitting" some types of data. Due to the nature of the enumerative data found to be associated with the problem areas of student activities programs, the straight-line functions of trend analysis serve the purpose in excellent fashion. Generally speaking, the

use of second- and third-degree functions in analyzing such data would actually be an error of application leading to spurious findings and conclusions. Thus, when the term "least squares" is used here, reference is being made to the straight-line function only, and does not include the more complex parabolic forms.

The expression of a straight line may be written as follows:

$$Y_c = a + bX \quad (8)$$

where Y_c represents the computed values of the trend; "a" is the value of the trend line at the time $X = 0$, or in other words at that time considered to be the starting time of the trend; "b" is the average rise or decline in one unit of time; and X represents time, usually one month, six months, or one year.

When it appears, upon consulting a graph of the plotted observations of the various points (X, Y) , that a straight line may provide a reasonable description of the trend, the task of obtaining an expression for the trend resolves itself into the computations for "a" and "b." To obtain the values of these two unknowns, the normal equations²⁹ resulting from minimizing³⁰ with respect to "a" and "b," the expression $\sum (\bar{Y} - (a + bX))^2$ are employed and solved simultaneously. The two equations are:

²⁹Sets of equations like those shown in (9) are often called "normal equations."

³⁰"Minimizing" is an operation associated with the area of "maxima" and "minima" found in differential calculus. In this case "minimizing" more specifically refers to the "partial differentiation" of $\sum Y - (a + bX)^2$ with respect to the parameters "a" and "b". For further explanation see the section of any differential calculus book that deals with "maxima" and "minima."

$$\begin{aligned}\sum Y &= Na + b\sum X \\ \sum XY &= a\sum X + b\sum X^2\end{aligned}\tag{9}$$

In these equations Y represents the original ordinate values in the time series being considered, N is the number of values, and X symbolizes units of time.

To demonstrate how the least-squares method of estimating trend operates, suppose that a study of the area of university-wide dances has been requested by the Dean of Students Office. After gathering all of the data of an attitudinal nature, the attendance figures of six university-wide dances per year, three in the Fall semester and three in the Spring semester, are gathered for the purpose of discovering if there is a trend upward or downward in attendance of these dances. The period of the past six years, with a semester considered as a unit of time, is chosen for analysis, with the hope that a trend may be discovered that will supplement other information possessed by the investigatory personnel, and thus aid them in making a recommendation for more or less of such calendar events. All data utilized in this example are hypothetical, and are shown in Table VII.

TABLE VII

TOTAL ATTENDANCE FIGURES OF THREE UNIVERSITY-WIDE
DANCES PER SEMESTER

Fall Semester 1950 Through Spring Semester 1956

Calculation of Least Squares Straight Line
Fall Semester 1950 Origin

Semester	Hundreds of Paid Admissions	X	X ²	XY	Ordinates of Trend
	Y				$Y_C = 32.2177 - .7517X$
	a	b	c	(axb) d	e
F1950	33	0	0	0	32.2177
S1951	30	1	1	30	31.4660
F1951	31	2	4	62	30.7143
S1952	30	3	9	90	29.9626
F1952	29	4	16	116	29.2109
S1953	28	5	25	140	28.4592
F1953	28	6	36	168	27.7075
S1954	28	7	49	196	26.9558
F1954	27	8	64	216	26.2041
S1955	25	9	81	225	25.4524
F1955	25	10	100	250	24.7007
S1956	23	11	121	253	23.9490
Total	337	66	506	1746	

Column "a" shows the attendance figures based upon hundreds of paid admissions for the three dances per semester. In this example X represents one semester units of time. The Fall Semester of 1950 has been assigned the X value of zero, the Spring Semester of 1951 is therefore considered to be + 1, the Fall of 1951, + 2, the Spring of 1952, + 3, and so on until all units of the total period have been assigned a value. The semester assigned the X value of zero is the year of origin for the trend.

To obtain the values of "a" and "b" for equation (8), the appropriate values, such as, the summations of X, Y, XY, X^2 , and N are taken from Table VII, substituted in the simultaneous normal equations (9), and the values of "a" and "b" are found.

To demonstrate:

$$\begin{aligned}\Sigma Y &= Na + b\Sigma X \\ \Sigma XY &= a\Sigma X + b\Sigma X^2\end{aligned}\quad (9)$$

Substituting:

$$337 = 12a + 66b \quad (I)$$

$$\underline{1746 = 66a + 506b} \quad (II)$$

Multiplying equation (I) by 11, and equation (II) by 2, so that "a" may be eliminated:

$$3707 = 132a + 726b \quad (III)$$

$$\underline{3492 = 132a + 1012b} \quad (IV)$$

Subtracting (IV) from (III):

$$215 = -286b$$

$$b = -.7517$$

Substituting the obtained value of "b" in (I):

$$337 = 12a - 49.6122$$

$$337 + 49.6122 = 12a$$

$$12a = 386.6122$$

$$a = 32.2177$$

Therefore, the equation for the least-squares trend line fitted to these data is, in hundreds of paid admissions:

$$Y_C = 32.2177 - .7517X \quad (10)$$

Perhaps it would be wise at this point to discuss the meaning of the value of the coefficients "a" and "b" in equation (10). The "a" value in (8) was previously described as the value of the trend line at the time $X = 0$. Since the Fall Semester 1950 is the semester of origin of the trend in this illustration, the value of "a", 3,221.77, is the value of the attendance trend for that semester. Thus, if the trend equation (10) is used, the value of X for the Fall Semester 1950 is zero, and:

$$\begin{aligned} Y_G &= 32.2177 - .7517(0) \\ &= 32.2177 \quad \text{or} \quad 3,221.77 \text{ paid admissions.} \end{aligned}$$

The "b" value in equation (8) of the straight line is the slope of the trend line. If its algebraic sign is positive, the trend is an increasing one for the period; if the sign of "b" is negative, the trend has a downward or decreasing tendency. In the present case, represented by equation (10), the value of "b" is $-.7517$, and therefore it may be concluded that the paid attendance of three university-wide dances per semester decreased at the average rate of 75.17 admissions per semester during the six-year period of the Fall Semester 1950 through the Spring Semester 1956. Since "b" is an average it may be considered a "typical" value of the time series. Thus, the value of "b" indicates that the paid admissions have declined persistently, and if generalizations may be based upon this past experience a continued decline may be expected in the future.

Individual values of the trend may be calculated by substituting values of X in formula (10) of the straight line. For

example, the trend value for the Spring Semester 1954 is (with $X = 7$):

$$\begin{aligned} Y_C &= 32.2177 - .7517(7) \\ &= 26.9558 \quad \text{or} \quad 2,695.58 \text{ admissions} \end{aligned}$$

Actually the paid admissions for the Spring Semester 1954 was 2800, indicating that possibly a seasonal or a cyclical influence was involved, thus causing the attendance to be higher than the expectations for that semester.

From equation (10) it is also possible to predict the most probable total attendance for the three dances of the Spring Semester 1957. If the values of Table VII are extended to the Spring Semester 1957, the value of X would be 13. Then, the necessary extrapolation, which is the basis of the prognostication, is made by substituting in formula (10) as follows:

$$\begin{aligned} Y_C &= 32.2177 - .7517(13) \\ &= 22.4456 \quad \text{or} \quad 2,244.56 \text{ paid admissions.} \end{aligned}$$

In other words, the three university-wide dances combined total paid admissions for the Spring Semester should be approximately 2,245, if the trend of equation (10) continues.

Although only one example has been used to describe the use of trend analysis in the methodology, the scope and possibility of application of such time series analysis should be obvious. For those readers who might desire further information concerning such analyses, an excellent treatment of the subject may be found in Neiswanger.³¹

³¹Neiswanger, op. cit., p. 108.

With the completion of Step 4, the general phase of the methodology dealing with the treatment of the data comes to a close. At this point the investigatory personnel should be in possession of all the information to be used in making decisions concerning its findings and in formulating recommendations to the commissioning agency.

D. Procedures of Reporting and Recommending

In this phase of the methodology, the subject of making statistical inferences concerning differences and trends, and the general area of decision making in regard to the recommendations that are to be made to the commissioning agency are discussed. A recommended efficient report form, the background and role of the reporter, plus the provisions for other studies in the future, are also covered in this fourth phase of the methodology. Since this phase deals with decision-making, recommending, reporting, and laying the groundwork for possible future studies, it is obvious that any carelessness or error made at this stage of the methodology would not only nullify any of the previous effort, but would prove most disheartening to those individuals who gave of their time and energy, respondents included, in attempting to make the study of the problem area a meaningful and contributory thing. Although the descriptions and derivations of this phase of the methodology are not as long and definitive as some of those found in the first three phases, the possibilities and implications of this segment make it one of the most important to the successful functioning of the methodology.

Step 1--Making Statistical Inferences Concerning Difference and Trend.

After completing Step 4 of phase C the investigatory personnel should have in its possession all of the facts derived from the statistical analyses of attitudinal and enumerative data.

Upon considering this information, certain conclusions concerning differences between "choices" of an item, and some of those associated with the trend analysis of the enumerative data, are obvious. In such instances, the only further considerations, prior to the inclusion of said inferences in the recommendations to the commissioning agency, are those dealing with unwise courses of action, and those that deal with the possible altering of areas of long-established precedent. These problems, in the majority of cases, cannot be solved on the basis of the judgment of the investigatory personnel. In those areas where there is debate and general disagreement, the investigatory personnel should, if at all possible, consult with higher administrative personnel of the institution who are responsible for and concerned with the area under discussion. If such consultation is not possible, the investigatory personnel should state only the factual information, make no recommendation, and defer the decision of any action that might be taken, to the commissioning agency. This should in no way be construed as a weakness in the area of investigatory personnel decision-making and recommendation; to the contrary, it is a decided strength. The investigatory personnel is assigned the task of procuring factual information, and making recommendations where it feels justified

and capable of doing so; however, in the case of debatable action, the greatest service which the investigatory personnel can perform is that of reporting in an unbiased fashion the factual information which its investigation has uncovered.

This alone is a great contribution to the commissioning agency or the administrative officials of the institution who might be responsible for any decisions made concerning the area causing the difficulty.

Of course, all of the inferences to be made would not come under the classification of the foregoing. There will be instances where the "choices" and "trends" are not clear cut and obvious, and at the same time would not lead to courses of unwise action nor affect areas of long-standing precedent. In such cases, the investigatory personnel is faced with the problem of decision concerning its recommendations to the commissioning agency. As a result of the many possible inferences that might be drawn concerning those items in which the respondents indicated no significant preference for any one of the possible choices, or concerning those "trends" which might have been considered rather indefinite, the investigatory personnel is forced to "elaborate" in its inference-drawing processes.

The general aspect of elaboration is that of broad consideration of the many variables that might apply in a given situation. Elaboration, therefore, is a process which is limited by two factors: (1) the analysts' abilities, patience, and purposes; and (2) the nature of the data. Therefore, the ingenuity

of the analysts coupled with the knowledge gained from the treatment of the data forms the source and basis of any consideration of other variables in the process of making decisions concerning recommendations to the commissioning agency.

The design of the methodology is such that consideration is given to the selection of the personnel composing the analytical team, and the statistical procedures involved are of such a nature that the data are thoroughly treated, and thus the process of elaboration is decidedly simplified. Actually, the process resolves itself into one of "interpretation," "explanation," and "specification." With the consideration of these three aspects of the analysis of undetermined "choices," and indefinite "trends," the analysts may be sure that either a decision is, or is not, supportable to the extent that a recommendation may be made.

"Interpretation" is the process of considering the possibility of an intervening variable as a third factor in the original relationship which initially was considered to be composed of only two variables. To illustrate, suppose that active fraternity members of a large university are categorized according to whether they attended public or private secondary schools. Then, on the basis of a questionnaire item designed to discover what the initial experience of becoming a fraternity member meant to the individual, it was discovered that there was no significantly preferred "choice," but by means of counting the "favorable" responses, it was found that more men from public

secondary schools experienced a feeling of great accomplishment upon initiation than did those men from private secondary schools. Based upon this evidence, could the analysts decide that a recommendation stating that public school graduates would probably become better fraternity men as a result of a greater initial feeling of satisfaction with becoming an active fraternity member than would private school graduates?

Allowing for the fact that the example is designed to demonstrate the principle of "interpretation," and that the "item" chosen is not one that would probably be found in a good questionnaire, the point to be made is that the analysts should be sufficiently informed of the secondary school situation to realize that high school fraternities are prohibited by the administration in public secondary schools, while on the other hand they are allowed in the private schools. Thus, they should be aware of the high probability of private school graduates having had prior experience with fraternity membership, thus causing it to lose some of its initial luster and appeal, which would be reflected in those persons' responses. Thus, an intervening variable in terms of prior fraternity membership could logically be introduced, and with it the realization that the categorization of "public" and "private" secondary school graduates did not furnish an equitable basis for comparison. Therefore, no recommendation concerning this particular item could be made, based upon the "interpretation" of a possible intervening variable.

The process of "explanation" is essentially the same kind of

reasoning as "interpretation" except for the fact that it involves an "antecedent variable" rather than an intervening variable. Thus, a distinguishing mark of "explanation" as opposed to "interpretation" is the fact that it involves "causality" of such a nature that both of the original variables are affected instead of one variable as is the case in "interpretation." Therefore, "explanation" is invariably associated with relationships of spurious correlation. For example, it is known that there is a high correlation between the increase in the number of drownings throughout the months of July and August and the increased amount of ice cream sold during the same period. This instance of "spurious" correlation requires "explanation" before rendering any decision concerning recommendations associated with the relationship. Obviously the antecedent variable in this case is that of the increasingly hot weather which causes an increased amount of ice cream to be sold, and at the same time a greater number of people to swim, which in turn leads to an increase in the number of drownings during the months of July and August.

This naturally raises the question: "How can analysts be certain that a relationship between two variables is actually a causal one and not merely a spurious correlation?" If through the processes of "interpretation" and "explanation" the analysts have applied all known possible relevant factors without weakening the probability of the relationship materially, then the inference of true causal relationship can usually be made. Thus, application of the processes of "interpretation" and "explanation"

in analyzing the inconclusive findings increases the probability of making valid and meaningful recommendations, and leaves only the process of "specification" to be applied in the analysis for inferences and subsequent recommendations.

Whereas in "explanation" and "interpretation" the question asked is whether the use of other possibly relevant variables will cause the reduction or disappearance of an observed relationship, the goal of "specification" is quite different. In this case "causal" relationship is modified by specifying conditions under which the original relationship will exist in greater or lesser intensity.

"Specification" may be illustrated by returning to the example of the initial experience of "public" and "private" secondary school graduates in becoming fraternity members. After applying "interpretation" and deciding that there was the intervening variable of prior fraternity membership possible for the "private" school graduate, the investigatory personnel might continue the analysis by applying "specification." This would be accomplished by specifying the circumstance of possible prior fraternity membership for the private school graduate, thus lessening the degree of enthusiasm experienced when becoming an active fraternity man in college; and then in turn, specifying the greater initial enthusiasm of fraternity membership of the public school graduate, based upon the fact of being unable to become a fraternity man prior to entering college.

"Specification," then, is the process of describing conditions

under which a particular relationship may exist or not exist, or may exist to a greater or lesser degree. Like "explanation" and "interpretation," "specification" tends to enhance the meaning and acceptability of inferences growing out of causal analyses. Thus, the methodology through its processes of investigatory personnel selection, its rank-ordering data-gathering instrument, its application of the analysis of variance and trend analysis, and its provision for "elaboration" by the personnel through the application of "interpretation," "explanation," and "specification," will yield reliable results as a basis for valid decision-making concerning recommendations to be made to the commissioning agency.

Step 2--Preparing the Written Report.

The report to the commissioning agency must be of a scientific nature. The preparation of a scientific report differs significantly in one fundamental respect from all other types of literary effort. It must be a self-conscious presentation of negative and positive evidence, along with the techniques by which the evidence was obtained. Problems of communication and clarity must be worked out in relationship to the audience being contacted, and since the report should be a cumulative body of verifiable fact and information, it must be presented in such a fashion that its data may be reiterated, its logic easily followed, and its general significance ascertained.

Since the report represents a considerable amount of effort and work on the part of numerous persons, special effort should

be made to insure that the general contents be presented in the best form possible. As an aid toward the attainment of this end a few "interrogative reminders" such as the following are useful.

1. Is the problem stated definitely and clearly? Out of the many possible ramifications of the problem, inform the reader clearly and definitely of those specific aspects of the problem that are dealt with in the report.

2. Has sufficient historical and observational background been included to lead logically to the problem? Such discussion should inform the reader of the general rationale of the problem, its possible connection with existing theory on the subject, and generally placing the problem in its proper context.

3. Has the problem been stated in commonly acceptable scientific terms? The author of a scientific report should not develop his own terminology, nor should he use complex and esoteric terminology. A constant effort should be made to describe and demonstrate in the simplest manner possible.

4. Is the plan of research and its logic apparent? The report should inform the reader as to the plan of procedure as it was originally designed, with its underlying logic and proof, and the plan as it was actually realized during the course of the work.

5. Have the observations and findings been identified with the various sub-problems that comprise the total problem area? The author of the report should be certain that the necessary data have been included, identified, and used with the proper sub-

problem area. This makes for greater clarity and readability.

6. Is the problem properly summarized, and are areas of further research properly indicated? The summary of a problem should carry the knowledge contributed to the problem area by the present research, and suggest possible hypotheses for further study of the ramifications of the problem resulting from the present study.

The use of the above reminders with the following suggested outline should result in a scientific report which will cover the problem area in a thorough and efficient manner. The suggested outline is composed of six basic parts with appropriate sub-headings under each part, as follows:

I. Problem Area Definition.

- A. Definition of Problem Area by Commissioning Agency.
- B. Statement of Purposes of the Research.
- C. Plan of the Study and Basic Assumptions.
- D. General Need for and Significance of the Study.

II. Problem Area Orientation.

- A. Related Research.
- B. General Hypotheses.
- C. General Summary of Findings of Present Study.

III. Sample Selected.

- A. Population Represented.
- B. How Selected.
- C. Representativeness.
- D. Adequacy of Size.

IV. Methods of Studying the Problem Area.

- A. Data-Gathering Instrument.
- B. Procedure of Administration.
- C. Analytical Techniques Employed.

V. Findings of the Problem Area.

- A. Treatment of the Data.
- B. Results of the Treatment.
- C. Uninterpreted Data.

VI. Conclusions and Recommendations.

- A. What Has Been Revealed About the Problem Area.
- B. Value Judgments and Subjective Thought Concerning the Problem Area.
- C. Possible Areas for Further Study.

It is obvious that the report can be prepared by "filling in" the suggested outline, and by checking the content for clarity and ease of communication through application of the "interrogative reminders." It should further be noted that the phases A, B, and C of the methodology should provide all of the information required by the six basic parts and accompanying sub-headings of the suggested outline of the report.

The preparation of the report is actually the final stage of the research process. The report conveys to interested persons the results and recommendations of the investigatory personnel. Sufficient detail and clarity of arrangement must be provided so that each reader may comprehend the content and determine, on the basis of the material presented, the validity and reliability of said findings, results, and recommendations.

Step 3--Preparation for Making Oral Report.

The individual, group, or office originally appointed to the task of investigation should be responsible for any verbal report or explanation of the written report requested by the commissioning agency. However, if this personnel does not possess sufficient background in the statistical methods, other analytical procedures, or any of the general operations of the methodology, to give a clear and adequate description and interpretation of how conclusions were drawn and recommendations were made, technicians should be employed as supplementary personnel to aid the reporter in the task of clarifying the written report to the commissioning agency.

Thus, the supplementary personnel can defend the work of the investigatory personnel against unfair criticism or possible distortion of the reported facts and recommendations. Questions relative to the statistical rationale associated with adequately-sized samples, tests of significant difference, levels of confidence, and many others of similar nature, can more easily be answered to the satisfaction of the interrogator. In general, the presentation of the written report can be enhanced if it is accompanied by explanations from persons thoroughly familiar with the problem area, the procedures of the investigatory personnel in arriving at conclusions and recommendations, and finally, the statistical and technical operations of the methodology.

The reporter should be able to communicate ideas in a clear

concise fashion, and have sufficient self-control to remain calm and non-defensive under an attack by a possible antagonist. The reporter's job is one of explanation, interpretation, and good judgment. If an error, oversight, or other possibility is brought to light during discussion of the study with the commissioning agency, the reporter should acknowledge the fact candidly and make whatever adjustments and alterations that might be possible, without being defensive or resentful.

It should constantly be kept in mind that the investigatory personnel is only responsible for reporting and recommending. The responsibility for ultimate decision is that of the commissioning agency. If the findings and recommendations have been adequately reported, after honest, thorough, and reliable research, the investigatory personnel has fulfilled its obligations under the requirements of the methodology.

Step 4--Providing for Other Studies.

Although the action prescribed by this Step might well be considered an unnecessary nicety in some research quarters, it is a fundamental of public relations that research workers have too long overlooked. The prescribed action is that of sending notes of appreciation to all personnel that contributed in any way to the administration or operation of the investigation. If the problem area under study is of sufficient importance to the campus population, and providing there is no objection by the commissioning agency, or possibly higher administrative officials, a press release should be sent to the campus news-

paper for publication. Besides giving the basic facts, findings, and recommendations for action, the article should specifically mention the various offices and personnel who gave of their time and energy in conducting the study.

As a result of this type of effort, the campus becomes more aware of the research projects that have been completed, and those that are in progress. The net result is a greater campus awareness of scientific research and its possibilities, thus creating a more cooperative atmosphere for future research efforts. There is an inescapable public character to research, and the investigator who is willing to share both the strengths and weaknesses of his scientific work with those persons who have had any part of it, soon has drawn the attention of others to the importance of cooperation and understanding by the many participants in the realization of better research.

Since research should be a continual on-going process, it is most important that colleges and universities make every effort to keep their campus populations well informed about good research practices, and thus wholeheartedly ready to cooperate and participate in research projects which might request their services. Through such actions as notes of appreciation, newspaper articles commending the cooperation of respondents and participating personnel, plus the establishment of an Office of Research and Development where abstracts of all completed research may be found, plus information of research currently in progress, the desired results may be effected.

Description of the above Step, "Providing for Other Studies,"

completes the presentation of the total methodology for evaluating the need, scope, operation, and implementation of any designated segment of a student activities program. The next chapter describes in detail the application of these procedures in conducting an actual study of fraternal organizations in an urban university. The purpose of the succeeding chapter is to demonstrate the usability of the methodology under "field" conditions.

CHAPTER IV

APPLICATION OF EVALUATION METHODOLOGY TO A SEGMENT OF THE STUDENT ACTIVITIES PROGRAM OF WAYNE STATE UNIVERSITY

Background and Setting

Wayne State University is located in the heart of the metropolitan area of Detroit, Michigan, and has a total enrollment of approximately 18,500 students.

The University structure is composed of eleven schools and colleges that carry out an educational program which can basically be divided into three divisions: (1) undergraduate, (2) graduate, and (3) graduate-professional.

Those schools and colleges that maintain undergraduate and graduate programs of education are: (1) Business Administration, (2) Education, (3) Engineering, and (4) Liberal Arts. Those maintaining an undergraduate program only are: (1) Nursing, (2) Pharmacy, and (3) Mortuary Science. Three schools maintain graduate-professional programs: (1) Law, (2) Medicine, and (3) Social Work. Finally, the over-all graduate program of the University is under the auspices of the Graduate School, and all Graduate degrees granted by the University are ultimately approved and issued by that authority.

Philosophically speaking, the educational life of the student at Wayne State University is considered to be dichotomous.

For lack of better terminology the first phase of the student's educational life might be termed "academic," the second phase "non-academic." It should be noted that despite such connotation both phases are considered essential and integral parts of the educational program of the University. The so-called "academic" phase of the educational program deals with the student's life in the classroom, while the "non-academic" phase of the program deals with the student's life outside of the classroom.

After carefully considering the contributions made by both of these phases to the education and general development of the student at the University, it was decided that the "non-academic" area was responsible for a very considerable portion of the student's educational development, and thus, in order to insure the most efficient and meaningful operation in this area, a Division of Student Personnel was created. As a result of this action, the opportunity was provided for what Brailey would term a "centralized" student activities program.¹

Throughout the University's history the student activities program has enjoyed the support of students, faculty, and administration, and has been considered, as it still is, an integral part of the total educational offering of the institution. Actually, many thousands of students have attested to the valuable experience and general air of enjoyment of the program which includes a variety

¹Lester G. Brailey, The Effectiveness of Student Personnel Services in Certain Urban Universities (University of Pittsburgh, Doctoral Dissertation, 1952).

of educational and cultural pursuits. The present program is the product of a long period of experiences and efforts of past and present students, faculty members, and administrators. Although the program has been predominantly student-centered, faculty members and counseling personnel, frequently share in co-membership and advisory functions to help facilitate many of the activities offerings.

Many of the activities are closely allied with instructional programs, such as, speech, music, and athletics. One of the basic assumptions in the University student activities program is that effective learning does occur as a result of informal activity in an educational setting. Thus, it is incumbent upon the institution to provide for such informal learning within a defined framework of policies and regulations. These provisions should guarantee opportunities for wholesome activity in a just and orderly atmosphere for all interested individuals.

In essence, much of the activities program is born of and guided by the general educational policy of the University. General educational policy formation is a function of the faculty through a representative University Council. Throughout the University the formulation of operating and administrative policy is a shared responsibility, and although the Council of Deans and the President hold the responsibility for final decisions concerning policies for student activities, recommendations to the President and Council of Deans affecting student activities are transmitted by the Dean of Students from student-faculty advisory

committees, the University Student Council, or any other such agency specifically charged with responsibilities in the student activities area.

As a result of the University Council's adoption in 1954 of a policy statement dealing with student activities, a new accent was placed upon the student activities program.² The adoption of this policy statement made it a matter of record that the University faculty felt that student activities formed a definite and integral part of the educational program of the institution, and further that the student activities program should become student-faculty centered instead of student-centered as it had been in the past. Such a development created the necessity for renewed assessment and evaluation of various parts, phases, and segments of the student activities program.

Following the adoption of this policy by the University Council there was a feeling of need throughout the student activities area for evaluation of certain phases of the existing program. Partly due to the existence of such an atmosphere, but more directly because of criticisms on a national scale, and, in some sections of the nation, rather drastic institutional actions taken concerning the general area of fraternal organizations, the Dean of Students at Wayne State University requested the Counselor of Men's Activities to approach the fraternal organizations on campus with the purpose of developing a self-study and evaluation.

² J. W. Menge and M. Coral and N. Grundstein, "Report of a Three-Year Survey of the Student Activities Program of Wayne University."

This request was made by memorandum.³ As a result of the memorandum, and further discussions between the Dean of Students and the Men's Activities Counselor, it was ultimately decided that the task of fraternal organizations performing a self-evaluation might best be accomplished by applying the methodology described in the preceding chapter of this report.

With the foregoing as background information, the remainder of this chapter describes in a step by step fashion the application of the methodology, a self-study and evaluation of fraternal organizations at Wayne State University. It should be emphatically pointed out that the object of this description is the demonstration of an actual application of the methodology, and is not for the purpose of dealing with the findings resulting from fraternal organization self-evaluation.

The Application

A. Procedures of Organization and Orientation

Step 1--Designations, Definitions, and Appointments.

Complying with the requirements of Step 1 of this phase of the methodology, the Dean of Students, the commissioning agency in this case, appointed the Counselor of Men's Activities as the original investigating agent for the designated project of a self-evaluation study by fraternal organizations.

After discussing the original "designation" of the study area as stated in the initial memorandum, it was decided that a more

³ See Appendix B, p. 249.

specific designation and delimiting definition of the problem area was needed to fulfill the requirements of Step 1 of the methodology. Therefore, the problem area was re-designated and re-defined as follows:

1. The twenty member fraternities of the Interfraternity Council are requested to perform a self-evaluation study and generally assess themselves as a group relative to such questions as: Why do we exist? What have we to offer? What are we doing with our opportunities? and finally, What should we be doing?
2. It is further suggested that information be secured from individual members pertaining generally to such questions as: Why did I join this fraternity? What am I getting out of it? and, What should I expect to get out of it?
3. Finally, and to a lesser degree, the non-fraternity students should be sampled and interrogated along the lines of: Why I am not interested in fraternities? Why, though interested, I did not pledge a fraternity? Finally, What are my attitudes toward fraternities?

With the problem area thus more specifically defined than it was in the original memorandum, it was generally felt that the requirements of Step 1 of the methodology were sufficiently fulfilled to proceed with the next action of the methodology, Step 2. Step 2--Additional Appointments to Investigatory Group.

After considering the commissioning agency's designation and definition of the problem area to be studied, the originally

appointed investigatory personnel, the Counselor of Men's Activities, decided that additional personnel was necessary to carry out the study.

Since the Interfraternity Council was directly involved by dint of the designation and definition of the problem area, and since it is the function of that organization to serve and govern fraternal organizations on campus, the President and the Vice-President of the Interfraternity Council were requested to serve as members representing the constituency of the problem area composed of fraternity members and pledges. In order that the non-fraternity point of view be heard, a second-semester sophomore student, who had compiled an excellent activities record, but who had never pledged a fraternity, was also requested to serve on the study team. Upon his acceptance, the number of investigatory personnel conducting the study totaled four persons. The constituencies represented were the fraternities' memberships, through the Interfraternity Council representatives; the non-fraternity students, through the "independent" representative; and finally, the fraternity faculty advisers, through the Counselor of Men's Activities.

With the study committee membership so constituted, it was generally agreed that all of the constituencies most immediately concerned with the defined problem area were adequately represented. It was further agreed that four persons were a sufficient number of conduct a study of the size and scope designated by the commissioning agency. Thus, with the problem of the composition of the membership of the study committee resolved, the require-

ments of Step 2 were fulfilled and the investigatory personnel moved to Step 3 of the methodology.

Step 3--Orienting Investigatory Personnel.

At the first meeting of the group, the Counselor of Men's Activities served as chairman. His first act was to acquaint the members with the general situation, and with the decision by the commissioning agency to use the proposed methodology in the evaluation study.

Although many more items of business were on the agenda for the first meeting, it must be confessed that interest in the methodology was so high that the entire period was spent in discussing it. As a result, there was little to note about the first meeting except that the investigatory personnel became better acquainted with the proposed methodology. Since the first meeting took place prior to registration for the Fall Semester, nothing could be resolved in the way of scheduling time for study committee meetings during the approaching semester. It was generally agreed, however, that the membership would be able to attend a meeting at the same time one week hence. With this much accomplished the first meeting of the investigatory personnel adjourned.

The second meeting took place as planned, and once again the Counselor acted as chairman. With the curiosity about the methodology greatly abated, it was possible to discuss thoroughly the scope and definition of the problem area, and generally agree that no additional personnel were necessary to conduct the study.

Side issues that emerged from this meeting were: (1) the meetings should be conducted on an informal basis; (2) since the group was small each member was responsible for his own "note-taking," and only when the group undertook the Condition, Causal, Action, and Implementation Analysis, plus the task of composing the questionnaire in Steps 1 and 2 of phase B, respectively, would there be a recording secretary designated.

Since the Dean had not set a specified deadline for the completion of the study there was no great need for a time schedule. However, it was generally felt that the study should be completed as soon as possible, and in any event no later than the Christmas holiday recess. Once again no decision could be made relative to a regular meeting time, but all personnel were to make an extra effort to "block out" certain possibilities in their respective schedules so that this matter could be resolved at the next meeting.

The problem of whether to apply a trend analysis to certain types of enumerative data, such as, the number of philanthropic ventures undertaken by fraternities per year, for the period of September 1951 through September 1956, was discussed at length. Ultimately it was decided that since the designation of the "self-evaluation" seemed to be directed more toward the value judgments of the respondents than toward the enumerative data concerning the area, the trend analysis phase of the methodology, Step 4 of phase C, would be eliminated. However, if at some time during the future a presently unforeseen exigency arose which demanded

the utilization of such procedures, they would be employed.

At the third meeting of the investigatory personnel it was decided that since only four persons were involved in carrying out the study, it would not be necessary to provide for a formal sub-committee structure, but rather to undertake the various tasks of evaluation as a total group. On the other hand, this was not an inflexible decision. In fact, if at any time during the study it would appear to be more expedient to use sub-committees, action to establish such groupings would be taken.

After agreeing to meet twice a week until the study was completed, the matter of a "starting point" of the investigation was discussed. As a result of this discussion the committee unanimously agreed that the Decalog of Fraternity Policy, adopted by the National Interfraternity Council at the November, 1945 conference, would not only fulfill the requirements of a "starting point" in every detail, but would provide an excellent outline and guide for the study of the problem area.³

The Decalog is composed of the following ten items, and examination of them readily reveals the possibilities of the document as a basic guide for lending good direction to a fraternity self-evaluation study. The ten items are:

1.

The goal of the college fraternity, in harmony with the goal of the college, is to provide training and discipline of the individual who, in seeking an education, desires

³The creed of a good college fraternity. A policy composed of ten items prepared by the National Interfraternity Council for the purpose of establishing written aims and objectives of good fraternalism.

to make himself a useful member of society, possessing knowledge, trained skill, and capacity for accomplishment. the college fraternity, as a group organization, seeks to teach men how to live and work together, striving by precept and example for the personal development of the individual in the training of mind and body. It carries forward the fundamental purposes of education, adding a fraternal influence for correct living and individual development.

2.

The college fraternity must regard itself as an integral part of the institution in which it is located. It not only must be amenable to the rules and regulations of the college institution, but must share in all the college responsibilities of the undergraduate. The college fraternity must match the discipline of the college administration, and must accept the added responsibility incident to the supervision of group life in the chapter house. Furthermore, the college fraternity, with complete loyalty and allegiance to the college which nurtures it, has the duty of supporting in every possible way the institution of which it is a part.

3.

The college fraternity is also a business organization. Successful management requires sound financial practices and good housekeeping methods. There is the dual obligation of prompt collection of monies owed and prompt payment of accounts due. The fraternity man and the chapter group acquire strength and stature as they develop business experience and a true perception of correct business methods. Financial strength and integrity in the fraternity enables it to accomplish its other aims.

4.

The college fraternity stands for excellence in scholarship. It seeks, as a part of its college, to promote diligent application to study by the fraternity member, in order that not only the requirements of the college be met, but that achievement above the average level be attained. The college fraternity adds its rewards for intellectual attainment to those given by the college.

5.

The college fraternity accepts its role in the moral and spiritual development of the individual. It not only accepts the standards of the college, but, in addition,

endeavors to develop those finer qualities of ethical conduct which add to the inner growth of man.

6.

The college fraternity recognizes that culture goes hand in hand with education and, therefore, seeks to broaden the growth of the fraternity member by encouraging the acquisition of knowledge and training in cultural subjects. It is in this field that the college fraternity augments the formal instruction of the institution in encouraging an appreciation of art, of music, of literature, of dramatics, of debate, of sports and games, of speaking and writing, and of national affairs.

7.

The college fraternity is the center of much of the social life of the fraternity member. As such it seeks to develop the social graces, the art of good living, the development of courtesy and kindness. Good manners, good taste and good companionship are a part of the training of every fraternity member.

8.

The college fraternity recognizes the importance of the physical well-being of its members. It seeks to provide healthful and sanitary housing. It encourages healthful practices by its members, discourages physical excesses and promotes athletic competitions in both fraternity and college life, so that mens sana in corpore sano shall be the aim of every fraternity member.

9.

The college fraternity assumes civic responsibilities. The chapter house is another training ground for good citizenship. Fraternity members are taught first their civic responsibilities as members of the college community, and are prepared in later life to assume their responsibilities to their communities and to the nation.

10.

The college fraternity seeks to develop those qualities of human understanding, of companionship, of kindness, with a knowledge and training in appraising the basic values of life, which will lead towards a better civilization, with peace and understanding among all peoples.

Thus, with the determination of the "starting point" of the study, and a basic outline to guide the committee generally toward the resolvment of the "self-evaluation" of fraternal organizations in the Interfraternity Council, Step 3 was concluded.

Step 4--Individual Investigations.

Although Step 4 is based upon personal investigation of all aspects of the area under study by members of the investigatory committee after the general orientation and designation of a "starting point" of the study under Step 3, such was not the case in this instance. Actually, after the first committee meeting, during which only the proposed methodology was discussed and a somewhat cursory description of the area for study was rendered by the Men's Activities Counselor, the three student members began their personal investigations. They continued these investigations throughout the interim of time that was necessary for the committee to complete the requirements of the first three steps of the proposed methodology. Thus upon entering Step 4 it was found that much of the work that was intended to be done after the completion of Step 3 by the committee had already been accomplished through the earlier effort previously described. A great deal of time was saved at this point. After gathering additional information throughout the associated constituencies relative to part 1 of the Decalog, designated as the "starting point" of the study, the committee convened for the purpose of carrying out the procedures associated with the type of analysis described under Step 5 of the methodology.

B. Problem Area Analysis and Gathering of Data

Step 1--Analyzing the Problem Area.

Step 1 of this phase deals with the analysis of the total problem area. The procedures associated with Condition, Causal, Action, and Implementation analysis are rather detailed and involved, and thus presentation of the total analysis at this point might tend to confuse more than clarify. For this reason, only one of the actual "analyses" will be presented. The "analysis" chosen for this purpose is one of the more difficult ones occurring in the area. It exemplifies many of the ramifications that must be considered by the analytical procedures. The particular "analysis" selected for the illustration is associated with Item 1 of the Decalog of Fraternity Policy stated on page 146 which deals with the "goal" of the college fraternity.

After rather extensive discussion of whether the member fraternities of the Interfraternity Council were fulfilling their obligations toward the "goal" of a good fraternity, the study committee decided that the following statement would most aptly describe the presently existing "general condition" on campus:

"Although all member fraternities of the Interfraternity Council are to some degree fulfilling the goal of striving by precept and example for the personal development of the individual in the training of mind and body, some organizations are not satisfactorily fulfilling this objective, and in general, the endeavor toward this goal may be further improved by all of the groups."

With this statement of the "general condition" approved by all committee members, a number of sheets of paper were prepared in a rough columnar form as shown in Figure 4, where "Blocking Condition" describes a situation which contributes to the existence of the "general condition;" "Cause" signifies the cause or causes of the "Blocking Condition;" "Action" designates the necessary actions to be taken to correct the causal factors of the blocking condition, and "Implementation" denotes how the "Actions" might be accomplished.

FIGURE 4

ILLUSTRATION OF GENERAL FORM OF
CONDITION, CAUSAL, ACTION, IMPLEMENTATION
WORK SHEET

1. General Condition: Although all member fraternities of the Interfraternity Council are to some degree fulfilling the goal of striving by precept and example for the personal development of the individual in the training of mind and body, some organizations are not satisfactorily fulfilling this objective, and in general, the endeavor toward this goal may be further improved by all of the groups.

Blocking Condition	Cause	Action	Implementation
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Since these sheets were used solely as "work sheets" they were drawn and filled out in pencil by a recording secretary, in this case the Men's Activities Counselor, thus allowing for the many erasures and corrections that are necessary to gain proper wording and meaning of the various aspects of the problem being analyzed. In an effort to show how the analysis was carried out by the committee, the columnar entries will be shown and discussed

in separate parts, and ultimately placed in combination as they finally appeared.

After considering the statement of the "general condition" committee members decided they would attempt to list all of the "blocking conditions" that they felt were associated with the "general condition" before proceeding with the causal, action, and implementation analyses. As a result of this decision, and after much debate and thorough discussion, and with the provision for adding other "conditions" as they might occur during further analysis, the following items were listed in the "Blocking Condition" column:

Blocking Conditions

- A. The individuals composing the membership of a fraternity are not able to associate as a total group very frequently throughout the school year.
- B. There is a lack of pride relative to being a member of some of the fraternities in the Interfraternity Council.
- C. Some of the member fraternities have untrained and uninformed leadership.
- D. There is a lack of continuity in the administrative area of some member fraternities.
- E. The University does not delegate authority to individual fraternities to undertake projects involving a great deal of responsibility and accountability whereby the fraternity could exemplify by precept and example the training of the individual member.
- F. Some fraternity advisers are not sufficiently interested nor involved in the operations and functions of the groups which they advise.

Upon completing its consideration and listing of the "blocking conditions," the committee next undertook the task of finding the "causes" of the "blocking conditions." This phase of the

analytical procedure is known as the "causal analysis," and accounts for the entries found in the "cause" column of the analysis sheet. The notation employed, such as, A_i , B_i , C_i , D_i , E_i , and F_i ; where the sub-script "i" takes on integral values from "1" to as high as necessary, denotes those "causes" that underly the "condition" signified by the capital letter designation. For example, the several causes of Blocking Condition A are designated as A_1 , A_2 , A_3 , et cetera; the causes of Blocking Condition B are identified by B_1 , B_2 , B_3 , et cetera.

In order to demonstrate this portion of the analytical procedure, a discussion of the "A" entries in the "blocking condition" and "cause" columns is presented. This part of the analysis sheet would appear as follows:

Blocking Condition	Cause
A. The individuals composing the membership of a fraternity are not able to associate as a total group very frequently throughout the school year.	A_1 Work schedules of members.
	A_2 Lack of permanent housing and meeting facilities on or near the campus.
	A_3 The individual fraternity member is still deeply involved in his family's and neighborhood associates' social life.
	A_4 Lack of sufficient <u>campus</u> athletic and recreation facilities, plus the availability of the same through the metropolitan authority throughout the city, leads to small group formation and participation within the total group.

Blocking Condition	Cause
A ₅	Lack of a central issue, event, or agency associated with the University to serve as a common interest object which would serve as a cohesive force for fraternity groups.

Thus, it is seen that A₁ (Work schedule of members) is one of the "causes" of the "blocking condition" dealing with the "lack of association of fraternity members," which in turn contributes to the laxity of the group to "strive by precept and example for the personal development of the individual member." Another "cause" is A₂ (Lack of permanent facilities for the housing and meetings of the group). Still another "cause" contributing to the "blocking condition" is the lack of campus athletic and recreational facilities, plus their availability in widely scattered areas by a metropolitan authority. Finally, the lack of a general common binding interest associated with the University also contributes to the lack of association of some fraternity memberships, which in turn defeats the "goal" objective defined under the "general condition."

Following the same procedures, as were employed in the analysis of condition "A", the causal analysis for "blocking" conditions B, C, D, E, and F were carried out. At the conclusion of this analytical procedure, the first two columns of the "analysis work sheets" appeared as follows:

Blocking Conditions	Causes
A. The individuals composing the membership of a fraternity are not able to associate as a total group very frequently throughout the school year.	A ₁ Work schedules of members.
	A ₂ Lack of permanent housing and meeting facilities on or near the campus.
B. There is a lack of pride relative to being a member of some of the fraternities of the Interfraternity Council.	A ₃ The individual fraternity member is still deeply involved in his family's and neighborhood associates' social life.
C. Some of the member fraternities have untrained and uninformed leadership.	A ₄ Lack of adequate campus athletic and recreational facilities, plus availability of such facilities through a metropolitan authority in widely distributed areas, leads to small "neighborhood" group formation within the total group.
D. There is a lack of continuity in the administrative area of some member fraternities.	A ₅ Lack of a central interest in some phase of the University educational program.
E. The University does not delegate authority to individual fraternities to undertake projects involving a great deal of responsibility and accountability whereby the fraternity could exemplify by <u>precept</u> and <u>example</u> the training of the individual member.	B ₁ The small size of some groups, and a general difference of opinion within them, plus the feeling of a lack of fraternal accomplishment.
F. Some fraternity advisers are not sufficiently interested nor involved in the operations and functions of the groups which they advise.	B ₂ In some cases there is a lack of fraternity tradition.
	B ₃ Some fraternities employ poor procedures of, and criteria for, membership selection.

Blocking Conditions

Causes

- C₁ and D₁ Some fraternities do not recognize the need for developing leadership qualities in their members.
- C₂ and D₂ Lack of delegation of responsibility, authority, and accountability to fraternity members by the leadership of the group.
- C₃ and D₃ No organized leadership training program provided for, or available to, fraternities through the I.F.C. or Student Activities Program of the University.
- C₄ and D₄ Lack of active participation in fraternity, or student activities program, by the leadership element, prior to its appointment to leadership positions in the fraternity.
- E₁ University administration has little faith in the capability of individual fraternity leadership.
- E₂ The organization of a large "centralized" university activities program is such that an individual fraternity is rarely called upon to undertake ventures of great responsibility, accountability, and authority.
- F₁ Some fraternities do not maintain sufficient contact with their respective advisers.
- F₂ Some advisers make little effort to maintain their interests in the groups they are advising, and thus lose meaningful contact with the organization.
- F₃ In those fraternities where there is little contact between the group and the adviser, the national

turnover and change of the membership usually contributes to further disinterest between the group and its adviser.

F₄ In some cases the adviser gets new interests that take much of his time, and causes him to further neglect the fraternity.

F₅ Sometimes difficulty can be directly traced to the fact that initial selection of the adviser was not wisely thought out and executed by the fraternity.

Upon completing the "causal analysis" phase of the total procedure, the committee undertook the "action" and "implementation" processes of the total analysis. Again, in order to demonstrate this phase of the procedure, only the conditions, causes, actions and implementations associated under the designation of the letter "A" will be discussed.

Since the items entered in the "action" column are merely the general courses of actions to be pursued in counteracting the "causes" of the "blocking conditions," this column might appear to be non-essential. However, "action" columnar entries prove to be highly contributory to the analysts in the matter of discovering possible ways and methods of "implementing" the recommended actions, which in turn is the end process (implementation) of the total analytical effort.

Considering the four columnar entries under the "A" designation only, as shown in Figure 5, it is possible to explain the manner in which the total analysis was accomplished by the study committee:

FIGURE 5

ILLUSTRATION OF TOTAL ANALYSIS
OF BLOCKING CONDITION A

Blocking Conditions	Cause	Action	Implementation
A. The individuals composing the membership of a fraternity are not able to associate as a total group very frequently throughout the school year.	A ₁ Work schedules of members.	A ₁₁ Coordination of fraternity calendar and program with the memberships' work schedules, by the fraternity leadership to effect maximum	A ₁₁₁ Fraternity leadership should plan the fraternity calendar as far in advance as possible, so that members may attempt to adjust work schedules accordingly.
	A ₂ Lack of permanent housing and meeting facilities on or near the campus.		
	A ₃ The individual fraternity member is still deeply involved in his family's and neighborhood associates' social life.	A ₂₁ The fraternity should try to provide permanent facilities for meetings and fraternal get-togethers.	A ₁₁₂ Fraternity leadership should attempt to seek out campus part-time jobs for those members who find it necessary to work, thus enabling group members to maintain closer association, and creating a greater possibility for attending campus fraternity operations, meetings, and events.
	A ₄ Lack of adequate campus athletic and recreational facilities through a metropolitan authority in widely distributed areas leads to small "neighborhood" group formation within the total group.	A ₃₁ Fraternity should make an excessive effort to get its membership more interested in University and fraternity community life.	A ₁₁₃ Upon being informed of the necessary work schedules of the membership,

Blocking Conditions	Cause	Action	Implementation
A ₅	Lack of a central interest in some phase of the University Educational program.	A ₄₁ More attractive and better campus athletic and recreation facilities than those provided to certain local areas by the metropolitan authority should be constructed.	fraternity leadership readjusts the calendar so that conflicts are reduced to a minimum.
		A ₂₁₁ A central interest in some of the University educational programs should be provided.	The I.F.C. makes available financial plans that are being successfully operated by other member fraternities, to those fraternities that are interested in leasing, or purchasing, and operating houses on campus.
		A ₂₁₂ A central interest in some of the University educational programs should be provided.	The I.F.C. Housing Commission makes available to interested fraternities information, regarding rentals, purchases, and general conditions of housing facilities in the area, by continuously maintaining contact with the situation through personal investigation, real estate agents and other possible sources of information.
		A ₃₁₁ A central interest in some of the University educational programs should be provided.	The I.F.C. should sponsor more competitive events, such as: essay contest, song writing contests, and any other such intellectual cultural pursuit contests for the member fraternities.
		A ₄₁₁ A central interest in some of the University educational programs should be provided.	The I.F.C. should petition the proper authority for making available the athletic and recreational facilities for leisure time use by fraternity members.

Blocking Conditions	Cause	Action	Implementation
			A ₄₁₂ The I.F.C. should request the proper authorities of the administration to increase and expand the athletic and recreational facilities on campus as soon as possible.
			A ₄₁₃ The I.F.C. through a "Sports Council" working with the University Intramural Director should attempt to improve the present I.F.C. sports program, in the areas of coordination, dissemination of information, encouraging further and more diverse participation, and general administration.
			A ₅₁₁ See A ₁₁₁ through A ₄₁₃ .

The "action" and "implementation" analyses, in the context of the total over-all analytical procedures, shows that the "blocking condition" of "lack of association between fraternity members" according to available information is basically "caused" by: work schedules problems, lack of permanent housing, the members' involvement with his family and neighborhood associates, lack of adequate campus recreation facilities, and the lack of a central interest in some phase of the University educational program. The necessary "action" for correcting the "causes" of this "condition" are found under the corresponding sub-script designations in their respective columns. For example, A₁₁ in the "action" column corrects "cause" A₁. It should be observed at this point that had there been other "actions" which also could

have been taken to overcome "cause" A_1 , and so on, until all possible "actions" relative to the particular "cause" had been exhausted. Thus, it may be seen that "actions" dealing with leadership coordination of work schedules and the fraternity calendar of events, the fraternity effort to provide permanent housing, the fraternity effort to interest its membership more fully in the University and fraternity community, the provision of more and better campus recreational facilities, and the provision of a central interest in the University educational program, are suggested as corrections of the "causes" underlying the "blocking condition" of "lack of membership association."

The items of corresponding sub-script designation in the "implementation" column suggest "how" the "actions" may be effected to correct the "causes" of the "blocking condition." Hence, items A_{111} , A_{112} , and A_{113} are methods suggested for implementing "action" A_{11} , which will correct one of the "causes," A_1 , of the "blocking condition" A.

In the interest of the practical limitations of time and space, may it suffice to state in a similar fashion, analyses of blocking conditions, causes, actions, and implementations were carried out for B, C, D, E, and F. For those readers who are interested, the complete analysis sheet for the "general condition" of "fraternity goal" is included as Form C, Appendix B.

"General conditions" relative to the ten concepts of the National Interfraternity Council Decalog, and those dealing with the specific questions set forth in the designation and definition

of the problem area by the commissioning agency, composed the total analytical effort of the study committee relative to the self-evaluation study. The total analysis was a long and exhaustive one, and with its termination came the end of Step 1 of this phase of the methodology. Finally, the committee's re-examination of the suggested "implementations" located those items upon which there was relatively little agreement, and provided the information for "choices" of "items" to be included in the forced-choice rank-ordering questionnaire to be constructed under Step 2 of this phase.

Step 2--Developing Methods of Collecting Attitudinal Data.

Following the recommendation made under this "Step" in Chapter III, page 64, the committee discarded the other possible data-gathering instruments in favor of the forced-choice rank-ordering type of questionnaire. It should be recalled from the discussion in Chapter III of Step 1, phase B (Analyzing the Problem Area), that the content of the attitudinal data-gathering instrument was to be taken from the "actions" and "implementations" which were to any degree doubtful concerning committee acceptance. It should further be recalled (page 69) that the extent of disagreement necessary to qualify materials for inclusion in the questionnaire was left to the discretion of the members of the study committee. Thus, if the committee felt that more opinions were necessary to resolve the problem under consideration, the subject matter was to be included as an "item" on the questionnaire, which in turn would be submitted to the

constituencies associated with the problem area. In other words, the function of the data-gathering instrument would be to poll the constituencies only on those items or issues on which there is disagreement among the informed personnel responsible for the investigation of the problem area.

When the study committee members examined the "action" and "implementation" columns of the "general condition" analysis sheets, they discovered that there were only five areas where there seemed to be sufficient disagreement to warrant the formation of questionnaire items concerning them. The general areas were:

1. The basic reasons for individuals joining a fraternity.
2. The benefits commonly sought by individuals from their fraternity membership.
3. The patterns of behavior of fraternity men that might discourage others from becoming members.
4. The personal problems that might prevent people from becoming fraternity members.
5. The publicity techniques that are most effective in the procurement of pledges.

A general procedure was followed by the committee in the matter of composing the "choices" to be associated with each of the five respective questionnaire "items." First, all of the possible "choices" for a particular "item" were examined for common elements. Second, the terminology and phrasing of the "general statement" and "choices" of the proposed "items" were thoroughly discussed, delimited, and finally expressed in such a manner so

that one "choice" would not enjoy an advantage over another because of its wording. Finally, the order of presentation of the "items" and their respective "choices" was discussed and examined by the committee. Upon the completion of this procedure the main body of the questionnaire was completed, and the matter of an "instructions sheet" was discussed. Finally, the questionnaire was completed to the satisfaction of the committee members, and preparations were made to undertake the next step of the proposed methodology. A copy of the Interfraternity Council Fraternities Self-Evaluation Questionnaire has been placed in Appendix B, page, 249.

Step 3--Running the Pilot Study.

The first action taken by the study committee under Step 3 was that of specifically defining the population associated with the study. There was no question about the fact that one part of the population would be that of the 20 faculty members serving as advisers to the fraternities of the Interfraternity Council, and that another part would be that of 611 active fraternity members and pledges of the Interfraternity Council. However, the third and final part of the population which, according to the definition of the problem area by the Dean of Students, was to be composed of "a limited sample of independent students," presented a definite problem to the committee. After a rather lengthy discussion it was arbitrarily agreed that a sample of approximately 200 "independent" students, selected at random from the first semester freshman, second semester freshman, and first semester

sophomore orientation class rosters⁵ would represent the non-fraternity constituency of the problem area population. Upon completing the random selection of the "independent" student names from the designated class rosters, the population associated with the problem area was defined as 20 advisers, 611 active fraternity members and pledges, and 201 non-fraternity students, thus rendering a total of 832 individuals.

The selection of the pilot study sample was accomplished by the method described in Chapter III (page 85). Thus, following the procedures of this method, the first action taken by the committee was that of assigning numbers to the individuals composing the population. The advisers were assigned numbers from 1 - 20 inclusive, the active fraternity members and pledges, 21 - 631, and the "independents," 632 - 832 inclusive. Then, utilizing Table 7 of Rosander,⁶ a random sample composed of 8 "independents," 5 advisers, and 20 fraternity men was selected for the pilot study.

Before proceeding further with the description of study committee action in running the pilot study, it might be wise to remind the reader of the purposes served by this "Step" in the proposed methodology. The pilot study serves two specific purposes: first, to identify poor questionnaire items which in turn affect the validity and reliability of the final form of the questionnaire; and second, to establish criteria by which an adequately-

⁵ Located in the Office of the Director of Student Activities.

⁶ A. C. Rosander, Elementary Principles of Statistics (New York: D. Van Nostrand Co., Inc., 1951), Chapter I.

sized sample for the main study may be determined. Although this reminder might seem to be superfluous, it was felt that its inclusion at this point might help clarify ensuing actions taken by the study committee in the process of running the pilot study. Returning now to the application of this "Step" to the fraternity self-study, the next action taken by the study committee was that of requesting the staff of the Men's Activities Office to distribute the forced-choice rank-ordering questionnaire to the 33 persons composing the pilot study sample. This action was effected, and a 100% response was realized. After receiving the returned questionnaires the study committee proceeded to carefully examine and analyze the "other comments" sections of the "items" to detect inadequate or poor "items" and "choices." Since only five of the respondents made comments, and these were of a very limited nature, the committee decided that the original "items" of the questionnaire would be satisfactory for the main study. Thus, with the completion of this action the first purpose of the pilot study was fulfilled.

In order to establish criteria by which an adequately-sized sample for the main study could be determined, "scores" resulting from the respondents' ranking of the "choices" of each "item" were recorded on Form I and Form II Pilot Study Work Sheets (sample copies of these forms may be found in Appendix B, page 235). As may be recalled from the discussion in Chapter III, Pilot Study Form I was used in connection with the pilot study total sample "scores" of the "choices" associated with each "item" in

the questionnaire. Thus, in this case, there were five Form I work sheets with 33 entries for each of the four "choices" of a questionnaire "item." The so-called "criteria" to be yielded by this sheet were the standard deviations and means of the "choices" associated with each questionnaire item. The means and standard deviations yielded by the data of the five Form I Pilot Study Work Sheets are shown in Table VIII.

TABLE VIII
PILOT STUDY TOTAL SAMPLE MEANS AND STANDARD DEVIATIONS

Items	Choices							
	A		B		C		D	
	M	s	M	s	M	s	M	s
1	2.15	.83	3.33	.65	2.79	.89	1.73	1.13
2	2.73	1.10	2.21	1.17	2.76	1.08	2.30	1.10
3	2.30	1.13	3.67	.82	1.76	.90	2.58	1.03
4	3.45	.75	2.85	.94	1.73	.91	1.99	.73
5	2.58	1.25	1.99	1.01	2.70	.92	2.79	1.17

Where Form I was used in computing "criteria" from the total sample of the pilot study, Form II was used to compute standard deviations of individual constituency item choices. Thus, in this case, since there were three constituencies and five items, $3 \times 5 = 15$ Form II Pilot Study Work Sheets were effected. Table IX shows the various individual constituency item choices standard deviations that were computed by the committee.

TABLE IX

PILOT STUDY INDIVIDUAL CONSTITUENCY
STANDARD DEVIATIONS

Item	Choice	Standard Deviations of Ranks Assigned to Each Choice		
		Fraternity Men	Advisers	Independents
1	A	.91	.55	.52
	B	.55	1.00	.46
	C	.59	.89	.83
	D	.99	1.30	0.00
2	A	1.12	1.30	1.13
	B	1.08	1.34	1.30
	C	1.14	.84	1.07
	D	1.17	.84	1.07
3	A	1.10	1.64	.93
	B	.60	.71	.46
	C	.86	1.14	.52
	D	1.03	.84	.83
4	A	.68	.55	.99
	B	.88	.84	1.13
	C	.21	0.00	.82
	D	.54	.89	.99
5	A	1.15	1.64	1.13
	B	.96	1.23	1.13
	C	1.04	.55	.89
	D	1.12	.84	1.19

Under Step 4 of this phase of the methodology the data of Table IX was used to compute the coefficients of variation associated with each questionnaire item and constituency, or $5 \times 3 = 15$ of them. One of these "coefficients," in turn, helped to determine the main study minimum-size sample. After the size of the main study sample had been determined, certain standard deviations in Table IX helped to allocate it to the three constituencies associated with the problem area. Thus, with the computation of the data in

Tables VIII and IX, the study committee had completed the requirements of Step 3 of this phase and were prepared to undertake the procedures of Step 4.

Step 4--Determining Size of Sample Needed.

Recalling that the first procedure prescribed under Step 4 was that of computing the coefficients of variation by dividing the pilot study total sample standard deviations by their respective means (see Table VIII), the study committee computed the 15 "coefficients" shown in Table X.

TABLE X
PILOT STUDY TOTAL SAMPLE COEFFICIENTS OF VARIATION

Items	A	B	C	D
1	.39	.19	.32	.65
2	.40	.52	.38	.47
3	.48	.23	.51	.39
4	.22	.32	.52	.36
5	.48	.50	.33	.40

Following the next procedures prescribed by Step 4, the committee selected the highest-valued coefficient of variation from Table X. It was noted that $C_{1D} = .65$ met that requirement. With this value established, the next problem was that of determining an acceptable relative sampling error. It might be recalled at this time that the relative sampling error (p_s) is found by dividing the "standard error of the mean" ($s_{\bar{x}}$) by the population

value of the mean (\bar{x}). In the realm of theory, the values $s_{1D} = 1.13$, and $M_{1D} = 1.73$, of the total pilot study sample are unbiased estimates of the population parameters (mean and standard error of the mean) for the particular "choice" and "item" under consideration. Under these conditions the relative sampling error would be equal to the quotient of 1.13 divided by 1.73, or .65, which in turn is equivalent to 65%. If a value of 65% were an acceptable relative sampling error, it would only be necessary in the main study to sample 4 persons under the conditions of a 5% level of confidence, and 7 persons if the 1% level were assumed. Obviously a more accurate representation of public opinion was desired by the study committee. In order to fulfill the requirement of greater accuracy, the mean ($M_{1D} = 1.73$) from the total pilot study sample was selected as a starting point in determining the number of cases needed so that a relative sampling error of 15% could be achieved. By choosing values of the mean and relative sampling error, the permissible value of the "standard error" was determined as .26. Thus, the relative sampling error, in formula form, appeared as follows:

$$p_s = \frac{.26}{1.73} = .15 \text{ or } 15\%$$

This value is much more restrictive than the previous value of .65 or 65%, and consequently would demand a greater number of respondents in the main study sample.

Thus with the determination of the relative sampling error as 15%, and the coefficient of variation as $C = .65$, it was

possible to enter Table XIV of Appendix A and determine the required minimum sample size for such conditions at a given level of confidence. It was generally felt by the committee that the 5% level of confidence was sufficient for the purpose of their study, and since it would be necessary to interpolate the true value of "n," the required sample size, the table was entered in the 15% relative sampling error column, and opposite the coefficient values of .6 and .7 the following values were read, and the interpolation was carried out as indicated below: (Since the actual value of "C" was equal to .652 it was rounded to .66 for the purpose of insuring adequacy of the minimum number to be calculated.)

$$n = 84 = .7 = C \quad (1)$$

$$n = 62 + x = .66 = C \quad (2)$$

$$-n = 62 = -.6 = C \quad (3)$$

Then, subtracting (3)
from (2):

$$x = .06 \quad (4)$$

and (3) from (1):

$$22 = .1 \quad (5)$$

Then dividing (4) by (5)

$$\frac{x}{22} = \frac{.06}{.1}$$

Solving for X

$$x = (22) (.6) = 13.2$$

Therefore: $62 + x = 62 + 13.2 = 75.2$ or, rounding to the next highest number as was recommended in the case of minimum-size sample determination, it was discovered that $n = 76$ was the minimum-size sample necessary at the 5 per cent level of confidence for the main study.

Upon determining the value $n = 76$, for the size of the main study sample the next requirement of Step 4 was that of allocating the sample to the three constituencies. Following the prescribed procedures, the highest-valued individual constituency standard deviations were sought from the values found in Table IX. Thus, the highest-valued s_j for the fraternity men was found to be 1.17; for the advisers 1.64; and for the independents 1.30. The tabular presentation below shows how the sample was allocated.

TABLE XI
ALLOCATION OF THE SAMPLE $n = 76$
TO THREE CONSTITUENCIES

Constitu- ency	Constitu- ency Size, N_j	Highest-valued Standard Devi- ation of the Constituency, s_j	$N_j s_j$	$\frac{N_j s_j}{\sum N_j s_j}$	Allocation of $n = 76$ $n \left[\frac{N_j s_j}{\sum N_j s_j} \right]$
Fraternity Men	611	1.17	717.31	.71	54
Advisers	20	1.64	32.86	.03	3
Independents	201	1.30	261.70	.26	19
Total	832		1011.87	1.00	76

Since the population had been assigned numbers under Step 3 of this phase, the next action undertaken by the committee was that of selecting the random sample according to the procedure described in Chapter III, page 85. With the completion of this task, Step 4 was terminated and the study committee was ready to undertake the requirements of Step 5 of this phase.

Step 5--Administering Instruments for Gathering Data.

Since the constituencies associated with the problem area were those of fraternity men, fraternity advisers, and a limited number of "independents," it was felt by the study committee that the office best equipped to distribute and collect the questionnaires of the 76 individuals composing the main study sample was that of the Counselor of Men's Activities.

The secretarial staff of the Men's Activities Office was instructed to give the questionnaire to each of the individuals composing the sample, with the simple request that it be filled out immediately in an adjacent room set aside for that purpose. Since the instruction sheet accompanying the questionnaire was most explicit in its directions concerning what was expected of the respondent, there was relatively little need for further discussion between the staff and the respondent.

Acting upon the directions of the study committee, the Counselor of Men's Activities drafted a short note to the fraternity presidents which stated in effect that the men listed therein were requested to appear at the Men's Activities Office as soon as possible. Thus, the 54 individuals composing this part of the total sample were contacted most effectively, and appeared as requested.

In the matter of contacting the three advisers composing that part of the total sample, the Counselor of Men's Activities reached each of the individuals by telephone at their respective offices, and all of them filled out questionnaires as requested.

Reaching the "independent" sample was by far the most difficult task to effect. This matter was accomplished through telephone calls to the homes of the individuals, contact through classroom instructors, and in a few cases, personal contact by the study committee members acting for the Men's Activities Office.

Although the total effort took four days to effect, a one hundred per cent return was realized from the sample of 76 individuals, and of this number, only two persons were unable to fill out the questionnaire immediately, and were permitted to take it with them. Both of the respondents were asked to make certain that they did not discuss the questionnaire content with any of their associates, and further that they express only their own opinions in responding. Thus, 74 of the total 76 respondents filled out questionnaires in the facility provided for such activity, and in all, the results of this operation were highly satisfactory.

When a questionnaire was returned, the attached number was removed, the questionnaire was rapidly scanned to determine if all of the "choices" composing the "items" had been "ranked," a line was drawn through the name and number of the individual on the master list of persons composing the sample, and the questionnaire was placed in the proper one of three folders designated "Advisers," "Independents," and "Fraternity Men."

It will undoubtedly be recalled that in the discussion of this phase of the methodology in Chapter III a card file system was recommended as the most efficient method of handling this operation.

In the usual situation this recommendation would lead to the best method of carrying out the task. However, in this case, where organizational and class rosters were already available in the files of the offices of the Director of Student Activities and the Counselor of Men's Activities, the committee felt that time could be saved by the use of a master list compiled from the aforementioned forms.

When the last questionnaire was returned, the three designated folders were given to the study committee by the Men's Activities Office secretarial staff. Thus with the returned questionnaires the study committee prepared to launch the third phase of the methodology--the treatment of the data.

C. Treatment of the Data

Step 1--Scoring the Data-Gathering Instruments and Preparing Data for Analysis of Variance.

Upon receiving the completed questionnaires from the Counselor of Men's Activities Office, the study committee first assigned weights to the rank choice responses for each item. The "weights" were as follows: 4 points for a ranking of 1; 3 points for a ranking of 2; 2 points for rank 3; and 1 point for rank 4. After all of the questionnaires had been so "scored," they were recorded and summarized on a Form A sheet, a completed sample copy of which may be found in Appendix B, page 237 . Since there were five "items" composing the questionnaire, and there were three constituencies involved, it was necessary that $5 \times 3 = 15$ Form A sheets be compiled. (See Chapter III, pages 91 and 92.)

Table XII shows the values rendered by the Form A sheets,

necessary for conducting the analysis of variance under Step 2 of this phase of the methodology.

TABLE XII

VALUES NECESSARY FOR ANALYSIS OF VARIANCE, FORM A SHEETS

Group	No. Ind. in Sample	I t Sta- e tis- m tic	Value of Indicated Statistic				
			Response				Total
			A	B	C	D	
(N = 12)	1	ΣX	5	11	6	8	30
		ΣX^2	9	41	14	26	90
		$(\Sigma X)^2$	25	121	36	64	900
	2	ΣX	9	3	7	11	30
		ΣX^2	29	3	17	41	90
		$(\Sigma X)^2$	81	9	49	121	900
Advisers	3	ΣX	9	5	9	7	30
		ΣX^2	33	9	27	21	90
		$(\Sigma X)^2$	81	25	81	49	900
	4	ΣX	10	11	4	5	30
		ΣX^2	34	41	6	9	90
		$(\Sigma X)^2$	100	121	16	25	900
(N = 76)	1	ΣX	7	7	9	7	30
		ΣX^2	21	21	27	21	90
		$(\Sigma X)^2$	49	49	81	49	900
	2	ΣX	50	63	40	37	190
		ΣX^2	152	223	98	97	570
		$(\Sigma X)^2$	2500	3969	1600	1369	36,100
Independents	3	ΣX	52	43	51	44	190
		ΣX^2	160	129	153	128	570
		$(\Sigma X)^2$	2704	1849	2601	1936	36,100
	4	ΣX	45	59	39	47	190
		ΣX^2	137	209	95	129	570
		$(\Sigma X)^2$	2025	3481	1521	2209	36,100
(N = 216)	1	ΣX	65	60	31	34	190
		ΣX^2	233	200	57	80	570
		$(\Sigma X)^2$	4225	3600	961	1156	36,100
	5	ΣX	60	37	52	41	190
		ΣX^2	220	85	160	105	570
		$(\Sigma X)^2$	3600	1369	2704	1681	36,100
Fraternity Men	1	ΣX	130	172	140	98	540
		ΣX^2	374	590	422	234	1620
		$(\Sigma X)^2$	16,900	29,584	19,600	9604	291,600
	2	ΣX	143	139	142	116	540
		ΣX^2	449	425	426	320	1620
		$(\Sigma X)^2$	20,449	19,321	20,164	13,456	291,600
54	3	ΣX	113	160	125	142	540
		ΣX^2	307	550	345	418	1620
		$(\Sigma X)^2$	12,769	25,600	15,625	20,164	291,600

TABLE XII (Continued)

VALUES NECESSARY FOR ANALYSIS OF VARIANCE, FORM A SHEETS

Group	No. Ind. in Sample	I t e m	Sta- tis- tic	Value of Indicated Statistic				
				Response				Total
				A	B	C	D	
Frater- nity Men (Cont.)	4		ΣX	166	140	88	146	540
			ΣX^2	560	406	184	470	1620
			$(\Sigma X)^2$	27,556	19,600	7744	21,316	291,600
	5		ΣX	138	103	138	161	540
			ΣX^2	424	247	404	545	1620
			$(\Sigma X)^2$	19,044	10,609	19,044	25,921	291,600

Form B score sheets were discussed in Chapter III under Step 3 of phase C, and as was pointed out there, the entries of that Form could not be realized until after the analysis of the Form A results had been completed under Step 2 of that phase. Thus, after the compilation of the information shown in Table XII, the committee proceeded to undertake the analysis of variance of the data rendered by the Form A sheets.

Step 2--Analyzing the Data, Intra-Stratum.

It will be recalled that the purpose of the intra-stratum analysis of Step 2 of this phase is to discover which "choices," if any, of each of the five "items" are chosen "significantly" over the others by a particular constituency. Thus, in fulfillment of the requirements of this "Step," the statistical technique of analysis of variance was applied to the values found in Table XII, page 177.

Although the fifteen variance tables associated with the

analysis of the Form A sheets are presented, the computational analysis is shown for only three cases.

From Table XII, the values for choices A, B, C, D, of item 1, rendered by 19 "independents" are analyzed below:

(1) Total Sum of Squares:

$$\sum X_t^2 - \frac{(\sum X_t)^2}{N} = 570 - \frac{36,100}{76} = 570 - 475 = 95$$

(2) Between Groups (choices)
Sum of Squares:

$$\begin{aligned} & \frac{(\sum X_A)^2}{19} + \frac{(\sum X_B)^2}{19} + \frac{(\sum X_C)^2}{19} + \frac{(\sum X_D)^2}{19} - \frac{(\sum X_t)^2}{76} = \\ & \frac{2500}{19} + \frac{3969}{19} + \frac{1600}{19} + \frac{1369}{19} - \frac{36,100}{76} = \frac{9438}{19} - 475 \\ & = 496.737 - 475 \\ & = 21.737 \end{aligned}$$

(3) Within Groups Sum of Squares:

$$\begin{aligned} & \sum X_A^2 - \frac{(\sum X_A)^2}{19} + \sum X_B^2 - \frac{(\sum X_B)^2}{19} + \sum X_C^2 - \frac{(\sum X_C)^2}{19} + \sum X_D^2 - \frac{(\sum X_D)^2}{19} = \\ & 152 - \frac{2500}{19} + 223 - \frac{3969}{19} + 98 - \frac{1600}{19} + 97 - \frac{1369}{19} = \\ & 570 - \frac{9438}{19} = 570 - 496.737 = 73.263 \end{aligned}$$

Variance Table

Source of Variation	Sum of Squares	d. f.	Mean Square	F-Ratio
Between Groups	21.737	3	7.2457	7.12 (S)
Within Groups	73.263	72	1.0175	
Total	95.000	75		

Entering the F-table of Edwards, with $n_1 = 3$ and $n_2 = 72$ degrees of freedom, it is found that $F = 7.12$ is significant beyond the 1% point.⁷ This means that a value of $F = 7.12$, under these conditions, would occur less than once out of one hundred times due to chance factors alone. It therefore may be inferred that there is a statistically significant difference between the mean scores of the choices (groups) A, B, C, and D, and in order to discover specifically which "means" are significantly different, the t-test for determining significant differences between "means" is applied as follows:

1. The null hypothesis is stated: There is no significant difference between the mean scores of choice B and choice D of item 1, resulting from the rankings by the "independent" respondents.
2. Testing for a significant difference between mean scores of choices B and D respectively, where Mean B = 3.316, and Mean D = 1.947, formula (7), page 103, is applied:

$$t = \frac{3.316 - 1.947}{\sqrt{1.0175} \sqrt{\frac{1}{19} + \frac{1}{19}}} = \frac{1.369}{\sqrt{.1071}} = \frac{1.369}{.3272} = 4.18$$

Using Table V of Edwards⁸ it is found that a value of $t = 4.18$ from a random sample with 72 degrees of freedom would occur less

⁷Reproduced from Snedecor, Statistical Methods (Ames, Iowa: Iowa State College Press), by permission of the author and publisher.

⁸Reprinted from Table IV of Fisher, Statistical Methods for Research Workers (Edinburgh: Oliver and Boyd, Ltd.), by permission of the author and publisher.

than once out of one hundred times due to chance factors alone, and therefore the null hypothesis is rejected, thus inferring that a significant difference may exist between the mean scores of choices "B" and "D."

3. The null hypothesis: There is no significant difference between the mean scores of choice "B" and choice "C" of item 1, resulting from the "rankings" of the "independent" respondents.

4. Applying formula (7), page 103, where the Mean C = 2.105:

$$t = \frac{3.316 - 2.105}{.3272} = \frac{1.211}{.3272} = 3.701$$

Entering the t-Table, a value of $t = 3.701$ from a random sample with 72 degrees of freedom would occur less than once out of one hundred times due to chance factors alone, and therefore the null hypothesis is rejected, thus inferring that a significant difference may exist between the mean scores of choices B and C.

5. The null hypothesis: There is no significant difference between the mean scores of choice B and choice A of item 1, resulting from the rankings of the "independent" respondents.

6. Applying formula (7), page 103, where the Mean A = 2.632:

$$t = \frac{3.316 - 2.632}{.3272} = \frac{.584}{.3272} = 1.7$$

Entering the t-Table, a value of $t = 1.993$ from a random sample with 72 degrees of freedom is found at the 5% level of significance. Since our value of $t = 1.7$ is less than the value of "t" found at the 5% level, the null hypothesis must be accepted, and therefore

choice B is not significantly different from choice A.

Hence, it is seen that choice B is significantly different from choices D and C, but not from A. Therefore, for all practical purposes, B may be considered the first choice, significantly so, and choice A, the second choice of the "independent" respondents concerning item 1.

As a second illustration, the values from Table XII for choices A, B, C, D of item 2, rendered by 19 "independents" are analyzed below. Employing the same formulas that were used in the first illustration:

$$(1) \text{ Total Sum of Squares: } 570 - 475 = 95$$

$$(2) \text{ Between Groups (choices)} \\ \text{Sum of Squares:}$$

$$\frac{2704}{19} + \frac{1849}{19} + \frac{2601}{19} + \frac{1936}{19} - 475 = \frac{9090}{19} - 475 \\ = 478.421 - 475 = 3.421$$

$$(3) \text{ Within Groups Sum of Squares:}$$

$$160 - \frac{2704}{19} + 129 - \frac{1849}{19} + 153 - \frac{2601}{19} + 128 - \frac{1936}{19} = 570 - \frac{9090}{19} \\ = 570 - 478.421 = 91.579$$

Variance Table				
Source of Variation	Sum of Squares	d. f.	Mean Square	F-ratio
Between Groups	3.421	3	1.1403	F<1 (N.S.)
Within Groups	91.579	72	1.272	
Total	95.000	75		

A value of $F < 1$, with $n_1 = 3$ and $n_2 = 72$ degrees of freedom is not significant at the 5% point, and therefore it may be inferred that there is no significant difference between the mean scores of the choices A, B, C, and D of item 2 resulting from the rankings by the "independent" respondents.

As the third and final illustration of the computational procedures associated with the analysis of variance of Step 2 of phase C, the values from Table XII of choices A, B, C, and D associated with item 4 and the "fraternity men" constituency is analyzed below by employing the same formulas that were used in the first illustration:

(1) Total Sum of Squares:

$$1620 - \frac{291,600}{216} = 1620 - 1350 = 270$$

(2) Between Groups (choices) Sum of Squares:

$$\frac{27,556}{54} + \frac{19,600}{54} + \frac{7744}{54} + \frac{21,316}{54} - \frac{291,600}{216} =$$

$$\frac{76,216}{54} - \frac{291,600}{216} = 1411.408 - 1350 = 61.408$$

(3) Within Groups Sum of Squares:

$$560 - \frac{27,556}{54} + 406 - \frac{19,600}{54} + 184 - \frac{7744}{54} + 470 - \frac{21,316}{54} =$$

$$1620 - 1411.408 = 208.592$$

Variance Table

Source of Variation	Sum of Squares	d. f.	Mean Square	F-ratio
Between Groups	61.408	3	20.469	20.803 (S)
Within Groups	208.592	212	.9839	
Total	270.000	215		

Entering the F-table, with $n_1 = 3$ and $n_2 = 212$ degrees of freedom, it is found that $F = 20.803$ is significant beyond the 1% point. It therefore may be inferred that there is a statistical significant difference between the mean scores of the choices (groups) A, B, C, and D.

1. The null hypothesis: There is no significant difference between the mean scores of choice A and choice C of item 4, resulting from the rankings by the "fraternity men" respondents.
2. Applying formula (7), page 103, where Mean A = 3.074, and Mean C = 1.629:

$$t = \frac{3.074 - 1.629}{\sqrt{.9839 \sqrt{\frac{1}{54} + \frac{1}{54}}}} = \frac{1.445}{.1908} = 7.57$$

Entering the t-Table, a value of $t = 7.57$ from a random sample with 212 degrees of freedom would occur less than once out of one hundred times due to chance factors alone, and therefore the null hypothesis is rejected, thus inferring that a significant difference may exist between the mean scores of choices A and C.

3. The null hypothesis is stated in regard to choices A and B of item 4 resulting from the rankings of the fraternity men respondents.
4. Applying formula (7), page 103, where Mean B = 2.593:

$$t = \frac{3.074 - 2.593}{.1908} = \frac{.481}{.1908} = 2.52$$

A value of $t = 2.52$ from a random sample with 212 degrees of freedom is significant beyond the 5% level, which means that such a value would occur less than 5 times out of one hundred times due

to chance factors alone. Thus the null hypothesis is rejected, inferring that a significant difference may exist between the mean scores of choices A and B.

5. The null hypothesis is stated in regard to choices A and D.

6. Applying formula (7), where Mean D = 2.704:

$$t = \frac{3.074 - 2.704}{.1908} = \frac{.370}{.1908} = 1.92$$

A value of $t = 1.92$ from a random sample with 212 degrees of freedom is in doubt, because a value of $t = 1.97$ is found in the Table at the 5% level under such conditions, and since the difference between these t -values is only .05, the null hypothesis might be rejected, but on the other hand since there is a slight discrepancy between the calculated and tabular values, small as it may be, the null hypothesis might equally rightfully be accepted as well. In this case the committee decided to consider the hypothesis as rejected. However, this action was to be noted in the report, and thus on this basis it was inferred that choice A was significantly different from choice D.

The above illustrated procedures of analysis were applied to each of the five items under each of the three constituencies, thus yielding $5 \times 3 = 15$ such analyses. The variance tables for each Item under each of the three constituencies are shown in Appendix C, page 251. After these variance tables were completed, the t -test for determining a statistically significant difference between means was applied to those cases where the F -ratio was significant. As a result the "significant choices" of the constituencies were determined and are shown in Table XIII, where

(N. S. C.) indicates "No Significant Choice," and those choices with an asterisk placed after them are the choices with the highest mean score that were chosen by a particular constituency as significantly different from all of the other choices, except in certain cases. In the exceptional cases the "asterisked" choice is accompanied by another choice. For example, Item 2 under the Advisers constituency shows (D*;A). This means that choice D of Item 2 was chosen by the Advisers as statistically significantly different from choices B and C, but not from A. In the latter cases, the written report covered under Step 2 of phase D should make special note of this condition, thus giving a more complete and meaningful picture of the situation.

TABLE XIII

STATISTICALLY SIGNIFICANT AND NON-SIGNIFICANT
CHOICES OF THE CONSTITUENCIES

Constituencies	Items				
	1	2	3	4	5
I. Fraternity Men	B*	(N.S.C.)	B*	A*	D*
II. Advisers	(N.S.C.)	D*;A	(N.S.C.)	B*;A	(N.S.C.)
III. Independents	B*;A	(N.S.C.)	B*	A*;B	A*

Upon consulting Table XIII, it is noted that under Item 2 the three constituencies did not show a majority selection of any particular choice, with the possible exception of choice D. Similarly, under Item 5, a majority selection by the constituencies failed to exist, although choice A was preferred by the

"Independents," and choice D by the "Fraternity Men." Thus, further analysis of these two Items was indicated. In order to carry out further analysis, Form B sheets were filled out for Item choices: 2D, 5A and 5D. These sheets were analyzed under the procedures of the inter-strata analysis of Step 3 of phase C. In concluding this Step, it should be pointed out that for those readers who might be interested, a completed sample copy of the Form B sheet has been placed in Appendix B, page 238 .

Step 3--Analyzing the Data, Inter-Strata.

It should be pointed out that for those Items of the questionnaire that did not reveal a unanimously selected "choice," nor a substantial majority of the constituencies favoring one of the choices, a Form B sheet had to be compiled. Form B, in effect, is an inter-strata or inter-constituency diagram that may be analyzed by the same technique that was applied in Step 2 of phase C, namely, the analysis of variance, single classification.

The results of this analysis will show whether a "statistically significant" choice of one of the respondent groups is acceptable to the other constituencies that had made either "no significant choice," or some other "choice" as shown by analyses of the data on the Form A sheet. If the "significant choice" of one of the groups proved to be acceptable to all of the constituencies as a result of the analysis of this Step, Step 3, this "choice" could be considered representative of the opinion of the population concerning its subject matter despite the fact that it had not appeared as a "significant choice" of all of the constituencies on the Form A sheet analysis. However, in such a

case, the written report should contain a complete explanation and qualification of the recommendations made concerning such "choices." By such action the investigatory personnel provides the commissioning agency with details that are necessary for more well-informed decision-making relative to the problem area.

The complete analyses shown below are those associated with Item choices 2D, 5A and 5D. Quite coincidentally the results illustrate all of the possibilities that could occur under this phase of the treatment of the data. The first analysis shown is the one associated with Item 2, choice D; where Constituency I is composed of 54 fraternity men, Constituency II is that of 3 advisers, and Constituency III is formed by 19 "independents." The values⁹ associated with the respective constituencies necessary to carry out the analysis of variance, along with the actual analytical procedures are as follows:

	<u>I</u>		<u>II</u>		<u>III</u>	
	$\frac{\sum X_{2D}}{116}$	$\frac{\sum X_{2D}^2}{320}$	$\frac{\sum X_{2D}}{11}$	$\frac{\sum X_{2D}^2}{41}$	$\frac{\sum X_{2D}}{44}$	$\frac{\sum X_{2D}^2}{128}$
	116	320	11	41	44	128
	$(\sum X_{2D})^2$	13,456	121		1936	
Means:	$\frac{116}{54} = 2.148$		$\frac{11}{3} = 3.67$		$\frac{44}{19} = 2.316$	
$\sum X_t = 171$			$\sum X_t^2 = 489$		$(\sum X_t^2) = 29,241$	N = 76
(1) Total Sum of Squares:	$\sum X_t^2 - \frac{(\sum X_t)^2}{76} = 489 - \frac{29,241}{76}$					

⁹The data may be procured through the Office of the Counselor of Men's Activities, Wayne State University, Detroit, Michigan.

$$= 489 - 384.75 = 104.25$$

(2) Between Groups (constituencies) Sum of Squares:

$$\begin{aligned} & \frac{(\sum X_I)^2}{54} + \frac{(\sum X_{II})^2}{3} + \frac{(\sum X_{III})^2}{19} - \frac{29,241}{76} = \\ & \frac{13,456}{54} + \frac{121}{3} + \frac{1936}{19} - \frac{29,241}{76} = 391.418 - 384.75 \\ & = 6.668 \end{aligned}$$

(3) Within Groups Sum of Squares:

$$\begin{aligned} & \sum X_I^2 - \frac{(\sum X_I)^2}{54} + \sum X_{II}^2 - \frac{(\sum X_{II})^2}{3} + \sum X_{III}^2 - \frac{(\sum X_{III})^2}{19} = \\ & 320 - \frac{13,456}{54} + 41 - \frac{121}{3} + 128 - \frac{1936}{19} = 489 - 391.418 = \\ & 97.582 \end{aligned}$$

Variance Table

Source of Variation	Sum of Squares	d. f.	Mean Square	F-ratio
Between Groups	6.668	2	3.334	2.494 (N.S.)
Within Groups	97.582	73	1.3367	
Total	104.250	75		

Since the F-ratio = 2.494 is not significant at the 5% point, it may be inferred that there is no statistically significant difference between the mean scores of the groups (constituencies) on item choice 2D. Therefore, choice D of Item 2 might be considered representative of all of the constituencies despite the fact that the analysis of the Form A sheets resulted in two of the

constituencies, the "independents" and "fraternity men," showing no significant choice in regard to item 2 subject matter. Emphasis is placed on the fact that the word "might" is employed in regard to assuming that choice D could be representative of the population, and it should be stated that special note of this circumstance was made by the study committee in its report to the commissioning agency.

In the case of Item 5, two constituencies, the "independents" and "fraternity men," selected different choices, A and D, as significant within their own groups. Thus Step 3 of phase C examines the possibility of both the choices, or one of them, or none of them, as being capable of representing the population opinion concerning the subject matter of Item 5.

The data and analytical procedures associated with item choice 5A are shown below.¹⁰ Again, roman numeral I designates the "fraternity men" constituency composed of 54 respondents, II the "advisers" composed of 3 respondents, and III the 19 "independent."

	<u>I</u>		<u>II</u>		<u>III</u>	
$\frac{\Sigma X_{5A}}{138}$	$\frac{\Sigma X_{5A}^2}{424}$	$\frac{\Sigma X_{5A}}{7}$	$\frac{\Sigma X_{5A}^2}{21}$	$\frac{\Sigma X_{5A}}{60}$	$\frac{\Sigma X_{5A}^2}{220}$	
$(\Sigma X_{5A})^2$	19,044	49		3600		
Means:	$\frac{138}{54} = 2.556$	$\frac{7}{3} = 2.33$		$\frac{60}{19} = 3.158$		
$\Sigma X_t = 205$		$\Sigma X_t^2 = 665$		$(\Sigma X_t)^2 = 42,025$		N = 76

¹⁰See footnote 9, page 188.

(1) Total Sum of Squares:

$$665 - \frac{42,025}{76} = 665 - 552.96 = 112.04$$

(2) Between Groups (constituencies) Sum of Squares:

$$\frac{19,044}{54} + \frac{49}{3} + \frac{3600}{19} - \frac{42,025}{76} = 558.474 - 552.96 = 5.514$$

(3) Within Groups Sum of Squares:

$$424 - \frac{19,044}{54} + 21 - \frac{49}{3} + 220 - \frac{3600}{19} = 665 - 558.474 = 106.526$$

Variance Table				
Source of Variation	Sum of Squares	d. f.	Mean Square	F-ratio
Between Groups	5.514	2	2.7568	1.89 (N.S.)
Within Groups	106.526	73	1.4592	
Total	112.040	75		

Since the F-ratio = 1.89 is not significant at the 5% point, it may be inferred that there is no statistically significant difference between the mean scores of the groups (constituencies) on item choice 5A. Therefore, choice A of item 5 might be considered representative of the population's opinion concerning the content of Item 5.

Upon completing the analysis associated with 5A, all that was left to be considered as another possibility for representing population opinion was Item choice 5D. The data and analysis, with the same symbolism as was employed in the case of item choice 5A,

are shown below.¹¹

I	II	III	
$\frac{\sum X_{5D}}{161}$	$\frac{\sum X_{5D}^2}{545}$	$\frac{\sum X_{5D}}{7}$	$\frac{\sum X_{5D}^2}{21}$
$\frac{\sum X_{5D}}{161}$	$\frac{\sum X_{5D}^2}{545}$	$\frac{\sum X_{5D}}{41}$	$\frac{\sum X_{5D}^2}{105}$
$(\sum X_{5D})^2$	25,921	49	1681
Means:	$\frac{161}{54} = 2.982$	$\frac{7}{3} = 2.333$	$\frac{41}{19} = 2.163$
$\sum X_t =$	209	$\sum X_t^2 =$	671
		$(\sum X_t)^2 =$	43,681
		N =	76

(1) Total Sum of Squares:

$$671 - \frac{43,681}{76} = 671 - 574.75 = 96.25$$

(2) Between Groups (constituencies) Sum of Squares:

$$\frac{25,921}{54} + \frac{49}{3} + \frac{1681}{19} - \frac{43,681}{76} = 584.825 - 574.750 = 10.075$$

(3) Within Groups Sum of Squares:

$$545 - \frac{25,921}{54} + 21 - \frac{49}{3} + 105 - \frac{1681}{19} = 671 - 584.825 = 86.175$$

Variance Table				
Source of Variation	Sum of Squares	d. f.	Mean Square	F-ratio
Between Groups	10.075	2	5.0375	4.27 (S)
Within Groups	86.175	73	1.1805	
Total	96.250	75		

¹¹See footnote 9, page 188.

Since the value of the F-ratio = 4.27 is significant beyond the 5% point, it may be inferred that there is a significant difference between the mean scores of the groups (constituencies) on item choice 5D. Therefore, choice D of item 5 cannot be considered representative of the population's opinion concerning the content of Item 5.

With the completion of Step 3 of phase C, the analysis of the data, in this case, was completed. It should be noted that had numerical data of a time series nature been available it would have been necessary to conclude the analysis of the problem area with Step 4, which is devised for the purpose of effecting a trend analysis. Such analysis might prove to be corroborative or otherwise concerning the findings yielded by the previous analyses of Step 1 of phase B, and Steps 2 and 3 of phase C. Thus at this point the study committee was prepared to undertake Step 1 of phase D, which deals with decisions concerning the recommendations to be made in the written report based upon the findings of the analytical steps in the methodology.

D. Procedures of Reporting and Recommending

Step 1--Making Statistical Inferences Concerning Difference and Trend.

Since the analysis of attitudinal data results in an attempt to discover "significant differences," and those yielded by trend analysis of numerical data determines, primarily, relationship in the form of trend, conclusions considering the findings from both types of analyses must be made under Step 1 of phase D. However, in this case, a trend analysis was not effected, and therefore the

study committee faced only the problem of considering the facts and conclusions resulting from the analyses of the attitudinal data. Thus there was no need for considering the process of "elaboration," usually associated with "trend," as discussed in Chapter II, pages 124 - 129, and since the conclusions associated with "significant differences" were clearly denoted during the analyses under Steps 2 and 3 of phase C, the process carried out by the study committee under this Step resolved itself into one of deciding how to explain and interpret the recommendations which were to be made in the written report. Ultimately, it was decided that there were no recommendations or findings that would result in debatable or controversial issues, and on that note the committee decided it was ready to undertake the writing of the report according to the outline suggested in Step 2 of this phase.

Step 2--Preparing the Written Report.

The report associated with the fraternity self-evaluation study was the result of the combined efforts of all of the committee members. Each phase of the report, as suggested by the recommended outline form on pages 131 and 132, was discussed and written by the total committee. There was no sub-committee structure employed in the writing of the report. As a result of this effort each committee member was well-informed of the structure and content of the various phases of the study and the recommendations and findings concerning them.

In considering the actual writing of the report, the committee readily agreed that the suggested outline would guarantee and facilitate the inclusion of all pertinent data and information

resulting from the study. However, it was generally felt that since the Dean of Students had consented to the study committee's proposal that each Interfraternity Council fraternity receive a copy of the report, it would be necessary to employ terminology of a much less technical nature than that employed in the suggested form.

As a result of this thinking certain modifications of the outline were made. First, the phases of the suggested outline dealing with "Problem Area Definition" and "Problem Area Orientation" along with their sub-headings were placed under the general heading of "Introduction" with the accompanying sub-headings of "Definition of the Self-Study," "Purpose," and "Background Information." The phases of the suggested outline dealing with "Sample Selected" and "Methods of Studying the Problem Area" with their associated sub-headings were used as they appeared in the recommended form.

However, the two final phases of the suggested outline, "Findings of the Problem Area" and "Conclusions and Recommendations," along with their associated sub-headings, were placed under the heading of "Findings and Recommendations" which in turn contained the two sub-headings, "What the Study Found," and "Recommended Action." Thus, the outline employed by the study committee appeared as follows:

I. Introduction.

- A. Definition of the Self-Study.
- B. Purpose.
- C. Background Information.

II. Sample Selected.

- A. Population Represented.
- B. How Selected.
- C. Representativeness.
- D. Adequacy of Size.

III. Methods of Studying the Problem Area.

- A. Data-Gathering Instruments.
- B. Procedure of Administration.
- C. Analytical Techniques Employed.

IV. Findings and Recommendations.

- A. What the Study Found.
- B. Recommended Action.

After the outline had been completed the written report was actually prepared by "filling in" the designated categories with the appropriate information. Of great help to the committee in the direction of insuring clarity in the report was the frequent application, or employment, of the six "interrogative reminders" found on pages 130 and 131. As the result of applying these reminders, especially at the termination of the writing effort associated with each of the four phases of the report, (connoted by roman numerals in the outline), a great deal of ambiguity and so-called "over-lapping" of information was eliminated.

In the interest of time, space, and general expediency no further discussion of preparing the report will be presented here, but in place of any such possible treatment the reader is referred to Appendix C where a copy of the submitted report may be found.

Step 3--Preparation for Making Oral Report.

The preparation of the reporter in the case of the fraternity self-evaluation study presented no problem. Since the Counselor of Men's Activities was the so-called "originally designated

investigatory personnel," he was, according to the recommendations of the methodology, the logical "reporter" responsible for any verbal embellishment or explanation of the written report requested by the commissioning agency. To further alleviate the situation, the Counselor of Men's Activities being the author of the methodology possessed the recommended "sufficient" background in the statistical, analytical, and operational procedures of the methodology to give an adequate description and interpretation of how conclusions were drawn and recommendations made.

Except for the voluntary verbal explanations by the Counselor of Men's Activities at the time of presenting the written report, plus the natural interchange and probings of a minor nature associated with such a setting, the commissioning agency, the Dean of Students, had no further requests or interrogations relative to the study. Thus the fraternity self-evaluation study was completed with the exception of helping to provide a good setting for other studies that might be made in the future. Since this could be effected by complying with the requirements of Step 4 of this phase, the study committee prepared to undertake the final step of its operation.

Step 4--Providing for Other Studies.

After the report had been completed, the study committee arranged for a meeting with the editor of the campus newspaper, to be held in the Counselor of Men's Activities Office. At the meeting the report was completely discussed relative to findings, recommended actions, and the personnel involved in administering and generally effecting the study. An explanation of how good

publicity regarding this research effort might affect other such undertakings in the matter of participant cooperation, and other facets of research, were pointed out. As a result of this meeting, the study received excellent publicity and it was generally felt by the committee that a great deal had been contributed, not only to the member fraternities of the Interfraternity Council but to the general self-evaluation type of research on campus as well.

Since the methodology recommended that notes of appreciation be sent to the personnel involved in the administering of the data-gathering instrument, and since the only personnel used in this connection was the secretarial staff of the Counselor of Men's Activities Office, small enveloped notes were placed on the respective desks of the persons involved. It is worthy of note that at least on the surface the results appeared to be those which were predicted--a pleased personnel readily willing, and volunteering, to participate in the next research undertaking.

Thus the application of the methodology to an actual segment of an on-going student activities program at an urban university was effected. In all, it was an effective and illustrative effort of the methodology in action, and as a result indicated other possibilities for further application in other areas of university operation, which is discussed in the next chapter.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Summary of Purposes and Plan of Study

As pointed out in Chapter I, the problem of securing reliable evaluative information regarding student activities programs is a matter of genuine concern in universities throughout the nation. It was the purpose of this study to develop a methodology for evaluating the need, scope, operation, and implementation of program segments composing general student activities programs of institutions of higher education. Further, the proposed methodology was to be designed in a way that would permit successful application by an individual member or group of persons selected from the student body, faculty, administration, or any other component part of the university community population.

The general plan of the study was carried out by : (a) introducing the problem through discussion of the need for the study; (b) substantiating the philosophy underlying the proposed methodology; (c) justifying the forced-choice rank-ordering type questionnaire employed by the methodology; (d) discussing the sampling procedures of the methodology, including the aspects of "adequacy," "representativeness," and "allocation of a fixed sample size over a given number of strata;" (e) developing a "routine for treatment of the data by applying the statistical

technique of Analysis of Variance, Single Classification; (f) recommending a procedure for reliably interpreting the data; and (g) illustrating the methodology with practical examples throughout the study, and demonstrating it in totality by applying it to a self-evaluation study of the Interfraternity Council of Wayne State University.

The major results of the study were presented in the form of detailed and analytical description of specific procedures for (a) selecting and defining problems to be studied, (b) analyzing the problem area, (c) running a pilot study and determining size of sample needed for the main study, (d) analyzing the data, and (e) reporting and recommending.

Summary of the Proposed Methodology

Since the proposed methodology is primarily concerned with program evaluation, it should be pointed out that such evaluations may be conveniently categorized under three general headings: (1) program analysis, (2) conference method, and (3) questionnaire and interview methods. Thus these three categories have been used as basic guides and actually serve as the fundamental bases for development of the proposed methodology. These basic methods of evaluation provide the rationale for the general design and analytical techniques employed. The techniques in turn accomplish the realization of the underlying purpose of the methodology.

The intent or purpose of the proposed methodology is to secure reliable statistical information from an adequate minimum-size sample of representative source. Further, it prescribes

particular statistical techniques and methods for the treatment and interpretation of the data in regard to questions of: (a) need, (b) scope, (c) implementation, and (d) operation of activities programs in institutions of higher learning. In the interest of possible further clarification, the proposed methodology is summarized by a cursory description of the four general phases composing it.

A. Procedures of Organization and Orientation

This phase is composed of four Steps and covers the duties of the commissioning agency, the appointment and orientation of the investigatory personnel, and the individual investigator's responsibility for informing himself about the problem area.

Step 1--Designations, Definitions, and Appointments.

The commissioning agency designates and defines the area or segment of the activities program which it wishes to have studied. It also appoints an individual, office, or group to carry out the investigation, report the findings, and make recommendations for problem-resolving courses of action.

Step 2--Additional Appointments to Investigatory Group.

The originally designated individual, or group, conducting the investigation should add other members to the investigatory personnel. The final size of this committee should range from five to nine members, and each of the constituencies associated with the problem area should be represented. However, it should be pointed out that the methodology does not absolutely demand that additional members be appointed. The methodology may be applied by one person if it was so desired.

Step 3--Orienting Investigatory Personnel.

The newly appointed personnel are informed as to the definition of the problem area, its scope, and associated enumerative data from a central reliable source. A general outline of a time schedule for the investigation and discussions of possible subcommittee structures are considered. This Step is concluded with the presentation of the methodology, and agreement upon a so-called "starting point" of the investigation.

Step 4--Individual Investigations.

With the "scope" and the "starting point" of the problem area defined, the investigatory personnel, individually, begin to amass all forms of related information, regardless of its bias. This Step enables the investigators to become more thoroughly familiar with the problem area, and places them in a better position to participate more fully in discussions pertaining to the segment under study.

B. Problem Area Analysis and Gathering of Data

The second phase of the methodology deals with analyzing the problem area, methods of data-gathering, the pilot study, determining the size of an adequate sample at a given level of confidence, and the administration of the data-gathering instrument.

Step 1--Analyzing the Problem Area.

This Step of the methodology prescribes a scientific analysis of the segment of the activities program which is under consideration. The procedures deal with (a) condition, (b) causal, (c) action, and (d) implementation analysis. From this type of analytical procedure, certain problems of value judgment, opinion, or attitude

are resolved through general agreement of the investigatory personnel. For those problems not resolved in this fashion, there is need for more opinion from a wider and larger sample. This data is gathered from the associated constituencies by employing a forced-choice rank-ordering type questionnaire.

Step 2--Developing Methods of Collecting Attitudinal Data.

Although other types of data-gathering instruments are discussed, the analytical techniques of the methodology favor most a questionnaire of forced-choice rank-ordering design. This Step prescribes the construction of such an instrument. It should be noted that the content of the instrument is composed of the unresolved "conditions" and "causes" resulting from the analytical procedures of Step 1 of this phase.

Step 3--Running a Pilot Study.

A pilot study is conducted with the questionnaire from Step 2. The constituencies randomly sampled are those which the investigatory personnel previously agreed were associated with the area under study. The pilot study is conducted on the basis of a simple random sample, and after the questionnaires are "weighted" and "scored," the criteria for determining an adequately-sized sample for the main study are established.

Step 4--Determining Size of Sample Needed.

Determining a minimum size sample for the main study, allocating it over the problem area constituencies, and selecting the sample by using random numbers are the tasks performed under this step.

Step 5--Administering Instruments for Gathering Data.

The data-gathering instrument is distributed through the office, or offices, that can most easily reach the particular individuals chosen for the sample. Instructions by the personnel distributing the questionnaire are kept to a minimum. The introductory statement in the questionnaire should provide sufficient motivation to elicit a sincere and honest response. Although a few "extra" individuals are included in the sample as a precautionary measure for preserving "adequacy," every effort should be made to obtain a completed questionnaire from each of the individuals composing the total sample. When all of the questionnaires have been returned, the "distributing" office forwards them to the representative office of the investigatory personnel.

Since the second phase of the methodology is composed of five steps, with the completion of Step 5 the phase dealing with the analysis of the problem area and the process of gathering data is concluded.

C. Treatment of the Data

The third phase of the methodology is composed of four Steps. It deals with "scoring" the questionnaire and intra-stratum, inter-strata, and trend analyses of the data. This phase deals mainly with the statistical techniques and procedures of the proposed methodology.

Step 1--Scoring the Data-Gathering Instrument and Preparing Data Analysis of Variance.

Special "score sheets," Form A, are compiled for the respondents of each constituency. If it is so indicated by the

analysis of Form A sheets, Form B sheets are compiled. Form A and Form B sheets prepare and arrange the data in such a fashion that it is ready for analysis by the statistical technique of Analysis of Variance under Steps 2 and 3 of this phase.

Step 2--Analyzing the Data, Intra-Stratum.

Each item of the data-gathering instrument is analyzed individually, in a particular stratum, by the method of Analysis of Variance, Single Classification, with the accompanying t-test of statistically significant differences. Through this analysis it is possible to determine whether each constituency favors one, more than one, or is indifferent toward, the suggested actions and implementations for resolving the causal factors of the "blocking" condition which forms the content of the items on the data-gathering instrument.

Step 3--Analyzing the Data, Inter-Strata.

Upon completing Step 2, the most preferable "choices" of each individual constituency are known, but these "choices" might differ from one constituency to another. Under this circumstance, an Analysis of Variance is performed on a Form B score sheet, to discover if a particular "choice" of each item is preferred by the combined constituencies.

Step 4--Trend Analysis of Enumerative Data.

In those problem areas where enumerative data of a time series nature are available, a "least squares straight-line" trend analysis is performed. If such information is not available, then this Step may be omitted.

With the completion of the third phase of the methodology,

it is recommended that a general review and summary of all data be carried out in preparation for the final phase of the methodology which deals with decisions concerning recommendations for problem-resolving action.

D. Procedures of Reporting and Recommending

The final phase of the methodology is composed of four Steps and deals with decisions, recommendations, the written report, qualifications of the reporter, and provision for future studies.

Step 1--Making Statistical Inferences Concerning Difference and Trend.

Under this Step the findings of the attitudinal and enumerative data analyses are considered, and decisions are made concerning the elements of "action" and "implementation" to be included in the recommendations. The investigatory personnel should report disagreement with resulting population "attitudes" which they feel will lead to an unwise course of action. In other words, the recommendations need not necessarily agree with those that the constituencies might have indicated through their responses. In any event, it is essential that all "findings" be reported, with or without accompanying recommendations.

Step 2--Preparing the Written Report.

Preparation of the written report by the investigatory personnel is covered in this Step. A suggested outline for the report is presented, and related factors essential to a good report are considered.

Step 3--Preparation for Making Oral Report.

Under this Step the qualifications of the "reporter" are

discussed. Recommendations are made to cover the situation where members of the investigatory personnel may have insufficient background in statistics to discuss clearly the findings resulting from the treatment of the data by the techniques employed in the methodology.

Step 4--Providing for Other Studies.

Recommendations for creating and maintaining a good campus atmosphere for research are made under this Step. It is noted that through such effort a college or university can provide a better setting and greater possibility for success of future evaluative studies of their programs and operations that might be made.

One of the significant aspects of this study is demonstration of the applicability of research and statistical theory to actual educational problems in such a way that research methodology rightly becomes a tool for solving real problems. This was ably demonstrated in the application of the proposed methodology to the Wayne State University Interfraternity Council Self-Evaluation Study. The facility and ease with which three students and a faculty member, acting as the investigatory personnel, conducted the "prescribed procedures" throughout the Self-Study is more than adequate testimony for the practicability, usability, and workability of the proposed methodology.

In short, the present study suggests a methodology which is a systematic attack upon the problem of student activities program evaluation. It should also be noted that where some of the methodologies found in the related literature merely suggest

criteria and assumptions for evaluations, the proposed methodology not only suggests, but actively conducts an analysis as well. Thus the methodology proposed by this study is seen to be a dynamic one that performs active analysis instead of passively suggesting evaluative criteria by which the general worth of student activities programs in institutions of higher education might be ascertained.

Further Uses of the Methodology

Although the proposed methodology was devised for the purpose of studying student activities programs in colleges and universities, the fact that it is primarily based upon the general principles of the science of statistics lends to it a quality of flexibility which permits a wide range of application to various segments and levels of school operation and program. In almost all cases, the study or research of a particular operation or area, is the search for principles and other statements which have some degree of generality. Thus, the principle being studied may be widely applicable or it may be applicable only to a particular area. In any event, the procedures invariably resolve themselves into the process of arriving at conclusions about the problem area based upon the information yielded by a "sampling" of the area under consideration. This particular process of arriving at conclusions is called "statistical inference," a designation which is more truly descriptive of the procedures than the phase "interpreting the findings resulting from statistical treatment of the data yielded by the sample." Obviously, statistical

inferences may be drawn about various aspects of administration, curriculum, program, and general operation of a school at the elementary, secondary, and collegiate levels, providing the necessary procedures of investigation have been carried out. Thus, upon this basis alone, it may be seen that further uses of the proposed methodology are definitely indicated.

To become more specific, the proposed methodology has possibilities of further application in two forms: (1) in part, and (2) in total. The application of particular "Steps" composing the methodology, to certain types of problem situations, provides a vista of possible further uses of the methodology. For example, Step 1 of phase B which deals with the scientific analysis of problem areas, may be divorced from the other "Steps" composing the methodology and be employed singly as the analytical procedure for problem resolution of various "blocking" conditions in general school operation. Such areas as staff, student-body, administration, and community relations, plus the multitude of "problem" conditions which they embody, may be readily analyzed and resolved through application of the condition, causal, action, and implementation method of analysis. In fact, this type of analysis has already been successfully applied in the area of leadership evaluation,¹ curriculum study,² classroom teaching evaluation,³

¹Charles L. Boye, "Status Leaders Evaluate Their Work," Educational Leadership (April, 1950), pp. 470-74.

²Charles L. Boye, D. Della-Dora, C. Munshaw, R. LaFrey, "River Rouge Curriculum Study," Progressive Education, Volume 30, No. 7, (May, 1953), pp. 215-19.

³Charles L. Boye, H. McKenna, L. Parrish, Y. Waskin, "Evaluating Classroom Teaching," Progressive Education, Volume 29, No. 5 (March, 1952), pp. 176-81.

and the evaluation of group activity.⁴ Thus the wide range of application provided by Step 1 of phase B, alone, adds a myriad of further uses for the methodology.

The forced-choice rank-ordering type questionnaire employed by the methodology in Step 2, phase B may be used in those investigations where it is necessary to quantify attitudinal or judgmental data. Since this situation frequently arises in various areas of investigation, another further use of part of the proposed methodology is indicated. Another part of the methodology that should find rather extensive use in research areas is that part dealing with determination of a minimum size sample prior to undertaking the main study of a problem area. This part is based upon the formula for determining a minimum size sample "n" for a normally distributed infinite population:

$$n = \frac{x'^2 c^2}{p_s^2}$$

where "x'" symbolizes the value of the normal deviate, "c" is the value of the coefficient of variation, and p_s is the amount of sampling error the operation can withstand. To enhance the further use of this part of the methodology, a "minimum size sample" table has been included, whereby once the coefficient of variation is determined and the permissible sampling error is established, the value of "n" at the 1% and 5% levels of confidence may be read directly from the table. Such a table should find extensive use in many areas of educational research, and save the investigator

⁴C. L. Boye, J. Berry, H. Fine, M. Noble, M. Stockwell, R. Steffke, "Evaluating Group Activity," Progressive Education (July, 1955), pp. 97-103.

much time and trouble in determining an adequately-sized sample for the study which he is conducting.

Other parts of the methodology which are capable of other uses are, naturally, the statistical techniques of Analysis of Variance, and Trend Analysis. However, since the methodology cannot claim credit nor exclusive right to the development and use of these procedures, it would be clearly a case of misrepresentation to discuss the multitude of possible applications for these techniques and include them in the category of further uses of the methodology.

To this point, further uses of the methodology have been treated on the basis of the capability of further application of "Steps," or parts, of the methodology. Although these claims of further application and general use may be considered "bona fide," perhaps a discussion of the possibilities of application of the total methodology in other areas would contribute more completely to the discussion. Naturally, the application of the total methodology in other areas of school operation depends greatly upon the amount of adaption necessary to meet the requirements of the desired research to be accomplished in these other areas. Generally speaking, the total methodology, with rather minor adaptations, can be applied to those areas of research that deal with program, administration, and operation evaluation and analyses, providing such analyses and evaluation rely at least partially upon attitudinal or judgmental data that can be gathered by interview or questionnaire methods. For example, the structure and operation of a particular department of the academic program may well be

analyzed by the proposed methodology, with the adaptation of adjusting the minimum sample size to the condition of a finite population when sampling the faculty members composing the department. Another application may be found in creating a structural plan for a school operation that heretofore was unstructured. In this case, minor adaptations in the area of sampling and the establishment of a study committee would probably be indicated, but with the exception of these adjustments the methodology in its present form should apply. In fact, many other possible areas could be discussed throughout school administration and operation, to which the total proposed methodology, with adaptations, might be applied. Possibly the most encompassing and generally conclusive statement that could be made about further uses of the methodology is that any problem area dealing with need, scope, operation, and implementation, where the attitudes, judgments, or opinions of associated constituencies are important, offers the possibility of a further use or application of the total methodology.

Problems for Further Study

Problems for further study may be placed in two general categories: (1) those concerned with the application of the methodology, and (2) those concerned with the improvement of the techniques and data-gathering instruments included in the methodology.

In reference to the first category, further consideration should be given to such facts as: the general setting of the

problem area to which the methodology is applied, the particular time of the school year when the methodology is employed, and, finally, the reason for the application. At first glance these areas would appear somewhat unimportant and for that matter almost meaningless to the development of a more successful methodology. However, upon closer and more thorough examination, the importance of these facts to the successful employment of the methodology, and at the same time, the need for further study and research concerning them becomes evident.

Considering the matter of the general setting of the problem area, it is entirely possible that the methodology could be aptly applied to many types of college and university campuses. However, further research in this area is definitely needed to determine the degree of similarity existing between the urban university, large campus university, small college, medium-size institutions, and the various other types of schools composing the nation's circle of higher education. Are the student activities programs of all colleges and universities throughout the nation sufficiently similar to allow for application of the methodology in all of these situations? Is it too elaborate for employment at some of the smaller schools? Is it too delimited and time-consuming for some of the large university settings? Is it too liberal in terms of committee membership, the emphasis of student opinion, and the rights and privileges of the investigatory personnel, for some institutions? Does its design and general intent place too much reliance upon the participating

factions for some college or university situations? These are but a few of the questions that are concerned with the need for further study of the general setting of the problem area to which the proposed methodology might be applied.

Another area that is deserving of further study is the one concerned with the particular time of the school year when the methodology is employed. It would appear from casual examination of this area that the time of year would indirectly affect the reliability of the findings yielded by the methodology. For example, would the question dealing with the necessity for including weekly "splash parties" in the activities calendar be answered consistently regardless of whether the response is elicited during the month of January or the month of June? In other words, must there be some type of compensating effect included in the methodology to account for the time of the school year when the data are being sought?

Another situation involved in the "time" question is the one dealing with whether reliable data may be procured during a period of campus controversy concerning the problem area under study. To illustrate, suppose a campus-wide study of the general worth of fraternities and sororities was being conducted just prior to the Christmas holiday recess, during which time these organizations had received an abundance of favorable publicity for pre-holiday philanthropic ventures. Would the attitude tend to be more favorable toward such organizations at that time than it would at some other time when possibly certain other campus groups

have leveled charges concerning what they term "discriminatory" practices in fraternal organizations? Although the answer might seem to be "yes" to this interrogation, further research is necessary to determine the true answer to such questions. If the findings of such research should result in affirmative replies, even further research is indicated to determine the extent to which "timing" of the study of a problem area affects the reliability and validity of data based upon attitude.

Almost inherent with the question of "when" the methodology is applied, is the question of "why," or the reason it was applied. The over-all effects of "why" a problem area is being studied, might well reflect in the reliability of the findings yielded by the proposed methodology, and thus further study to determine the existence and the amount of such an "effect" is indicated. If the investigatory personnel are attempting to study a particular problem area, while being aware of a certain predilection on the part of the administration for a particular outcome, the tendency for avoiding certain controversial issues, and for a general bias in one direction or the other, is highly probable. Further study of this area to first determine the existence of such an effect, and secondly to compare it with a normal situation in order to measure its degree of influence, would be of a very worthwhile nature. Thus those possible areas for further study would appear to deal with the questions of the "why," "when," and "where" facts concerning the employment of the proposed methodology.

The second general category which indicates possible areas

for further study deals with the improvement of the techniques and data-gathering instruments included in the methodology. Indirectly this deals with an attempt at further eliminating the types of errors which limit both the general reliability and validity of the methodology. In all probability the "techniques" that limit the reliability and the validity of the methodology the most are those concerned with the problem area analysis method of Step 1, phase B, which are concerned with determining the reliability of questionnaire items from the pilot study results, and the conference method of decision-making regarding the recommendations which the investigatory personnel make to the commissioning agency. The methodology would definitely be strengthened by further research in these areas that contributes to further improvement of these techniques, and hence in turn to the reliability and validity of the methodology.

Probably the most important area for further study, because it deals with the factor that possesses the greatest potential for producing errors that reflect in the reliability and validity of the methodology, is that of the data-gathering instrument. Regardless of its form, whether it be a questionnaire, interviewing schedule, or any such similar type, the data-gathering instrument basically contributes to the following general types of errors which in turn affect the findings of the methodology: (a) the error of lenience or severity, that is, personal bias; (b) the error of central tendency, or hesitation to judge an object as extremely good or bad; (c) halo effect, or the general mental attitude toward the object under consideration; (d) the logical

error resulting from presuppositions in the minds of the respondents. Although the forced-choice rank-ordering type of questionnaire overcomes these types of errors to a degree, it does not exercise this control over the personnel composing the instrument. For example, personal bias in composing possible choices for an item of the questionnaire could well destroy the validity and reliability of the over-all item. To be sure, this might well develop a systematic error throughout the instrument, and at the same time destroy the possibility of an approximately normal distribution of the responses to various items, the fact upon which the analysis of variance technique is based. Thus, it may readily be seen that such resulting errors may materially influence findings. The halo effect makes it difficult to gain a valid opinion or judgment about a particular item or object. Whether the respondent is judging observable actions or abstractions of the situation is difficult to know. The errors of central tendency are reasonably overcome by rank-ordering, but at the expense of some uncomfortable respondents who might not be as cooperative in the "other comments" sections where they have the opportunity to vent their frustration resulting from previously being forced to place choices at the respective extremes of the scale. Presuppositions actually are value judgments, and how to account for them in the investigatory personnel and the respondents, is a most difficult task. By invoking the forced-choice type of instrument the resulting problem with the respondent is fairly well resolved, but, once again, this leaves the investigatory personnel as a problem. In summary, it should be pointed out that

data-gathering instruments such as questionnaires, rating-scales, schedules, and the like, plus the accompanying techniques of devising such instruments have been refined in the past through research. By the same token, it is reasonable to expect that further study in these areas will produce even greater refinement in the future.

Although certain areas for possible further study have been suggested, the proposed methodology should not be considered weakened by the possible lackings which have been previously discussed. Actually, each one of the further study areas was given thorough and thoughtful consideration, and were taken into account during consideration of the intent and purpose of this study. For the most part, problems emanating from these areas are reasonably well controlled by the methodology; however, this does not bar the possibility of a more specialized type of investigation of these areas which might result in contributions that would materially improve and benefit the proposed methodology if they were incorporated. At the same time, it should be noted that the proposed methodology is not a panacea for all problems of evaluation associated with activities programs in institutions of higher learning. At best it is a stride in the direction of the further development of evaluation procedures for educational research, and is primarily designed for the purpose of securing, treating, and objectively interpreting data relative to the questions of: (a) need, (b) scope, (c) implementation, and (d) operation of activities programs in institutions of higher education.

APPENDIX A

1. Development and Explanation of Table XIV.
The Required Minimum Sample Size for a Specified Relative Sampling Error at the 1 and 5 Per Cent Levels of Confidence.
2. Table XIV.
3. NOTE 1. The Analysis of Variance, Sum of Squares Between Groups.
4. NOTE 2. A Summary of the Computations, Step 2, Phase C.

Development¹ of Basic Formula

The expression for the standard deviation of a "sampling distribution" derived from random samples of size "n" drawn from an infinite population is, in terms of estimates from the sample:

$$s_{\bar{x}} = \frac{s_x}{\sqrt{n}} \quad (1)$$

where " $s_{\bar{x}}$ " is the standard deviation of a distribution of arithmetic means (the sampling distribution), and is called "the standard error of the mean," "n" denotes the size of the random sample, and " s_x " is the estimate of the standard deviation of the population, and is computed from the sample.

If \bar{x} , the arithmetic mean, is normally distributed, it may be desirable to use multiples of $s_{\bar{x}}$, the standard error of the mean, to enclose different proportions of the normal distribution. Hence formula (1) may be modified as follows:

$$s_{\bar{x}} = \frac{x' s_x}{\sqrt{n}} \quad (2)$$

where x' is the normal deviate corresponding to a given probability, and at the 1 per cent level, or 99 per cent limits, is equal to 2.58; and at the 5 per cent level, or 95 per cent limits, is equal to 1.96.

¹Materials found herein are based primarily upon the treatment of the subject by A. C. Rosander in Elementary Principles of Statistics (New York: D. Van Nostrand Co., Inc.), 1951, pp. 259-61.

As it stands this expression answers the question: "Given a certain standard deviation ' s_x ' and a random sample of size ' n ,' what is the expected standard deviation of the estimated mean \bar{x} ?" or upon 'squaring' formula (2) it would answer the question: "Given a certain variance s_x^2 and a random sample of size ' n ,' what is the variance to be expected in the estimated mean \bar{x} ?" In any event, this form of a sampling formula is used to appraise the data after they are collected.

However, in the design of experiments, evaluations, and for that matter, general practice, it has been found to be more efficient to apply sampling formulas before the data are collected. One question that frequently needs to be answered is: "What is the minimum sample size required to give a relative sampling error of a specified amount in the arithmetic mean \bar{x} ?" To answer this question, formula (2) is "squared" and solved for " n ," yielding:

$$n = \frac{x^2 s_x^2}{s_{\bar{x}}^2} \quad (3)$$

It should be pointed out here that the value of " n " in (3) is computed on the basis of a theoretical estimate of the sampling error determined from pilot study data, or previous knowledge of the characteristic under examination. Therefore, after the data of the actual study are collected, the "error" should be calculated again to determine if the original estimate of error was accurate within acceptable limits, and hence if the originally computed value of " n " qualified as a minimum sample size.

Dividing both numerator and denominator of formula (3) by \bar{x}^2 ,

the arithmetic mean "squared," and denoting the following fractional expressions as:

$$c = \frac{s_x}{\bar{x}}$$

and (4)

$$p_s = \frac{s_{\bar{x}}}{\bar{x}}$$

where "c" is defined as the coefficient of variation of x, and p_s is the relative sampling error with respect to the mean, formula (3) becomes:

$$n = \frac{x^2 c^2}{p_s^2} \quad (5)$$

For those readers who may be interested in sampling from a finite population of n objects, the following formula is used as a starting point:

$$s_{\bar{x}}^2 = \frac{x^2 s_x^2}{n} \left(1 - \frac{n}{N}\right) \quad (6)$$

Then, setting $s_{\bar{x}} = p_s \bar{x}$, and solving for "n," formula (6) becomes:

$$n = \frac{x^2 c^2}{p_s^2 + \frac{x^2 c^2}{N}} \quad (7)$$

where N is the size of the finite population. If the value of N is so large that renders the fraction $\frac{x^2 c^2}{N}$ negligible when compared with p_s^2 , then formula (7) reduces, for all practical

purposes, to (5). Since a comparatively small value of N can render $\frac{x'^2 c^2}{N}$ negligible, formula (7) is seldom used and therefore, the values of Table XV are based upon formula (5). Further, if formula (5) is applied to a finite population when the situation is such that formula (7) should be used, the only effect that is produced is that of indicating a higher number of objects for the minimum size of the sample than is actually necessary. Thus, if the cost of sampling the extra number of objects may be neglected, the larger sample size will yield a better estimate of the population characteristic than the proper minimum number yielded by the appropriate formula (7). In short, this misapplication would yield an "error in the right direction," so to speak. For this reason, since the entries of Table XV are based upon formula (5), the table may be used for either infinite or finite populations with the understanding that the numbers presented are not less than the minimum size sample required for a particular coefficient of variation and relative sampling error.

In formula (5) the "c" is derived from a knowledge of the population or from a pilot study made thereof, p_s is the relative sampling error with respect to the arithmetic mean which the researcher is willing to accept, and x' is the confidence level at which it is permissible for the error to occur. The relative sampling error, p_s , and the normal deviate x' , which establishes the confidence level, may be determined on the basis of the amount and frequency of sampling error the operations can stand.

Explanation of Table XIV

The table is designed for the purpose of determining the number of objects necessary to form a sample of minimum size under the condition of a particular coefficient of variation and an acceptable relative sampling error. The reliability of the table depends upon the distribution of \bar{x} , the arithmetic mean, approximating, or actually being, a normal one. Therefore, if this condition does not exist, the table cannot be reliably used.

The columns of the table are designated by the more commonly used values of the relative sampling error, $p_s = \frac{s_{\bar{x}}}{\bar{x}}$, and the rows are designated by the values of the coefficient of variation of x , $c = \frac{s_x}{\bar{x}}$. There are two entries in each cell of the body of the table, the entry in parentheses is the minimum number of objects required at the 1% level of confidence, and the other one designates the minimum number necessary at the 5% level of confidence.

To use the table, a coefficient of variation, an acceptable relative sampling error, and the desired level of confidence, 1% or 5%, must be known. The coefficient of variation can be derived from a knowledge of the population or from a pilot study made thereof, the relative sampling error and the normal variate value of 1.96 (5% level) or 2.58 (1% level) may be determined on the basis of the amount and frequency of sampling error the operations can stand.

To illustrate, suppose a mean score, $\bar{x} = 80$, normally distributed, and a standard deviation, $s_x = 48$, results from a pilot study testing of a particular population. Consequently,

the coefficient of variation is:

$$c = \frac{s_x}{\bar{x}} = \frac{48}{80} = 0.6$$

Then, further suppose that a 5% relative sampling error is acceptable, and therefore, since $80 \times .05 = 4$, the value of the mean, \bar{x} , may vary from 76 to 84, without materially affecting the study.² Finally, suppose the operation is of such import that the researcher wishes to be, on the average, 99 per cent sure that he is making a correct inference concerning the above situation.

Entering the table with $c = .6$, $p_s = 5\%$, at the 1% level of confidence, the minimum sample size necessary to meet the above requirements is 959 individuals.

In those cases where the value of the coefficient of variation, "c," is not equal to one of the marginal values of the table, a method of rounding and linearly interpolating within columns, to the next greatest hundredths value of "c," will render an approximate value of the sample size slightly greater than the exact required minimum number found by application of the appropriate formula (5). However, once again, this is an "error in the right direction," and if such approximation is made, the sample size indicated should be of greater benefit to the sampling and estimating operations than would the minimum number found from formula (5).

Suppose the value of "n" is sought for the following conditions:

²See footnote 15, page 81.

$c = .821$, $p_s = 10\%$, and the 5% level of confidence. "Rounding" the value of $c = .821$ to $c = .83$, the next greatest hundredths value, then entering the table in column $p_s = 10\%$, the recommended interpolation may be carried out as follows:

$$c = .9 = 312 \quad (8)$$

$$c = .83 = 246 + x \quad (9)$$

$$c = .8 = 246 \quad (10)$$

then, subtracting (10) from (8):

$$\begin{array}{r} .9 = 312 \\ - .8 = -246 \\ \hline .1 \quad 66 \end{array} \quad (11)$$

and subtracting (10) from (9):

$$\begin{array}{r} .83 = 246 + x \\ - .8 = -246 \\ \hline .03 = x \end{array} \quad (12)$$

the following proportion between (11) and (12) may be established:

$$\frac{.03}{.1} = \frac{x}{66} \quad (13)$$

Solving for x : $x = (66) (.3) = 19.8$, rounded to 20.

Therefore, the sample size for $c = .83$, which will be accepted for $c = .821$, is

$$\begin{aligned} n &= 246 + x \\ &= 246 + 20 \\ n &= 266 \end{aligned}$$

The number of objects necessary for a minimum size sample, under the conditions of the above example, rendered by formula (5) is $n = 261$. Thus by approximating from the table, an extra 5 sampling units are introduced, and neglecting the cost of sampling,

the slightly greater number rendered by the table should provide a better estimate than the smaller number yielded by the formula.

As a final example, suppose the value of "n" is sought for the following conditions: $c = 1.292$, $p_s = 20\%$, at the 1% level of confidence. "Rounding" the value of $c = 1.292$ to the next greatest hundredths value, "c" becomes equal to 1.30, a marginal value for "c" in the table. Entering the table in the column $p_s = 20\%$, the minimum sample size, "n" is read directly as 281. The value for "n" rendered by formula (5), with $c = 1.292$ is 278.

Since the table is based upon the fact that \bar{x} is approximately or actually normally distributed, the range of values of "c" from 0.1 to 4.0, and the " p_s " values of 1, 5, 10, 15, 20, 25, 30, 35, and 40 per cent, render tabular values that cover most, if not all, of the situations that occur in the usual cases of research.

If the value of "n" suggested by the table for a given set of conditions seems to include a very sizable proportion of the population under study, in all probability, the population should be treated as a "small" finite one, in which formula (7) should be employed instead of Table XV.

TABLE XIV

NUMBER OF OBJECTS NECESSARY FOR A MINIMUM SIZE SAMPLE
ASSOCIATED WITH A PARTICULAR COEFFICIENT OF VARIATION
AND ACCEPTABLE RELATIVE SAMPLING ERROR

		$(p_s = \frac{s_{\bar{x}}}{\bar{x}})$ Acceptable Relative Sampling Error					
		1%	5%	10%	15%	20%	25%
($c = \frac{s_{\bar{x}}}{\bar{x}}$) Coefficient of Variation of \bar{x} .	0.1	385 (666)	16 (27)	4 (7)	2 (3)	1 (1)	1 (1)
	0.2	1537 (2663)	62 (107)	16 (27)	7 (12)	4 (7)	3 (5)
	0.3	3458 (5991)	139 (240)	35 (60)	16 (27)	9 (15)	6 (10)
	0.4	6147 (10,651)	246 (426)	62 (107)	28 (48)	16 (27)	10 (18)
	0.5	9604 (16,641)	385 (666)	96 (167)	43 (74)	24 (42)	16 (27)
	0.6	13,830 (23,963)	553 (959)	139 (240)	62 (107)	35 (61)	22 (39)
	0.7	18,824 (32,617)	752 (1305)	189 (327)	84 (145)	47 (82)	31 (53)
	0.8	24,587 (42,601)	984 (1704)	246 (426)	110 (190)	62 (107)	39 (69)
	0.9	31,117 (53,917)	1245 (2423)	312 (530)	139 (240)	78 (135)	50 (87)
	1.0	38,416 (66,564)	1537 (2663)	385 (666)	171 (296)	96 (166)	62 (107)

APPENDIX A

NOTE 1

The Analysis of Variance, Sum of Squares Between Groups.

Essentially, the sum of squares between groups is a measure of the variation of the group means about the combined mean. If the deviation of a group mean from the mean of the total (combined mean) is represented by "d," then in the present example³:

$$\begin{aligned}d_A^2 &= (\bar{X}_A - \bar{X}_t)^2 \\d_B^2 &= (\bar{X}_B - \bar{X}_t)^2 \\d_C^2 &= (\bar{X}_C - \bar{X}_t)^2 \\d_D^2 &= (\bar{X}_D - \bar{X}_t)^2\end{aligned}\tag{1}$$

Where \bar{X}_A is the mean of group A, \bar{X}_B the mean of group B, \bar{X}_C the mean of group C, \bar{X}_D the mean of group D, and \bar{X}_t the total mean of combined groups. Each of the squared deviations in (1), however, is based upon 7 observations.⁴ Consequently, these deviations must be weighted or, in other words, multiplied by 7, the number of observations in each group. Therefore:

$$\begin{aligned}7d_A^2 &= 7(\bar{X}_A - \bar{X}_t)^2 \\7d_B^2 &= 7(\bar{X}_B - \bar{X}_t)^2\end{aligned}\tag{2}$$

³See data on page 95.

⁴See data on page 95.

$$7d_C^2 = 7(\bar{X}_C - \bar{X}_t)^2 \quad (2, \text{Continued})$$

$$7d_D^2 = 7(\bar{X}_D - \bar{X}_t)^2$$

The sum of the four values in (2) is called the sum of the squares between groups. In general terminology, if there were K groups with n_i observations in each group (not necessarily an equal number of observations in each group) as was the case in the example presented, then the sum of squares between groups can be found by:

$$\text{Between Groups} = \sum_1^K n_i (\bar{X}_i - \bar{X}_t)^2 \quad (3)$$

APPENDIX A

NOTE 2

A Summary of the Computations, Step 2, Phase C.

A summary of the computations associated with Step 2, phase C, are shown in Table XV

TABLE XV

SUMMARY OF COMPUTATIONS ASSOCIATED WITH THE ANALYSIS OF VARIANCE IN STEP 2, PHASE C, OF THE PROPOSED METHODOLOGY

(Choice) Group A		Ranking Scores				(Choice) Group D	
(Choice) Group A		(Choice) Group B		(Choice) Group C		(Choice) Group D	
X_{1A}	X_{1A}^2	X_{1B}	X_{1B}^2	X_{1C}	X_{1C}^2	X_{1D}	X_{1D}^2
X_{2A}	X_{2A}^2	X_{2B}	X_{2B}^2	X_{2C}	X_{2C}^2	X_{2D}	X_{2D}^2
'	'	'	'	'	'	'	'
'	'	'	'	'	'	'	'
'	'	'	'	'	'	'	'
X_{n_1A}	$X_{n_1A}^2$	X_{n_1B}	$X_{n_1B}^2$	X_{n_1C}	$X_{n_1C}^2$	X_{n_1D}	$X_{n_1D}^2$
ΣX_A	ΣX_A^2	ΣX_B	ΣX_B^2	ΣX_C	ΣX_C^2	ΣX_D	ΣX_D^2

Computations:

1. Total Sum of Scores = $\Sigma X_A + \Sigma X_B + \Sigma X_C + \Sigma X_D = \Sigma X_t$
2. Total Sum of Squared Scores = $\Sigma X_A^2 + \Sigma X_B^2 + \Sigma X_C^2 + \Sigma X_D^2 = \Sigma X_t^2$
3. Total Sum of Squares = $\Sigma X_t^2 - \frac{(\Sigma X_t)^2}{n}$
4. Sum of Squares Between Groups = $\frac{(\Sigma X_A)^2}{n_A} + \frac{(\Sigma X_B)^2}{n_B} + \frac{(\Sigma X_C)^2}{n_C} + \frac{(\Sigma X_D)^2}{n_D} - \frac{(\Sigma X_t)^2}{n}$

5. Sum of Squares Within Groups = Total - Between Groups

Direct Computation of Sum of Squares Within Groups:

$$\Sigma X_A^2 - \frac{(\Sigma X_A)^2}{n_A} + \Sigma X_B^2 - \frac{(\Sigma X_B)^2}{n_B} + \Sigma X_C^2 - \frac{(\Sigma X_C)^2}{n_C} + \Sigma X_D^2 - \frac{(\Sigma X_D)^2}{n_D}$$

Degrees of Freedom:

1. Between Groups: $4 - 1 = 3$
2. Within Groups: $n - 4$
3. Total: $n - 1$

Thus, Table XV shows all of the necessary computations up to the establishment of "Degrees of Freedom," the variance table, the F-ratio, and the t-test of significant difference of means. Table XVI shows the general format of the variance table associated with Step 2, phase C, of the methodology.

TABLE XVI

GENERAL FORMAT OF THE VARIANCE TABLE IN STEP 2, PHASE C

Source of Variation	Sum of Squares	d. f.	Mean Square	F-Ratio
Between Groups	$\sum_{i=1}^4 n_i (\bar{X}_i - \bar{X})^2$	3	$\frac{\sum_{i=1}^4 n_i (\bar{X}_i - \bar{X})^2}{3}$	$\frac{\sum_{i=1}^4 n_i (\bar{X}_i - \bar{X})^2}{3}$
Within Groups	$\sum_{i=1}^K \sum_{j=1}^{l_i} (X - \bar{X}_i)^2$	$(n - 4)$	$\frac{\sum_{i=1}^K \sum_{j=1}^{l_i} (X - \bar{X}_i)^2}{n - 4}$	$\frac{\sum_{i=1}^K \sum_{j=1}^{l_i} (X - \bar{X}_i)^2}{n - 4}$
Total	$\sum_{i=1}^n (X - \bar{X})^2$	$n - 1$	$n - 1$	

If the F-ratio proves to be significant at 5 or 1 per cent points, the t-test must be applied to determine if there is a significant difference between mean A and mean B, or mean A and C, or mean A and D, or B and C, or B and D, or C and D. The most easily applied form of the t-test is shown in the formula (7), page 103:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{s \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

Where \bar{X}_1 and \bar{X}_2 are any two of the four possible means, n_1 and n_2 are the number of observations in the groups of the respective means, and "s" is the square root of the mean square within groups from the analysis. The degrees of freedom used for entering the t-table are those associated with the mean square within groups, in this case $n - 4$.

APPENDIX B

Forms Used in the Application of the Methodology to the Wayne State University Interfraternity Council Self- Evaluation Study.

1. Form I, Pilot Study. Sample Copy.
2. Form II, Pilot Study, Sample Copy.
3. Form A, Main Study. Sample Copy.
4. Form B, Main Study. Sample Copy.
5. Form C, Condition, Causal, Action, Implementation
Analysis Sheet.
6. Form D, Interfraternity Council Fraternities Self-
Evaluation Questionnaire.

(SAMPLE COPY)

FORM I, PILOT STUDY

ITEM: #1

TOTAL SAMPLE

Scores of Ranked Choices

Respondents	$\Sigma X \frac{A}{\Sigma X^2}$	ΣX^2	$\Sigma X \frac{B}{\Sigma X^2}$	ΣX^2	$\Sigma X \frac{C}{\Sigma X^2}$	ΣX^2	$\Sigma X \frac{D}{\Sigma X^2}$	ΣX^2	N
I. FRATERNITY MEN	45	117	65	217	57	179	33	73	(20)
II. ADVISERS	7	11	15	49	12	32	16	58	(5)
III. INDEPENDENTS	19	47	30	114	23	71	8	8	(8)
TOTAL	71	175	110	380	92	282	57	139	(33)

$M_A = 2.152$

$M_B = 3.333$

$M_C = 2.787$

$M_D = 1.727$

$\sigma_A = .8337$

$\sigma_B = .6457$

$\sigma_C = .8930$

$\sigma_D = 1.126$

$C_{1A} = .3874$

$C_{1B} = .19$

$C_{1C} = .32$

$C_{1D} = .652$

(SAMPLE COPY)

FORM II, PILOT STUDY

ITEM: 5

CONSTITUENCY: INDEPENDENTS

Scores of Ranked Choices

Respondents	<u>A</u>		<u>B</u>		<u>C</u>		<u>D</u>	
	X	X ²						
1	1	1	3	9	4	16	2	4
2	3	9	1	1	2	4	4	16
3	4	16	1	1	2	4	3	9
4	4	16	1	1	2	4	3	9
5	2	4	4	16	3	9	1	1
6	4	16	3	9	2	4	1	1
7	3	9	2	4	4	16	1	1
8	4	16	2	4	3	9	1	1
Total	25	87	17	45	22	66	16	42

$$\sigma_{5A} = 1.126 \quad \sigma_{5B} = 1.126 \quad \sigma_{5C} = .886 \quad \sigma_{5D} = 1.194$$

(SAMPLE COPY)

FORM A, MAIN STUDY

Constituency: INDEPENDENTS

Item: #3

Number in Sample: 19

Choices: A, B, D, D,

	<u>A</u>		<u>B</u>		<u>C</u>		<u>D</u>		
	X	X ²							
	4	16	1	1	2	4	3	9	
	1	1	4	16	2	4	3	9	
	1	1	4	16	2	4	3	9	
	1	1	2	4	4	16	3	9	
	3	9	4	16	1	1	2	4	
	4	16	3	9	2	4	1	1	
	1	1	4	16	3	9	2	4	
	4	16	1	1	2	4	3	9	
	3	9	4	16	1	1	2	4	
	4	16	2	4	1	1	3	9	
	1	1	4	16	2	4	3	9	
	1	1	4	16	3	9	2	4	
	1	1	4	16	3	9	2	4	
	2	4	4	16	3	9	1	1	
	2	4	3	9	1	1	4	16	
	2	4	4	16	1	1	3	9	
	2	4	4	16	1	1	3	9	
	4	16	2	4	3	9	1	1	
	4	16	1	1	2	4	3	9	
<hr/>									
ΣX	45		59		39		47		$\Sigma X_t = 190$
ΣX^2		137		209		95		129	$\Sigma X_t^2 = 570$
$(\Sigma X)^2$	= 2025		3481		1521		2209		$(\Sigma X_t)^2 = 36,100$
<hr/>									
M	$\frac{45}{19} = 2.368$		$\frac{59}{19} = 3.105$		$\frac{39}{19} = 2.053$		$\frac{47}{19} = 2.474$		N = 76

(SAMPLE COPY)

FORM B, MAIN STUDY

Item: #1

Choice: B

Constituencies: I. Fraternity Men - Size - 54
 II. Advisers - Size - 3
 III. Independents - Size - 19

	I		II		III		IV (TOTALS)	
	$\frac{\Sigma X}{\Sigma X^2}$	$\frac{\Sigma X^2}{\Sigma X}$	$\frac{\Sigma X}{\Sigma X^2}$	$\frac{\Sigma X^2}{\Sigma X}$	$\frac{\Sigma X}{\Sigma X^2}$	$\frac{\Sigma X^2}{\Sigma X}$	$\frac{\Sigma X_t}{\Sigma X_t^2}$	$\frac{\Sigma X_t^2}{\Sigma X_t}$
	172	590	11	41	63	223	246	854
$(\Sigma X)^2$	29,584		121		3969		60,516	
M	3.185		3.67		3.316		N = 76	

$$(1) \text{ Total Sum of Squares: } 854 - \frac{60,516}{76} = 854 - 796.263 = 57.737$$

$$(2) \text{ Between Groups Sum of Squares: } \frac{29,584}{54} + \frac{121}{3} + \frac{3969}{19} - \frac{60,516}{76} =$$

$$797.085 - 796.263 = .822$$

$$(3) \text{ Within Groups Sum of Squares: } 590 - \frac{29,584}{54} + 41 - \frac{121}{3} + 223 -$$

$$\frac{3969}{19} = 854 - 797.085 = 56.915$$

Source of Variation	Sum of Squares	d. f.	Mean Square	F-ratio
Between Groups	.822	2	.411	F < 1 (N.S.)
Within Groups	56.915	73	.779	
Total	57.737	75		

Therefore, B choice of item #1 can be considered choice of population.

FORM C

Condition, Causal, Action, Implementation Analysis Sheet.

1. General Condition: Although all member fraternities of the Interfraternity Council are to some degree fulfilling the goal of striving by precept and example for the personal development of the individual in the training of mind and body, some organizations are not satisfactorily fulfilling this objective, and, in general, the endeavor toward this goal may be further improved by all of the groups.

Blocking Condition	Course	Action	Implementation
A The individuals composing the membership of a fraternity are not able to associate as a total group very frequently throughout the school year.	A ₁ Work schedules of members.	A ₁₁₁ Coordination of fraternity calendar and program with the members' work schedules, by the fraternity leadership to effect maximum associations for members.	A ₁₁₁ Fraternity leadership should plan the fraternity calendar as far in advance as possible, so that members may attempt to adjust work schedules accordingly.
	A ₂ Lack of permanent housing and meeting facilities on or near the campus.		
B There is a lack of pride relative to being a member of some of the fraternities of the Interfraternity Council.	A ₃ The individual member is still deeply involved in his family's and neighborhood associates' social life.	A ₂₁ The fraternity should provide permanent facilities for meetings and fraternal get-togethers.	A ₁₁₂ Fraternity leadership should attempt to seek out part-time jobs for those members who find it necessary to work, thus enabling group members to maintain
C Some of the member fraternities have untrained and uninformed leadership.	A ₄ Lack of adequate campus athletic and recreational facilities, plus availability of such facilities	A ₃₁ Fraternity should make an excessive	
D There is a lack of continuity in the administrative area of some member fraternities.			

Blocking Condition	Cause	Action	Implementation
E The University does not delegate authority to individual fraternities to undertake projects, involving a great deal of responsibility and accountability whereby the fraternity could exemplify by <u>precept</u> and <u>example</u> the training of the individual member.	through a metropolitan authority in widely distributed areas, leads to small "neighborhood" group formation within the total group. A ₄₁	effort to get its membership more interested in University and fraternity community life.	closer association, and creating a greater possibility for attendance of campus fraternity operations, meetings and events.
	A ₅ Lack of a central interest in some phase of the University educational program.	More attractive and better campus athletic and recreation facilities than those provided to certain local areas by the metropolitan authority should be constructed.	A ₁₁₃ Upon being informed of the necessary work schedules of the membership, fraternity leadership readjusts the calendar so that conflicts are reduced to a minimum.
	B ₁ The small size of some groups and a general difference of opinion within them, plus the lack of fraternity accomplishment.	A ₅₁ A central interest in some of the University educational program should be provided.	A ₂₁₁ The I.F.C. makes available financial plans that are being successfully operated by other member fraternities, to those fraternities that are interested in leasing, or purchasing, and operating houses on campus.
F Some fraternity advisers are not sufficiently interested nor involved in the operations and functions of the groups which they advise.	B ₂ In some cases there is a lack of fraternity tradition.	B ₁₁ Provide means for enlarging group, overcoming differences of opinion within, group realization of a successful accomplishment.	A ₂₁₂ The I. F. C. Housing Commission
	B ₃ Some fraternities employ poor procedures of, and criteria for, selecting members.	B ₂₁ Fraternity should provide means for preserving present,	
	C ₁ and D ₁ Some fraternities do not recognize the need for developing leadership qualities in their members.		

Blocking Condition	Cause	Action	Implementation
C ₂	and D ₂ Lack of delegation of responsibility, authority, and accountability to fraternity members by the leadership of the group.	while establishing further, tradition. B ₃₁ Fraternity should improve membership selection procedures.	makes available to interested fraternities information regarding rentals, purchases, and general conditions of housing facilities in the area, by continuously maintaining contact with the situation through personal investigation, real estate agents, and other sources of information.
C ₃	and D ₃ No organized leadership training provided for, or available to, fraternities through the I.F.C. or Student Activities Program of the University	C ₁₁ and D ₁₁ Provide the means for developing leadership qualities in the membership. C ₂₁ and D ₂₁ Train the leadership element so that it will realize the value of "delegated" authority, accountability, and responsibility.	
C ₄	and D ₄ Lack of active participation in fraternity, or student activities program by the leadership element, prior to its appointment to leadership positions in the fraternity.	C ₃₁ and D ₃₁ Provide a training program for fraternity leadership. C ₄₁ and D ₄₁ Encourage more participation in fraternity and other university activities.	A ₃₁₁ The I.F.C. should sponsor more competitive events, such as: essay contests, song writing contests, and other such intellectual cultural pursuit contests for the member fraternities.
E ₁	University administration has little faith in the capabilities of individual fraternity leadership.	E ₁₁ Attempt to build confidence of the administration in the capability of fraternity leadership E ₂₁ Recommendations for a general decentralization	A ₄₁₁ The I.F.C. should petition the proper authority for making

Blocking Condition	Cause	Action	Implementation
E ₂	The organization of a large "centralized" university activities program is such that an individual fraternity is rarely called upon to undertake ventures of great responsibility, accountability, and authority.	of the activities program, thus providing greater opportunity for individual organization participation in the university activities program.	available the athletic and recreational facilities for leisure time use by fraternity members.
F ₁	Some fraternities do not maintain sufficient contact with their respective advisers.	F ₁₁ Fraternity should maintain regular contact with adviser.	A ₄₁₂ The I.F.C. should request the proper authorities of the administration to increase and expand the athletic and recreational facilities as soon as possible.
F ₂	Some advisers make little effort to maintain their interests in the groups they are advising, and thus lose meaningful contact with the organization.	F ₂₁ Fraternity should use its adviser in an active, responsible, and meaningful fashion.	
F ₃	In those fraternities where there is little contact between the group and the adviser, the national turnover and change of the membership usually contributes to further disinterest between the group and its adviser.	F ₃₁ See F ₁₁ and F ₂₁ .	A ₄₁₃ The I.F.C. through a "Sports Council," working with the University Intramural Director, should attempt to improve the present I.F.C. sports program, in the areas of coordination, dissemination of information, encouraging further and more diverse participation, and general administration.
		F ₄₁ The adviser should resign, and the fraternity thoughtfully and carefully select a new one.	
		F ₅₁ Select an <u>interested</u> person, possibly a faculty person who was a member as an undergraduate, as an adviser.	
F ₄	In some cases the adviser gets new interests that take much of his time, and causes him to further neglect the fraternity.		

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Conditions	Causes	Action	Implementation
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F ₅ Sometimes difficulty can be directly traced to the fact that initial selection of the adviser was not wisely thought out and executed by the fraternity.		A ₅₁₁	See A ₁₁₁ through A ₄₁₃ .
		B ₁₁₁	Fraternity leadership should provide a program whereby more men are personally contacted as prospective pledges, than would otherwise be contacted under I.F.C. efforts alone.
		B ₁₁₂	Fraternity membership must become more involved, as an example, each member is required to contact one or two prospective pledges himself, and carry on the relationship throughout the rushing period.
		B ₁₁₃	Leadership should follow a program of intelligent growth and expansion and be well aware of the maximum number of members the group can support and yet remain a well-knit one.
		B ₁₁₄	The fraternity leadership should insist that all prospective pledges be fully aware of rules, regulations, traditions, membership, objectives and purposes of the fraternity before they are allowed to pledge.
		B ₁₁₅	The fraternity leadership insists that the group remains high in scholarship, athletics, and all-around endeavors, by helping each other, and indirectly the total group.
		B ₁₁₆	Fraternity leadership must be alert for potential leaders from membership, and hence develop the qualities of these individuals through example, literature, and general educational procedures.

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B₁₁₇ See A₁₁₁ through B₁₁₆.

B₂₁₁ Fraternity leadership should carry out a vigorous program of imbuing pledges and membership with organization's history and tradition.

B₂₁₂ Leadership should develop certain calendar events which may easily be carried on as a traditional event.

B₂₁₄ Fraternity should attempt to develop a group personality by means of dress, cultural pursuits, general demeanor, gentlemanliness and such.

B₂₁₅ See B₁₁₄.

B₃₁₁ The I.F.C. should continue to search for more satisfactory methods of encouraging pledging by attempting to learn the reasons why persons pledge and the methods that seem most effective for procurement.

B₃₁₂ The following suggestions might be used by the I.F.C. for pledge-rush publicity procedures:

(1) Omit fraternity night and fraternity day, and through advertising media of campus carry on a heavy publicity campaign pertaining to the period of the first rush parties, making an extra effort to reach all Freshmen and Sophomores with as much information as possible.

(2) Keep the present rush plan, but stress the personal contact on campus phase of the procedures.

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(3) Alter the present deferred rushing program so that a matriculated student may pledge at the middle of the first semester providing no "D" or "E" slips have been issued; but preventing "active membership" until the student has passed 10 credit hours with a compiled 2.0 honor point average.

(4) Have university representatives who visit high schools throughout the state completely so that students are impressed with fraternalism in their senior year of high school. Then upon arriving on campus he would be contacted through presently operating system.

C₁₁₁ and D₁₁₁ The I.F.C. should install a program for fraternity officers wherein they meet once a month to hear outstanding personalities in leadership, administration and management and discuss general fraternity problems.

C₁₁₂ and D₁₁₂ The I.F.C. should conduct a seminar composed of the "case study" method on administrative judgment with guest instructors conducting the week's discussion sessions for fraternity officers.

C₁₁₃ and D₁₁₃ The I.F.C. should provide fraternities with a brochure composed of successful administrative methods employed by other groups.

C₁₁₄ and D₁₁₄ The Director of Student Activities Office provides a "case study" seminar for advisers on the subject of fraternity leadership and administrative decision. The advisers, in turn, work in this area with their own fraternities' officers.

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C₂₁₁ and D₂₁₁ See C₁₁₁ and D₁₁₁ through
C₁₁₄ and D₁₁₄.

C₃₁₁ and D₃₁₁ See C₁₁₁ and D₁₁₁ through
C₁₁₄ and D₁₁₄.

C₄₁₁ and D₄₁₁ The I.F.C. and its member fraternities should establish and maintain a program of friendly competition based upon participation in such events as: Homecoming, holiday carnival, philanthropic endeavors, university betterment programs, and other participations of a similar nature, with the winners of the various competitions receiving awards commensurate with the event, such as: plaques, trophies, cash awards, publicity, scholarships, individual medals, and general recognition.

E₁₁₁ This point may be implemented by carrying out all of the foregoing suggested implementations of this analysis.

E₂₁₁ The I.F.C. should work more closely with the other "umbrella" groups on campus, taking advantage of the opportunities that arise for individual groups to participate through "cooperative" programs and such. In this connection, the I.F.C. would serve as a liaison group between the individual fraternities, and the "umbrella" groups.

E₂₁₂ The I.F.C. and Men's Union should establish a more cooperative program in terms of active membership and events.

E₂₁₃ The administrators of the student activities program of the university should re-evaluate its policies in regard to the programming of events and delegation of authority to

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individuals and organizations, thereby making possible an action toward "decentralization of the core program thus permitting fuller participation in a more responsible and accountable atmosphere of operation.

- F₁₁₁ The fraternity and adviser should make a special attempt to be sure that each meeting and most of the social events are attended by the adviser, and as many members as possible.
- F₁₁₂ The fraternity should seek the advice of the adviser on various issues, and thus maintain further contact besides that effected at meetings.
- F₁₁₃ The adviser and his family, where possible, should be included very frequently in the social program of the fraternity.
- F₁₁₄ The adviser, if possible, should reciprocate in the matter of social invitation to the fraternity to gather in his home, on an infrequent occasion.
- F₁₁₅ The adviser should be invited to speak at all rush parties.
- F₁₁₆ The adviser should make his rush party talks short, interesting and germane.
- F₁₁₇ The fraternity and adviser should attempt to establish an atmosphere of complete acceptance of each other by F₁₁₁ through F₁₁₆.
- F₂₁₁ See F₁₁₁ through F₁₁₇.
- F₃₁₁ See F₂₁₁.
- F₄₁₁ When the adviser feels that he can no longer offer his services to the fraternity in a meaningful and sincere fashion, he should resign.

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- F₄₁₂ If the fraternity feels that the adviser is neglecting his responsibilities, the group's leadership should discuss the problem with him in a courteous, amicable, and business-like fashion, and thus together arrive at a suitable solution to the problem.
- F₄₁₃ The fraternity should not select a "second adviser" without confronting the first with the problem, and run the risk of carrying out a sham program with the advisoral staff.
- F₅₁₁ In the case of both national and local fraternities the university faculty should be screened by the organization for a former active member of the organization.
- F₅₁₂ Initiate as an honorary member a faculty member who would be willing to participate in the affairs of the group; after a reasonable period in this capacity ask him to become the adviser to the group.
- F₅₁₃ The Student Activities Office and the Men's Activities Office should have a file of information concerning faculty members who might be good advisers, and upon request inform the seeking fraternity leadership of the availability of such individuals.
- F₅₁₄ The university administration should encourage faculty members to participate in this area of university activity by giving recognition through a lightened classload, or less departmental responsibility.

INTERFRATERNITY COUNCIL FRATERNITIES SELF-EVALUATION QUESTIONNAIRE

This is not a test! This instrument seeks only your attitudes, opinions, and judgments relative to its content.

Instructions

This questionnaire has been carefully constructed and is designed to furnish further information regarding your opinions and attitudes concerning the fraternities of the Interfraternity Council here at Wayne State University.

These questionnaires are unsigned and anonymous. A number tag is attached for the purpose of determining if the respondent has returned the questionnaire. The tags will be removed upon the return of the questionnaire and thus from that time hence there will be no way of determining which questionnaire was accompanied by which tag.

Each "item" of the questionnaire is composed of four choices: A, B, C, and D. Each "choice" of a particular "item" must be "ranked" in comparison with the other three. The ranking is accomplished as follows:

Rank the choice most closely representing your own opinion, attitude, judgment, or situation as "1", the next closest as "2", the next as "3", and finally, the least representative, as "4."

Read all of the "choices" of an "item" thoroughly and carefully before attempting to "rank" them. Make sure that each "choice" is given some ranking number. This is very important. Tied rankings are not permitted, make a distinct selection for each "choice." Do not allow anyone else to influence your answers, it is your attitudes, opinions, and judgments that are important.

THIS QUESTIONNAIRE IS ANONYMOUS

DO NOT SIGN YOUR NAME ANYWHERE ON THE QUESTIONNAIRE.

May the Self-Evaluation Study Committee take this opportunity to gratefully acknowledge and thank you for your participation and effort in this undertaking.

1. The following choices have been suggested as the basic reasons for individuals joining a fraternity. Rank the reason most closely representative of your own situation as "1"; the next closest as 2; and so on, through a ranking of "4". Be sure to assign a number to each choice.

- A _____ The desire to affiliate with a group that offers pleasant associations and allows me the opportunity to participate in a sports program and at the same time become more socially acclimated to the University.

- B _____ The desire to affiliate with a group that offers pleasant associations and an opportunity for my development in areas such as; leadership and social activities.

- C _____ The desire to affiliate with a group that offers the opportunity for pleasant associations with friends already members of the group, and for associations with friends that are pledging at the same time.

- D _____ The desire to affiliate with a group that offers pleasant associations, and the opportunity for realizing a pre-college intention of becoming a fraternity member, and thus fulfilling the wish to take a more active part in the social life of the University.

OTHER COMMENTS: _____

2. The following choices have been suggested as the benefits commonly sought by individuals through membership in a fraternity. Follow the procedure of item 1, and "rank" the "choices" listed below.

A _____ The opportunity for establishing new and lasting friendships, and the development of a better spirit of teamwork, the development of leadership qualities and the development of self-confidence.

B _____ The opportunity for establishing new and lasting friendships, participation in sports and social activities, and thus gaining a more well rounded education.

C _____ The opportunity to deal and work with fellow students, establish new and lasting friendships, and through such participation development of abilities and interests for dealing with people in general.

D _____ The opportunity for social acceptance through the establishment of new and lasting friendships, and thus the development of a more well rounded personality which in turn provides greater social confidence and ease in getting along with people.

OTHER COMMENTS: _____

3. The below choices have been suggested as certain patterns of behavior and events that might discourage people from becoming fraternity members. Follow the procedure of item 1, and "rank" the choices" listed below.

A _____ The irresponsible nature of fraternity men in the matters of drinking and general social conduct.

B _____ The sacrificing of individual identity, and the assumption of a necessary group personality which might not be representative of an individual member's true nature.

C _____ Fraternities do little in a constructive way, and do even less for their memberships.

D _____ Fraternities are mainly interested in developing the potentiality of their own members, and do not truly care nor honestly attempt to support and support and help other people.

OTHER COMMENTS: _____

4. The choices below have been suggested as certain personal problems that might prevent people from becoming fraternity members. Follow the procedure of item 1, and "rank" the choices listed below.

- A _____ After working a necessary job and devoting sufficient time to study, there is no time left for participation in a fraternity.
- B _____ Working schedule and activities outside of the University, does not allow time for fraternity participation.
- C _____ Family objection to fraternities, and the demand for scholastic achievement by parents, makes fraternity participation difficult.
- D _____ Outside University activities, indifference of friends towards fraternities, and a general lack of interest in fraternalism.

OTHER COMMENTS: _____

5. The following publicity techniques have been suggested as the most effective in the procurement of pledges. Follow the procedure of item 1, and "rank" the "choices" listed below.

- A _____ Personal contacts, letters from fraternities, rush parties, letters from the Interfraternity Council and the Dean of the Division of Student Personnel, and a fraternity night or fraternity day event are the most effective methods of procurement.
- B _____ Personal contacts, letters from fraternities, rush parties, and the contacting and signing of potentially interested men during the University registration period are the most effective methods of procurement.
- C _____ Personal contacts, letters from fraternities, rush parties, a fraternity night or fraternity day event, and the signing of potentially interested men during the University registration period are the most effective methods of procurement.
- D _____ Personal contacts, letters from fraternities, a heavily publicized and emphasized rush party period, and the contacting and signing of potentially interested men during the University registration period are the most effective methods of procurement.

OTHER COMMENTS: _____

APPENDIX C

1. Variance Tables Developed in Analyzing Data for Wayne State University Interfraternity Council Fraternities Self-Evaluation Study.
2. Self-Evaluation Study Report, Wayne State University Interfraternity Council Fraternities, Fall Semester, 1956.

APPENDIX C

The following series of fifteen tables are Variance Tables developed in analyzing data for the Wayne State University Interfraternity Council Fraternities Self-Evaluation Study.

TABLE XVII

VARIANCE TABLES ASSOCIATED WITH WAYNE STATE UNIVERSITY
INTERFRATERNITY COUNCIL SELF-EVALUATION STUDY

Variance Tables					
Constituency: Fraternity Men		Variance Table 1		Item 1	
Source of Variation	Sum of Squares	d. f.	Mean Square	F-ratio	
Between Groups	51.63	3	17.21	16.9 (S)	
Within Groups	218.37	212	1.03		
Total	270.00	215			
Constituency: Fraternity Men		Variance Table 2		Item 2	
Source of Variation	Sum of Squares	d. f.	Mean Square	F-ratio	
Between Groups	9.074	3	3.025	2.457 (N.S.)	
Within Groups	260.926	212	1.231		
Total	270.000	215			
Constituency: Fraternity Men		Variance Table 3		Item 3	
Source of Variation	Sum of Squares	d. f.	Mean Square	F-ratio	
Between Groups	23.30	3	7.77	6.68 (S)	
Within Groups	246.70	212	1.163		
Total	270.00	215			
Constituency: Fraternity Men		Variance Table 4		Item 4	
Source of Variation	Sum of Squares	d. f.	Mean Square	F-ratio	
Between Groups	61.408	3	20.469	20.803 (S)	
Within Groups	208.592	212	.9839		
Total	270.000	215			

Constituency: Fraternity Men Variance Table 5 Item 5

Source of Variation	Sum of Squares	d. f.	Mean Square	F-ratio
Between Groups	31.82	3	10.606	9.44 (S)
Within Groups	238.18	212	1.123	
Total	270.00	215		

Constituency: Advisers Variance Table 6 Item 1

Source of Variation	Sum of Squares	d. f.	Mean Square	F-ratio
Between Groups	7	3	2.333	2.33 (N.S.)
Within Groups	8	8	1.00	
Total	15	11		

Constituency: Advisers Variance Table 7 Item 2

Source of Variation	Sum of Squares	d. f.	Mean Square	F-ratio
Between Groups	11.667	3	3.889	9.34 (S)
Within Groups	3.333	8	.4166	
Total	15.000	11		

Constituency: Advisers Variance Table 8 Item 3

Source of Variation	Sum of Squares	d. f.	Mean Square	F-ratio
Between Groups	3.667	3	1.222	F < 1 (N.S.)
Within Groups	11.333	8	1.4166	
Total	15.000	11		

Constituency: Advisers Variance Table 9 Item 4

Source of Variation	Sum of Squares	d. f.	Mean Square	F-ratio
Between Groups	12.333	3	4.111	12.13 (S)
Within Groups	2.667	8	.339	
Total	15.000	11		

Constituency: Advisers Variance Table 10 Item 5

Source of Variation	Sum of Squares	d. f.	Mean Square	F-ratio
Between Groups	1	3	.333	F < 1 (N.S.)
Within Groups	14	8	1.75	
Total	15	11		

Constituency: Independents Variance Table 11 Item 1

Source of Variation	Sum of Squares	d. f.	Mean Square	F-ratio
Between Groups	21.737	3	7.2457	7.12 (S)
Within Groups	73.263	72	1.0175	
Total	95.000	75		

Constituency: Independents Variance Table 12 Item 2

Source of Variation	Sum of Squares	d. f.	Mean Square	F-ratio
Between Groups	3.421	3	1.1403	F < 1 (N.S.)
Within Groups	91.579	72	1.272	
Total	95.000	75		

Constituency: Independents Variance Table 13 Item 3

Source of Variation	Sum of Squares	d. f.	Mean Square	F-ratio
Between Groups	11.105	3	3.702	3.18 (S)
Within Groups	83.895	72	1.165	
Total	95.000	75		

Constituency: Independents Variance Table 14 Item 4

Source of Variation	Sum of Squares	d. f.	Mean Square	F-ratio
Between Groups	48.263	3	16.088	24.78 (S)
Within Groups	46.737	72	.649	
Total	95.000	75		

Constituency: Independents Variance Table 15 Item 5

Source of Variation	Sum of Squares	d. f.	Mean Square	F-ratio
Between Groups	17.263	3	5.754	5.33 (S)
Within Groups	77.737	72	1.080	
Total	95.000	75		

A
SELF - EVALUATION STUDY
OF MEMBER FRATERNITIES
OF THE INTERFRATERNITY
COUNCIL

Fall Semester

1956

Study Committee Membership

Donald King

William Jones

John Maceyko

Joseph Hill

Report of the
Self-Evaluation Study of Member Fraternities
of the Interfraternity Council

INTRODUCTION

The self-evaluation study of member fraternities of the Interfraternity Council was first suggested in the Spring Semester of 1956 by the Dean of Students. As a result of ensuing discussions between the Dean, the Director of Student Activities, and the Counselor of Men's Activities, the Dean requested that the Counselor of Men's Activities, as Adviser to the Interfraternity Council, discuss the possibility of such a study with the representatives of the member fraternities and to determine the general attitude of the groups toward such a project. The matter was discussed in a Council meeting, was received most enthusiastically by the body, and referred to the Executive Cabinet for a decision concerning the most efficient manner of conducting such an undertaking.

The Interfraternity Council Executive Cabinet decided to employ an established methodology designed specifically for self-evaluation studies, and appointed the incoming President and Vice President as nucleus members of a study committee to carry out the project.

As a result of discussions between the two study committee members and the Adviser to the Interfraternity Council, it was decided that a non-fraternity representation would be most contributory toward a more successful study effort. Thus, the final membership of the self-evaluation committee was composed of the President and Vice President elect of the Interfraternity Council, a non-fraternity member, and the Counselor of Men's Activities.

Definition of the Self-Study

The first step of the methodology being employed required that the problem area of the self-evaluation study be clearly designated and defined. In keeping with this requirement the problem area was defined as follows:

1. The twenty member fraternities of the Interfraternity Council have been requested to perform a self-evaluation study and generally assess themselves as a group relative to such questions as: Why do we exist? What have we to offer? What are we doing with our opportunities? and, finally: What should we be doing?
2. It is further suggested that information be secured from individual members pertaining generally to such questions as: Why did I join this fraternity? What am I getting out of it? and: What should I expect to get out of it?
3. Finally, and to a lesser degree, the non-fraternity students should be sampled and interrogated along the lines of: Why I am not interested in fraternities. Why, though interested, I did not pledge a fraternity. Finally, What are my attitudes toward fraternities?

Thus, with the development of the problem area definition there was established a general frame of reference and guiding outline by which the study could be more easily conducted.

Purpose of the Self-Study

The general purpose of the self-study was to create a greater awareness, on the part of the Interfraternity Council member fraternities, of the strengths and weaknesses of the presently existing fraternal program on the Wayne State University campus.

In the process of fulfilling the requirements inherent in the general purpose, two general objectives emerged. First, devising methods, actions, and program implementations to overcome discovered weaknesses and areas of inadequacy. Second, to determine, if possible, the factors most responsible for an individual affiliating, and at the same time, those most responsible for him not affiliating with a fraternity.

In essence, the general purpose underlying the self-study effort, might be considered to be the conducting of what the business world terms a "market survey", which not only includes those who have "purchased" the article, but also those who have not "purchased" the article.

Background Information

In the Fall semester of 1952, the Interfraternity Council established a committee for the purpose of revising the constitution and by-laws of the organization. In order that the revision be a meaningful one, it was necessary for the committee to carry out a surface type of survey concerning what the fraternities felt in regard to building a better fraternal program based upon a more integrated effort effected through a stronger Interfraternity Council. The revision was completed and the "new" constitution adopted at the final meeting of the Spring semester, 1953.

Since the adoption of the revised constitution, little had been done in the way of research and surveys concerning fraternity problems. To be sure, much experimentation had taken place in various phases of operation, but in the matter of evaluating the results of these experiments, there was a conspicuous lack of effort. Hence, based upon local conditions, there was a definite need for a self-evaluation type of study at this time.

Coincidentally, on a national scale, and more specifically in the states of Colorado and New York, fraternities were being called upon to show cause for the continuance of their existence. Discrimination, purposeless aims and objectives, and meaningless social programs, were some of the accusations hurled at the fraternalistic world during this period. Thus, it became necessary for fraternities to refute such claims by proving through actions and presentation of facts that, in general, conditions contrary to those claimed by the accusers were in existence and further were more the rule than the exception. Proof of such conditions could only be effected through self-study and a willingness to act upon the findings of such efforts.

Hence, the need for a fraternity self-evaluation study on the Wayne State University campus was apparent, and was based upon reasons of both a local and national nature. Coupled with the need for the study was the assumption that such an effort would show campus fraternities how well they were fulfilling their obligations to the many worthwhile principles, aims, and objectives ascribed to a good fraternity and its program.

In the context of such a background, and with the problem area of the fraternity self-study evaluation clearly defined, the study committee, following the procedures set forth in the established methodology being applied, prepared to undertake its assigned task.

SAMPLE SELECTED

One of the first problems confronting the study committee was that of gaining reliable information relative to the problem area of the self-study. Obviously, many persons have various opinions concerning fraternities and their programs, but the most informed and contributory opinions are

more likely to come from those individuals who have had an interest in, and experience with, the problem area field, than from those who have not. Thus, pursuing this logic set forth in the methodology being applied, it became immediately necessary to consider the matter of what "population" was determined by the definition of the problem area.

Population Represented

After considering the definition of the problem area, the study committee decided that the population most directly involved in the self-study was basically composed of three constituencies: (1) fraternity members, and pledges, (2) fraternity advisers, and (3) and a limited number of non-fraternity members composed of full-time matriculated freshmen and first semester sophomores.

Obviously it was impossible to contact every member of the defined population, and thus the committee was faced with the further problem of sampling it. The methodology being used supplied the answer to this problem.

How Sample Was Selected

Following the requirements of the methodology, the study committee after personally interviewing many persons, and then further analyzing the problem area, prepared a forced-choice rank-ordering type questionnaire to be used in a "pilot study". Once again, acting upon the recommendations of the methodology, a sample of 33 persons, composed of 20 fraternity men, 5 advisers, and 8 non-fraternity men, were chosen for the pilot study" from orientation class rosters and current organizational forms by means of a table of random numbers. The orientation class rosters were taken from past and present semesters.

Then, the questionnaire was administered through the Men's Activities Office to those specific persons chosen by the previously described procedures.

After quantifying, scoring, and analyzing the questionnaire content, the committee was able to determine (by procedures described later) that a random sample, of 76 persons selected by the same method that was employed in the selection of the "pilot study" sample, was large enough to yield responsible information for the defined population of 372 individuals.

Representativeness of Sample

In order that the sample of 76 persons be most truly representative of the population's thinking concerning the problem area, it was necessary to determine what proportion of the total sample should be selected from each of the three constituencies composing the defined population.

One basis for determining the aforementioned proportions to be selected from each of the constituencies is that of the size of each constituency relative to the total number of persons in the population. In the case of this study, there were 611 fraternity members and pledges, 20 advisers, and 241 randomly selected persons representing the limited non-fraternity members constituency. If the sample were to be allocated to the constituencies on the basis of relative size, 71 % of it would be composed of fraternity members and pledges, 2 % would be advisers, and 27 % would be non-fraternity members.

Although the above method of allocating a sample might well be termed "adequate", optimum results are realized if the allocation is based upon the variability of the respective constituencies. To exemplify, if it is

necessary to sample for the average height of a population which is divided into three constituencies, and if one constituency was composed of people all of the same height, and the people of the second constituency were one of two heights, while the third constituency was composed of persons of many different heights, it is rather obvious that only one person would be needed from the first constituency, a relatively few from the second, but a goodly number from the third, to approximate the average height of the population. This would hold regardless of the number of people in each constituency.

The later method of allocating a sample to various constituencies based upon their variability in the characteristic being measured is termed "optimum allocation." It was this type of allocation that was employed to insure representativeness in fraternity self-evaluation study. Based upon variability factors established by the pilot study, the total sample of 76 persons was allocated as follows: 54 fraternity members and pledges, 3 advisers, and 19 non-fraternity persons. Thus, the representativeness of the sample selected was relatively guaranteed by definition and statistical treatment of indicative data.

Adequacy of Size of Sample

Although many people were interrogated relative to various phases and aspects of the problem, and despite the fact that 33 persons were more formally involved as questionnaire respondents in the pilot study sample, the 76 persons composing the main study sample were considered the representative group of the 872 persons forming the defined population of the problem area.

The number of people necessary to form an adequately-sized sample for the self-study was determined on the basis on the variability of the population in the characteristic being measured. The rationale of the approach simply being that the more variable a population characteristic the greater the sample size needed to estimate it. Thus, without examining the statistical concepts involved, may it suffice to point out that the sample size of 76 was determined with the chance of it being inadequate less than 5 times out of 100, due to chance factors alone if the mean score of the population characteristic, or opinion, being measured was allowed to vary less than 0.4 of a point. Hence it is seen that under such conditions it is highly probable that the sample size of 76 persons was an adequate one for approximating the population opinion concerning the content of the data gathering instrument employed in the study.

METHODS OF STUDYING THE PROBLEM AREA

The methods for studying the problem area prescribed by the methodology were chiefly distributed over three broad categories: (1) data gathering instruments, (2) procedure of administration, and (3) analytical techniques employed. In the interest of keeping the report relatively concise and clear, methods of study will be treated under the previously noted categories.

Data Gathering Instruments

The data gathering instruments employed in the self-study were; (1) many informal personal interviews, (2) the forced-choice rank-ordering type of questionnaire, (3) personal investigations of materials in the files of the Men's Activities Office by study committee members,

and (4) personal investigation of some member fraternities' files for information of a particular nature by certain members of the study committee.

After the problem area had been defined, but prior to any attempt at gathering data, the study committee met to determine, if possible, a "starting point" of the self-study. As a result of discussion and investigation of the files of the Men's Activities Office, not only was a good "starting point" established, but an excellent frame of reference was discovered as well. This apparent panacea was the Decalog of Fraternity Policy which was adopted by the National Interfraternity Council Conference in November, 1945. It was the consensus of thought in the study committee that if data could be gathered relative to the ten items composing the Decalog, the defined problem area would be covered, and the self-evaluation study completed. Thus, the information sought, through the many informal personal interviews, and the personal investigations of the files of the Men's Activities Office and certain member fraternities; was related to the Decalog of Fraternity Policy. The items are as follows:

1.

The goal of the college fraternity, in harmony with the goal of the college, is to provide training and discipline of the individual who, in seeking an education, desires to make himself a useful member of society, possessing knowledge, trained skill, and capacity for accomplishment. The college fraternity, as a group organization, seeks to teach men how to live and work together, striving by precept and example for the personal development of the individual in the training of mind and body. It carries forward the fundamental purposes of education, adding a fraternal influence for correct living and individual development.

2.

The college fraternity must regard itself as an integral part of the institution in which it is located. It not only must be amenable to the rules and regulations of the college institution, but must share in all the college responsibilities of the undergraduate. The college fraternity must match the discipline of the college administration, and must accept the added responsibility incident to the supervision of group life in the chapter house. Furthermore, the college fraternity, with complete loyalty and allegiance to the college which nurtures it, has the duty of supporting in every possible way the institution of which it is a part.

3.

The college fraternity is also a business organization. Successful management requires sound financial practices and good housekeeping methods. There is the dual obligation of prompt collection of monies owed and prompt payment of accounts due. The fraternity man and the chapter group acquire strength and stature as they develop business experience and a true perception of correct business methods. Financial strength and integrity in the fraternity enables it to accomplish its other aims.

4.

The college fraternity stands for excellence in scholarship. It seeks, as a part of its college, to promote diligent application to study by the fraternity member, in order that not only the requirements of the college be met, but that achievement above the average level be attained. The college fraternity adds its rewards for intellectual attainment to those given by the college.

5.

The college fraternity accepts its role in the moral and spiritual development of the individual. It not only accepts the standards of the college, but, in addition, endeavors to develop those finer qualities of ethical conduct which add to the inner growth of man.

6.

The college fraternity recognizes that culture goes hand in hand with education and, therefore, seeks to broaden the growth of the fraternity member by encouraging the acquisition of knowledge and training in cultural subjects. It is in this field that the college fraternity augments the formal instruction of the institution in encouraging an appreciation of art, music, of literature, of dramatics, of debate of sports and games, of speaking and writing, and of national affairs.

7.

The college fraternity is the center of much of the social life of the fraternity member. As such it seeks to develop the social graces, the art of good living, the development of courtesy and kindness. Good manners, good taste and good companionship are a part of the training of every fraternity member.

8.

The college fraternity recognizes the importance of the physical well-being of its members. It seeks to provide healthful and sanitary housing. It encourages healthful practices by its members, discourages physical excesses and promotes athletic competitions in both fraternity and college life, so that mens sana in corpore sano shall be the aim of every fraternity member.

9.

The college fraternity assumes civic responsibilities. The chapter house is another training ground for good citizenship. Fraternity members are taught first their civic responsibilities as members of the college community, and are prepared in later life to assume their responsibilities to their communities and to the nation.

10.

The college fraternity seeks to develop those qualities of human understanding, of companionship, of kindness, with a knowledge and training in appraising the basic values of life, which will lead towards a better civilization, with peace and understanding among all peoples.

After the study committee had gathered data relative to the Decalog, a condition, causal, action, implementation analysis (described later) was carried out. In those instances where the findings appeared inconclusive, items relative to these areas were prepared for the forced-choice rank-ordering type questionnaire, and administered to the sample of 76 persons.

The questionnaire used in the self-evaluation study was carefully constructed and designed to furnish further information regarding opinions and attitudes concerning those areas where previous findings proved to be inconclusive.

The questionnaires were unsigned and anonymous. A number tag was attached only for the purpose of determining if the respondent had returned the questionnaire, once this was determined the tag was removed, and there was no further way of identifying the questionnaire with a respondent.

Each "item" of the questionnaire was composed of four "choices": A, B, C, and D. Each "choice" of a particular "item" was to be "ranked" in comparison with the other three.

The respondents were instructed to rank the "choice" most closely representing their own opinions, attitudes, judgments, or situations as "1", the next closest as "2", the next as "3", and finally, the least representative, as "4". They were to make sure that each "choice" had some ranking number. Tied rankings were not permitted, there was to be a distinct selection for each "choice", and the respondent was requested to give only his own opinions, and not to allow anyone else to influence his answers.

By employing such a questionnaire it was possible to quantify attitudes, opinions, or judgments, and to treat the resulting numerical data with a statistical technique capable of determining a "significant" difference between "choices" and ultimately between the constituencies opinions.

Procedure of Administration

The procedure of administration concerning the informal personal investigations, and the investigations of files in the Men's Activities Office and the member fraternities, were carried out in various settings and by many different methods. Much of the problem area was discussed in fraternity meetings, Interfraternity Council meetings, small group sessions, and during leisure time informal settings. In each case, the discussions were carried out in such a fashion that all of the participants, except the study committee members present, were unaware of the fact that they were contributing facts, opinions, experiences, and judgments concerning the problem area of the self-evaluation study.

Since the constituencies sampled were those of fraternity members and pledges, advisers, and a limited number of non-fraternity members, it was felt by the study committee that the Men's Activities Office was best equipped to dispense and collect the questionnaires of the 76 persons involved.

The secretarial staff of the Men's Activities Office was instructed to dispense the questionnaire with the simple request that it be filled out immediately in an adjacent area set aside for that purpose.

Acting upon the directions of the study committee, the Men's Activities Office drafted a short note to each member fraternity requesting that the persons listed therein report to the Men's Activities Office as soon as possible. Thus, the 54 individuals composing this part of the total sample were contacted most effectively, and appeared as requested.

The three advisers chosen as representatives of their constituency were contacted by telephone, and all of them filled out questionnaires as requested.

Reaching the non-fraternity sample was the most difficult task to effect. This matter was accomplished through telephone calls to the homes of the individuals, contact through classroom instructors, and in a few cases, personal contact by the study committee members.

Although the total effort took four days to effect, a one hundred per cent return was realized, and in all, the results of the operation were highly satisfactory.

After the last questionnaire was returned, the material was given to the study committee by the Men's Activities Office secretarial staff, and preparations were made to quantify and ultimately analyze the resulting numerical data.

Analytical Techniques Employed were of two kinds: (1) condition, causal, action, and implementation analysis, and (2) the statistical technique of analysis of variance, single classification, and the accompanying t-test for determining statistically significant differences between mean scores.

The "condition" analysis was carried out as follows: the general condition being considered was described as completely as possible in a written statement. Once this statement of the "general condition" was approved by all of the committee members, various sheets of paper were prepared in rough columnar form as shown below,

<u>Blocking Condition</u>	<u>Cause</u>	<u>Action</u>	<u>Implementation</u>
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where "Blocking Condition" describes an undesirable condition which contributes to the existence of the problematical "general condition"; "Cause" signifies the cause or causes of the "Blocking Condition"; "Action" designates the necessary actions to be taken to correct the causal factors of the blocking condition, and "Implementation" denotes how the suggested "Actions" might be accomplished.

Entries of facts, attitudes, and judgments procured through personal investigations were placed in the proper columns, as the ten items of the National Interfraternity Council Decalog were analyzed by this technique. The findings of this effort are found later in this report under the section entitled "Findings and Recommendations".

No effort will be made here to explain the statistical techniques of the analysis of variance and the t-test for determining statistically significant differences between mean scores. May it suffice to say that the procedures were correctly carried out, and that when a finding was declared "significantly different", it was so designated on the basis of the 5% level, and sometimes the 1% level, which means, in the one case, that such a result would only occur due to chance factors alone 5 times out of 100, and in the other case, one time out of 100 due to chance; and thus the declaration of "significantly different" is made on the gamble, or probability, of being wrong 5 times, or once, out of 100 times, whichever the case might be. (For those readers interested in seeing the actual analyses, such may be obtained at the Men's Activities Office.)

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FINDINGS AND RECOMMENDATIONS

The findings and recommendations of the fraternity self-evaluation study can best be reported in connection with the defined problem area. Since the questions of part 1. of the definition such as: Why do we exist? What are we doing with our opportunities? and finally: What should we be doing? cover a wide area of possibilities, the findings and recommendations relative to these questions will be reported in connection with the analyses of the ten items composing the National Interfraternity Council Decalog.

The findings and recommendations pertaining to parts 2 and 3 of the problem area definition are covered chiefly through discussion of the questionnaire items and their resulting implications.

What the study found

Considering the first item of the Decalog, which deals with the goal of the fraternity to strive by precept and example for the personal development of individuals in the training of mind and body; it was found that some organizations are not satisfactorily fulfilling this objective, and, in general, the endeavor toward this goal may be further improved by all of the groups.

The general blocking conditions and their causes that were found are shown in columnar form below. Relationship of "conditions" and "causes" is signified by using the same capital letter in each column.

Blocking Conditions

Causes

- | | | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-------------------------------------------------------------------------|
| A. | The individuals composing the membership of a fraternity are not able to associate as a total group very frequently throughout the school year. | A ₁ | Work schedules of members. |
| | | A ₂ | Lack of permanent housing and meeting facilities on or near the campus. |
| B. | There is a lack of pride relative to being a member of some of the fraternities of the Interfraternity Council. | | |
| C. | Some of the member fraternities have untrained | | |

Blocking Conditions (cont)Causes (cont)

- B. There is a lack of pride relative to being a member of some of the fraternities of the Interfraternity Council.
- C. Some of the member fraternities have untrained and uninformed leadership.
- D. There is a lack of continuity in the administrative area of some member fraternities.
- E. The University does not delegate authority to individual fraternities to undertake projects involving a great deal of responsibility where by the fraternity could exemplify by precept and example the training of the individual member.
- F. Some fraternity advisers are not sufficiently interested nor involved in the operations and functions of the groups which they advise.
- A₃ The individual fraternity member is still deeply involved in his family's and neighborhood associates' social life.
- A₄ Lack of adequate campus athletic and recreational facilities, plus availability of such facilities through a metropolitan authority in widely distributed areas, leads to small "neighborhood" group formation within the total group.
- A₅ Lack of a central interest in some phase of the University educational program.
- B₁ The small size of some groups, and a general difference of opinion within them, plus the lack of accomplishment by the fraternity underlies much of the lack of pride in the group.
- B₂ In some cases there is a lack of meaningful fraternity tradition.
- B₃ Some fraternities employ poor procedures of, and criteria for, membership selection.
- C₁ and D₁ Some fraternities do not recognize the need for developing leadership qualities in their members.
- C₂ and D₂ There is a definite lack of delegation of responsibility, authority, and accountability to fraternity members by the leadership of the group.
- C₃ and D₃ There is no

Blocking Cond.Causes (cont)

- C₃ and D₃ There is no organized leadership training provided for, or available to, fraternities through the I. F. O. or the Student Activities Program of the University.
- C₄ and D₄ Lack of active participation in fraternity, or student activities program, by the leadership element, prior to its appointment to leadership positions in the fraternity.
- E The University administration evidence little faith in the capability of individual fraternity leadership.
- E₂ The organization of a large "centralized" university activities program is such that an individual fraternity is rarely called upon to undertake university-wide ventures of great responsibility, accountability, and authority.
- F₁ Some fraternities do not maintain sufficient contact with their respective advisers.
- F₂ Some advisers make little effort to maintain their interests in the groups they are advising, and thus lose meaningful contact with the organization.
- F₃ In those fraternities where there is little contact between the group and the adviser, the natural turnover and change of the membership usually contributes to further disinterest between the group and its adviser.
- F₄ In some cases the adviser gets new interests that take much of his time, and causes him to further neglect the fraternity.
- F₅ In some cases the difficulty can be directly traced to the fact that initial selection of the adviser was not carefully considered by the fraternity.

It should be noted that the blocking conditions have been listed according to three elements of a fraternity population; the leadership element, members and pledges and the advisorship. Thus, the blocking conditions are covered from all possible aspects of the active participants in a fraternal group. Each item of the Decalog was considered and analyzed according to this pattern by the study committee.

In considering item 2 of the Decalog, which generally deals with the college fraternity's role in the administrative structure of the institution, it was generally found that the member fraternities of the Interfraternity Council are satisfactorily informed of their responsibilities in this regard, and with the exception of a few very rare occasions, are capably carrying out their activities and programs according to the requisites set forth.

Under the analysis of item 3 of the Decalog (page 10) a relatively unsatisfactory general condition was found to the extent that some fraternity men and chapter groups are not satisfactorily aware of the dual obligation of prompt collection of monies owed and prompt payment of accounts due, and thus are failing in regard to the fraternal goal of developing business experience, and a true perception of correct business methods. Such failure leads to the lack of financial strength and integrity in the fraternity which prevents the organization from accomplishing its other aims.

Pages 21 and 22 seem to be
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UNIVERSITY MICROFILMS

In most cases the member fraternities are becoming more aware of their scholastic responsibilities and are starting to investigate possible methods for effecting more desirable results in this area.

Item 5 of the Decalog deals with the college fraternity's **role** in the moral and spiritual development of the individual. It was found, with no exception, that all fraternities were well aware of their **roles** in this connection, and were attempting to carry out a responsible program in this area.

In answer to the suggestion that fraternities should plan to attend church as total groups two or more times per year, it was found that the diversity of religious faiths existent in the majority of groups made such ventures very unsatisfactory, if not unattainable. However, it should hastily be added that in those groups where such an undertaking is possible, it would be a highly desirable event to include in any fraternity's social events calender.

In the matter of the college fraternity augmenting the formal instruction of the institution in encouraging an appreciation and knowledge of such cultural subjects as art, music, literature, dramatics, debates, speaking and writing, and of national affairs; covered by item 6 of the Decalog, it was found that the member fraternities were doing little with the exception of the incidental learning that might result from the individual's efforts in this direction.

Blocking Condition

A. Fraternity leadership personally lacks sufficient interest in such pursuits to include them in the fraternity program.

B. Some fraternity members are interested in only a limited number of the cultural pursuits.

Causes

A₁ Leadership feels there are more important functions to be performed by the fraternity.

A₂ The I.F.C. is more capable of involving groups in such undertakings but offers a limited program at best.

Blocking Conditions

C. Fraternity advisers are often so interested in particular cultural areas that they do little in attempting to broaden the area of cultural pursuits for the fraternity.

Causes

A₃ The press of time resulting from work schedules, meetings, traditional events, and day to day business, tends to discourage much time being given to this area.

B. Most individuals have not had the opportunity to become fully acquainted with many of the cultural subjects listed.

B₂ Work schedules leave only so much time for leisure, and it is natural to do that which is familiar and satisfying during that interim.

B₃ I.F.C. does not sponsor enough competitions in this area, where an individual might attempt participation.

C₁ Some advisers frequently feel that they would be imposing on fraternity if they brought their personal cultural pursuits to the group.

C₂ Some advisers do enrich groups with their cultural pursuits, but do little to encourage investigation of and participation in other facets of this area.

Once again it should be pointed out that only the more general material, common to most of the groups, is being noted in this report. Items that might apply specifically to a professional group, for example, have been intentionally omitted.

Item 7 of the Decalog deals with the fact that the college fraternity is the center of much of the social life of the fraternity member, and as much seeks to develop the social graces, the development of courtesy and kindness, and an awareness of the other person's problems.

With the exception of the fact that the member

Fraternities could well participate in many more philanthropic ventures, both as individual organizations and collectively, the member fraternities were not having any difficulty fulfilling the objectives of item 7 in satisfactory fashion.

Since item 8 deals with the college fraternity's responsibility to the physical well-being of its members, the member fraternities, through the excellent fraternity athletic program of the Interfraternity Council, were well-satisfied in the fashion in which they were fulfilling this obligation. With the possible exception of necessary adaptations to the changing opinions and needs of the member fraternities, the Interfraternity Council athletic program will be preserved as most contributory in the matter of helping the member organizations with their responsibilities to the physical well-being of their members.

According to item 9 of the Decalog the college fraternity assumes civic responsibilities as members of the University community. Although all member fraternities participate in some university-wide endeavors, and hence assumes civic responsibilities as members of the university community, some of the groups could more satisfactorily fulfill the aims and objectives of this item through greater participation in such events.

Blocking Condition

A The objectives of some member fraternities revolve about a mutual interest, such as a profession, or strong common interest in a particular endeavor

Causes

A₁ Some fraternities were founded on the basis of a profession, or strong common interest in a particular endeavor.

- B. The leadership of some fraternities concentrates on a strong centralized program devoted to strengthening the organization with a minimum participation in university-wide events.
- C. Members of some fraternities prefer that the group carry out a self-supporting calendar of events with a minimum participation in University-wide events.
- D. Some advisers do not appreciate the benefits that might be derived by groups in a broader program of events.
- B₁ Some fraternity leadership is interested in short term gains and objectives.
- B₂ Some fraternity leaders do not envision the benefits derived from extensive fraternity participation in various university activities.
- B₃ Some fraternity leaders feel security in a closed strongly centralized group operation.
- C₁ Some members participate in fraternity affairs on the basis of gaining more friends in a particular sphere of activity.
- D₁ Some advisers do not wish to interfere with a leadership that appears to be running a satisfactory fraternity program.
- D₂ Some advisers do not keep themselves informed of the program being undertaken by their fraternities.
- D₃ Some fraternities do not solicit their respective advisers opinions in connection with the programs they have planned to undertake.

Item 9 specifically states: "The chapter house is another training ground for good citizenship." In the face of the lack of permanent housing, the participation in University-wide events by member fraternities takes on added importance, and should be carefully considered by all groups.

In regard to the final item of the Decalog, item 10, which deals with the college fraternity's role in developing qualities of human understanding, companionship, and understanding among all peoples; it was discovered that membership in a member fraternity of the I. F. C. makes the individual more keenly aware of his responsibilities in the area of human relations and understanding. Many of the persons interviewed made mention of the fact that by becoming a part of a system which has frequently been unjustly accused of poor human relations, there was created a constant awareness within them concerning this quality, that otherwise might not have become developed to such an extent.

The questionnaire employed by the study committee was composed of five items with four choices associated with each item. Questionnaire item 1 dealt with the basic reasons for individuals joining a fraternity. The four choices associated with this item, summarily speaking, were

- A. Pleasant associations, opportunity to participate in a sports program, and the opportunity to become more socially acclimated.
- B. Pleasant associations, opportunity for personal development in leadership and social activities.
- C. Pleasant associations with friends that are already members, and /or with friends that are pledging at the same time.
- D. Pleasant associations, opportunity for realizing a pre-college intention of becoming a fraternity member, and taking an active part in the social life of the University.

It should be noted that each choice contained a common element, and the remaining parts were peculiar to a particular segment of the

fraternity and non-fraternity persons interviewed in relation to the basic reasons why they pledged, or would pledge, depending upon the status of the individual being interviewed. The vast myriad of answers received were relegated to forms of logical "syndromes" which in turn were presented as "choices" of the related "item".

In connection with the findings of questionnaire item 1 it was found, statistically, that the "advisers" had "No Significant Choice", the "fraternity members and pledges" chose item "B" as significant, and the "non-fraternity persons" chose B as significantly higher than all choices except A. However, since further statistical analysis showed that choice B could represent the opinion of the combined constituencies, but that choice A could not; the study committee decided that "choice B" of item 1, which states:

"The desire to affiliate with a group that offers pleasant associations and an opportunity for my development in areas such as; leadership and social activities"

could be considered as most closely representing the attitudes in this regard on campus.

The second item found on the questionnaire dealt with the benefits commonly sought by individuals through membership in a fraternity. The choices, in summary form, were as follows:

- A. The establishment of new and lasting friendships, and the development of a spirit of teamwork, leadership qualities, and self-confidence.
- B. The establishment of new and lasting friendships, participation in sports and social activities, and the gaining of a more well-rounded education.
- C. The establishment of new and lasting-friendships, and the development of abilities for dealing with people.

- D. The establishment of new and lasting friendships, greater social acceptance, and the development of a more well-rounded personality.

As a result of the statistical analysis the "advisers" chose "D" significantly different from all other choices except "A"; the "fraternity members and pledges" along with the "non-fraternity persons" showed, "No Significant Choice." After further analysis it was found that choice D could represent the combined constituencies opinion, but choice A could not. Since two of the three constituencies showed "No Significant Choice" the study committee decided that the results of this item might best be considered "inconclusive."

Item 3 of the questionnaire deals with certain patterns of behavior that might discourage people from becoming fraternity members. In summary form, the choices were:

- A. Irresponsible actions in matters of drinking and social conduct.
- B. Sacrificing individual personality to a group personality that is not representative of the individual.
- C. Fraternities do little in a constructive way, and even less for their memberships.
- D. Fraternities interested in own memberships only, do not honestly attempt to support and help other people.

It should be pointed out that since "money" or "finance" was considered to be common to each of the choices, it was intentionally omitted. Upon completion of the statistical analysis it was found that the "advisers" had "No Significant Choice," but the "fraternity members and pledges" and "non-fraternity persons" chose choice B as significantly different from all other choices.

Upon further statistical analysis it was found that choice **B** could represent all of the constituencies combined, and thus the most closely representative suggested pattern of behavior and events that might discourage people from becoming fraternity members is:

"The sacrificing of individual identity, and the assumption of a necessary group personality which might not be representative of an individual's true nature."

Considering item 4 of the questionnaire which contains choices relative to certain personal problems that might prevent people from becoming fraternity members, the summarized choices were:

- A. After necessary job and study time there is no time left for participation in a fraternity.
- B. Working schedule and activities outside of the University, prevents fraternity participation.
- C. Family objection to fraternities, and the demand for scholastic achievement by parents, makes fraternity participation difficult.
- D. Outside of University activities, indifference of friends, and lack of interest in fraternities, deters fraternity participation.

The statistical analysis showed that the "advisers" chose "B" significantly over all choices except A. The "non-fraternity persons" chose A significantly over all choices except B, and "fraternity members and pledges" chose "A" significantly over all other choices. Further analysis showed that "A" could represent the combined constituencies opinion, but "B" could not, therefore concerning certain personal problems that might prevent people from becoming fraternity members, the choice most closely representative of the defined population opinion is:

"After working a necessary job and devoting sufficient time to study, there is no time left for participation in a fraternity."

Questionnaire item 5 dealt with the publicity techniques that are most effective in the procurement of pledges. Common to each of the following choices were the elements of "personal contacts," and "letters from fraternities." In summary, the choices were:

- A. Rush parties, letters from the I.F.C. and the Dean of Students, plus a fraternity day or fraternity night.
- B. Rush parties, the signing of potentially interested men during the University registration period.
- C. Rush parties, a fraternity night or fraternity day, and the signing of potentially interested men during the University registration period.
- D. A heavily publicized and emphasized rush party period, and the signing of potentially interested men during the University registration period.

As a result of statistical analysis the "advisers" showed "No Significant Choice" the "non-fraternity persons chose choice A, and "fraternity members and pledges" chose choice D. Further analysis showed that choice A could represent the combined constituencies opinion, but D could not. On the basis of the analyses the study committee decided that "fraternity members and pledges "being more informed of the results of such an effort as "A", chose "D" which would be an experiment towards a more effective procedure. On the other hand, "non-fraternity persons" not having had experience with choice A, and thus being less informed, would tend to choose this item on the basis that on the surface, it provides more possible media of publicity than would choice D.

Although there was an "other comments section provided at the end of each questionnaire item, there were few "comments" made. For this reason, and the practical ones of time and space, this limited amount of information is omitted from the report.

The so-called "findings" of this report answer only part of the questions involved in the defined problem area. This is as it should be, for in the case of a self-evaluation study a large number of the "recommendations" have come from the study respondents and as such might rightfully be termed another form of "findings". In the last analysis, a "recommendation" is a form of value judgment based upon fact and experience, and as such indirectly reflects "findings" relative to the area under consideration. It is with this mental approach, the fact that the "recommendations" are supplemental to, and, in part, a segment of the "findings" that the study committee presents the section dealings with "recommendations".

Recommended Actions

Most of the recommendations found herein were made by those persons interviewed, and those resulting from study committee deliberations were based upon factual information wherever possible, and where not possible were based on the experience and background of various member fraternities. Thus the recommended actions should not be construed as the personal development of the study committee, but as mentioned before part of the "findings" resulting from the study.

The recommended "actions" and "implementations" are frequently presented in relation to the "blocking conditions" and "causes" which they propose to correct. By heeding the capital letter and accompanying subscript designation it is comparatively easy to determine the relationships between "blocking conditions", "causes", "actions", and "implementations". Once again in the interest of time, space, and expediency; columnar presentations are utilized wherever possible.

The recommended actions and implementations associated with blocking condition A and causes A₁, A₂, A₃, A₄, and A₅ (See pages _____) of item 1 of the Decalog are shown in columnar form below.

Actions	Implementations
A ₁₁ Coordination of the fraternity calendar of events and general program with the membership's work schedules by the fraternity leadership will go far in effecting greater associations for total membership.	A ₁₁₁ The fraternity leadership should plan the fraternity calendar as far in advance as possible, involving the membership to such an extent that members may more easily adjust their work schedules and participate with the group more fully.
A ₂₁ The fraternity should make every effort to gain permanent facilities if for nothing more than meetings and fraternal get togethers.	A ₁₁₂ The fraternity leadership with the cooperation of the members should attempt to seek out part-time jobs, preferably on campus, for those members who find it necessary to work. Thus, the group members are more able to maintain a closer association and create a greater possibility for attendance of campus fraternity operations, meetings, and events.
A ₃₁ The fraternity should make every possible effort to get its members more interested in, and more involved in University and fraternity community life through the many possible facets of the University student activities program. Thus, the member participates less outside of the University.	A ₁₁₃ After receiving information concerning the necessary work schedules of the membership, the fraternity leadership should readjust the calendar of events so that conflicts are reduced to a minimum.
A ₄₁ More campus athletic fields, buildings, and recreation facilities should be constructed on campus, thus making it unnecessary for limited hours participation, and utilization of metropolitan authority facilities far removed from campus.	A ₂₁₁ The Interfraternity Council can make available to fraternities interested in housing, those financial plans that are being successfully operated by those member fraternities now possessing houses. These plans may be obtained in a very short time by applying at the Interfraternity Council Office, or the Men's Activities Office.
A ₅₁ A central interest in some phase of the University educational program should be provided by the fraternity or Interfraternity Council, whereby the members would participate and consequently associate, more fully.	A ₂₁₂ The Interfraternity Council Housing Commission can make available to interested fraternities, current information regarding rentals.

Actions

Implementations

- A₂₁₂ (continued) purchases, and general conditions of housing facilities in the area. This commission continuously maintains contact with the situation through personal investigation, real estate agencies, and other possible sources of information.
- A₃₁₁ The Interfraternity Council could sponsor more competitive events in the areas of: speech and debate, music, art, literature, and such. This may be accomplished through essay contests, song writing contests, debates on campus issues, and other such cultural intellectual pursuits.
- A₄₁₁ The Interfraternity Council should petition the proper authority for making available whenever possible the present limited athletic and recreational facilities for practice periods and general leisure time use of responsible organizations such as fraternities.
- A₄₁₂ The Interfraternity Council should request and urge the proper authorities of the administration to build new, and increase and expand the present, athletic and recreational facilities on campus as soon as possible.
- A₄₁₃ The Interfraternity Council through its "Sports Council", working with the University Intramural Director, should attempt to continually improve the I.F.C. sports program, especially in the areas of; coordination, dissemination of information, encouraging further and more diverse participation, and general administration.

 Actions

 Implementations

- A₅₁₁ A greater and more central interest in some phase of the University educational program, namely: the fraternity program may be instilled in all of the member fraternities' membership by carrying out the implementations A₁₁₁ through A₄₁₃.

Considering further Item 1 of the Decalog, the "actions" and "implementations" associated with "blocking condition" B and its causes, B₁, B₂, and B₃ dealing with "pride in being a member of a particular fraternity" are shown in columnar form below.

 Actions

 Implementations

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| <p>B₁₁ A general effort on the part of the fraternity to provide means for enlarging the group, overcoming differences of opinion within, and furnishing the opportunity for group realization of a successful accomplishment.</p> | <p>B₁₁₁ The individual fraternity's leadership should provide an active program of rushing prospective pledges based upon <u>extensive</u> personal contact by the membership's and make the Interfraternity Council pledge-rush effort a supplementary one instead of the main issue as it is in many instances of the so-called "have - not" groups.</p> |
| <p>B₂₁ The fraternity should make every effort to preserve existing tradition, and at the same time carry out a program that might well contribute further traditional events and operations.</p> | <p>B₁₁₂ The individual members of a fraternity should feel responsible to the group to the extent that, acting on their own initiative, they contact and become very friendly with one or two prospective pledges, and closely associate with them throughout the rushing period.</p> |
| <p>B₃₁ The fraternity should attempt to improve its membership selection procedures, and establish sound criteria in this area.</p> | <p>B₁₁₃ The fraternity leadership should follow a program of <u>intelligent</u> growth and expansion and be well aware of the maximum number of members the group can support and yet remain a well-knit and meaningful one.</p> |
| | <p>B₁₁₄ The fraternity leadership should insist that all prospective pledges be fully aware of rules, regulations, traditions, membership, objectives and purposes of the fraternity before they are <u>allowed</u> to pledge.</p> |

Actions

Implementations

- B₁₁₅ The fraternity leadership insists that the group remains high in scholarship, athletics, and all-around endeavors, by helping each other and indirectly the total group.
- B₁₁₆ Fraternity leadership must be alert for potential leaders from membership, and hence develop the qualities of these individuals through example, literature, and general educational procedures.
- B₁₁₇ By employing the implementations of A₁₁₁ through B₁₁₆ the "causes" under B₁ could be corrected.
- B₂₁₁ The Fraternity leadership should carry out a vigorous program of imbuing pledges and membership with the organization's history and tradition.
- B₂₁₂ The leadership element, with the help of the membership, should develop certain calendar events which may be easily carried on in a traditional sense.
- B₂₁₃ The fraternity should attempt to develop a group personality by means of cultural pursuits, gentlemanliness neat appearance in dress, and good conduct.
- B₂₁₄ By insisting that B₁₁₄ be enforced, an indirect contribution is made to "fraternity tradition".
- B₃₁₁ The Interfraternity Council should continuously search for better and more satisfactory methods of encouraging pledging, and periodically run a survey to learn the current reasons why persons are pledging and at the same time the methods of procurement that seem to be most effective.

Since the "blocking conditions" C and D are primarily concerned with the leadership and administrative area of fraternities, and further since the "causes"

of "blocking" conditions" C and D were listed in combined fashion such as: C₁, and D₁, C₂ and D₂, C₃ and D₃, and, C₄ and D₄; the resulting "actions" and implementations" were in combined form. Hence, the columnar presentation of "actions" and "implementations" are made in combination.

Actions	Implementations
C ₁₁ and D ₁₁ The fraternity advisor and present fraternity leadership should provide the means for developing leadership qualities in the membership.	C ₁₁₁ and D ₁₁₁ The I.F.C. should install a program for fraternity officers wherein they meet once a month to hear outstanding personalities in administration and management, and personnel leadership training programs. All topics discussed would be directed toward general fraternity problems in these areas.
C ₂₁ and D ₂₁ Provisions should be made for the training of the leadership element so that it will realize the value of the delegation of authority, accountability, and responsibility.	C ₁₁₂ and D ₁₁₂ The I.F.C. should conduct a seminar employing the "case study" method approach to the matter of administrative judgment and decision-making. Different guest instructors would conduct the week's discussion sessions for fraternity officers, and the length of each session would be approximately one and a half hours, the seminar to last approximately six weeks.
C ₃₁ and D ₃₁ The I.F.C. or some University agency in the co-curricular program area should provide a training program for fraternity leadership.	C ₁₁₃ and D ₁₁₃ The I.F.C. should provide member fraternities with brochure composed of successful administrative methods being employed by other groups.
C ₄₁ and D ₄₁ Fraternities should encourage members to participate more extensively in fraternity activities, and in many of the other activities available through the University Student Activities Program.	C ₁₁₄ and D ₁₁₄ The Director of Student Activities Office could provide a "case study" seminar for fraternity advisers on the subject of fraternity leadership and administrative decision. The advisers, in turn, would work in this area with their own fraternities' officers and potential leadership element.
	C ₂₁₁ and D ₂₁₁ The "cause" under C ₂₁ and D ₂₁ could easily be rectified by employing C ₁₁₁ and D ₁₁₁ through C ₁₁₄ and D ₁₁₄ .

Actions

Implementations

C₃₁₁ and D₃₁₁ The "cause under C₃₁ and D₃₁ can be rectified by employing C₁₁₁ and D₁₁₁ through C₁₁₄ and D₁₁₄."

C₄₁₁ and D₄₁₁ The I.F.C. and its member fraternities should establish and maintain a program of friendly competition based upon participation in such events as: Homecoming, Holiday Carnival, philanthropic endeavors, University betterment programs, and other participation of a similar nature; with the winners of the various competitions receiving awards commensurate with the event, such as: plaques, trophies, cash awards, publicity, scholarships, individual medals, and other forms of recognition.

The recommended "actions" and "implementations" associated with "blocking conditions E and the "causes" E₁ and E₂ are shown in columnar form below.

Actions

Implementations

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| E ₁₁ Fraternities should attempt to build the confidence of the administration in the capability of responsible fraternities and their leadership. | E ₁₁₁ The action E ₁₁ may be implemented by carrying out all of the foregoing recommended implementations of this analysis. |
| E ₂₁ The I.F.C. should make a recommendation for a certain amount of decentralization in the activities program, thus providing greater opportunity for interested individual organizations to take over a large share of the responsibility in carrying out certain events of the University Activities Program, singularly or in cooperation with operating committees in that area of activity. | E ₂₁₁ The I.F.C. should work more closely with the other "umbrella" groups on campus, taking advantage of the opportunities that arise for individual groups to participate through <u>currently existing</u> cooperative programs. In this connection the I.F.C. would serve as a liaison group between the individual fraternities and "umbrella" groups. |
| | E ₂₁₂ The I.F.C. and Mackenzie Union should establish a more cooperative program in the reciprocal utilization of fraternity members and pledges, and Union members in larger program undertakings resulting in the mutual benefit of all parties concerned. |
| | E ₂₁₃ The administrators of the student activities program should consider the possibilities of programming events that would allow the delegation of the authority of operating those events to responsible organizations, thereby taking an action toward the decentralization of the core program while at the same time providing a greater opportunity for individual organizations to participate in a more responsible and accountable sphere of operations. |

The recommended "actions" and "implementations" associated with "blocking condition" F and "causes" F₁, F₂, F₃, F₄, and F₅ completes the recommendations associated with item 1 of the Decalog. The familiar columnar presentation is shown below.

Actions	Implementations
F ₁₁ The fraternity should maintain a regular and meaningful contact with its adviser.	F ₁₁₁ The fraternity members and adviser should make a special effort to attend every meeting and most, if not all, of the social events of the group.
F ₂₁ The fraternity should use its adviser in an active, responsible, and meaningful fashion.	F ₁₁₂ The fraternity should seek the advice of the adviser on various issues, and thus maintain further contact besides that effected at meetings.
F ₃₁ This action can most effectively be carried out by employing F ₁₁ and F ₂₁ .	
F ₄₁ In such cases where the adviser does not have the time to devote to the fraternity so that his relationship with the group is a meaningful one, he should resign, and the fraternity should meticulously prepare to select another person.	F ₁₁₃ The adviser, and his family where possible, should be included very frequently in the social program of the fraternity.
	F ₁₁₄ Where the number of people involved, or the cost, is not prohibitive, the adviser, if possible should reciprocate in the matter of social invitation, and should have the fraternity gather at his home on <u>infrequent</u> occasions.
F ₅₁ The fraternity should select an <u>interested</u> person who has the time to devote to advising duties and the group, possibly a faculty person who was a member as an undergraduate.	F ₁₁₅ The adviser should be invited, attend, and speak at such parties.
	F ₁₁₆ The adviser should make his rush party talks short, interesting, and germane.
	F ₁₁₇ The fraternity and adviser should strive for complete acceptance of each other by implementing F ₁₁₁ through F ₁₁₆ .

Actions

Implementations

- F₂₁₁ Since the difference between action F₁₁ and F₂₁ is but a nuance, implementation of F₁₁₁ through F₁₁₇ should accomplish the attainment of the goal involved.
- F₃₁₁ Since this implementation deals with establishing a greater contact between the group and the adviser, primarily, it could best be implemented by employment of F₁₁₁ through F₁₁₇.
- F₄₁₁ When the adviser feels he can no longer offer his services to the fraternity in a meaningful and sincere fashion, he should resign.
- F₄₁₂ If the fraternity feels that the adviser is neglecting his responsibilities, the group's leadership should discuss the problem with him in a courteous amicable, and business-like fashion, and thus together arrive at a suitable solution to the problem.
- F₄₁₃ The fraternity should not select a "second adviser" without consulting with the first adviser about the "problem" that must be in existence. By omitting the discussion there are guilt feelings in all areas, and as a result the fraternity still has an adviser problem.
- F₅₁₁ In the case of selecting a new adviser, whether the organization is local or national, the first act of the "selections committee" should be the screening of the University faculty in the hope of finding a former member of the organization.
- F₅₁₂ Frequently, a successful method of obtaining a good adviser is through initiating the preferred faculty member as an honorary member. After a reasonable period of participation in the affairs of the group, and after all parties are well-acquainted, the honorary member is asked to become the adviser to the group.
- F₅₁₃ The Student Activities Office and the Men's Activities Office should have a file of information concerning faculty members who might be interested and would be good advisers. This information could be procured upon request by the fraternity in question.

Actions

Implementations

F₅₁₄ The University administration should encourage faculty members to participate in this area of the University's educational program by giving recognition through a lightened classload, or less departmental responsibility.

Item 2 of the Decalog deals with the fact that the college fraternity must regard itself as an integral part of the institution, must be amenable to the rules and regulations, must match the discipline of the college administration, must contribute to the supervision of group life, and further enhance the educational opportunities of the individual.

Through the present program of the I.F.C., and the excellent cooperation of the member fraternities, the requirements of Decalog item 2 are being satisfactorily fulfilled. Hence, the only recommendation that could be made in this area is that the present program be continued with embellishments and improvements that might be indicated by the findings of experimentations, evaluations, and further study.

The recommended "actions" and "implementations" associated with "blocking conditions" A, B, and C, and are shown in columnar form below.

Action	Implementation
A ₁₁ Fraternal leadership should establish an effective basic budget program.	A ₁₁₁ There are probably many methods by which action A ₁₁ may be implemented. One of the effective plans being utilized by one of the groups at present is as follows: (detailed plan may be procured through Men's Activities Office.)
A ₃₁ Fraternities should develop and install procedures of deferred payment plans.	
B ₁₁ Fraternity leadership should inculcate members with the methods of maintaining a sound personal budget of finance, and the benefits derived from such efforts.	<ol style="list-style-type: none"> 1. Leadership makes estimate of income and expenditure for the approaching year. 2. A time schedule of income and expenditure is established.

Actions

Implementations

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| <p>B₂₁ Instilling individuals with a sincere enthusiasm and loyalty toward the group, financially and otherwise.</p> <p>C₁₁ Fraternity should involve adviser in all operations of the group, financial and otherwise.</p> <p>C₂₁ The adviser, in order to carry out his duties correctly and responsibly, should make use of financial area as excellent ground for "learning experience", and working with group in a peer relationship should arrive at solutions of existing problems.</p> | <p>3. The size of the membership is estimated to establish a basis for determining pro-rated dues for the approaching year.</p> <p>4. A carefully maintained record of current financial activity (income and expenditure) for both present and future use. (financial income - expenditure prognosis.)</p> <p>A₁₁₂ The I.F.C. should install a short course training program in financial management, involving faculty from that curriculum area.</p> <p>A₂₁₁ There are probably many forms of incentive plans, one being effectively employed by one of the groups at present is as follows:</p> <p style="padding-left: 40px;">Immediate payment of financial obligation by member grants him a 10% bonus upon which he may "draw" during course of year to offset assessments during year. To exemplify, suppose the year's "dues" for each member amounts to \$50.00. Individual A pays his dues immediately. He is credited with full payment and \$5.00 surplus. <u>This is a bookkeeping entry only.</u> In two months suppose there is an assessment of \$7.50 for a dinner party. Individual A pays only \$2.50 and is "paid in full". (Further information concerning all of the ramifications of this plan may be procured at the Men's Activities Office, along with other suggested "plans" in this area.)</p> <p>A₃₁₁ Once again there are many methods of deferred payment plans. If the fraternity is operating on a "time schedule" of income and expenditure, it can operate a comparatively liberal deferred payment plan, if not, it must adjust the "term of amortization" to fit expected financial needs. If the majority of members agree, a reasonable "fee" should be paid</p> |
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Actions

Implementations

- A₃₁₁ (continued) by the member receiving the benefit. This choice should be made by the group and not the leadership. (Further information concerning specific information in this area can be procured at the Men's Activities Office).
- B₁₁₁ A small brochure pertaining to a personal financial budget of an "average fraternity man" for the current year should be prepared by the leadership and distributed to the membership. Information relative to what the "average guy" spends per year, for what, in that particular fraternity should be presented. Discussion periods relative to the subject, should be provided for by the leadership. This should be done in a sincere and serious manner.
- B₂₁₁ Through employing implementations B₂₁₁ through B₂₁₄ of item 1 of the Decalog, much can be done to instill loyalty and pride in the group. Through applying implementations A₂₁₁ through B₁₁₁ of this item responsible financial conduct on the part of the individual member may be effected.
- C₁₁₁ The adviser and the treasurer of the organization should hold short bi-weekly meetings concerning financial obligations and standing of the organization. The adviser may wish to counsel with members who are delinquent in payment of obligations. Through such efforts, plus adviser's participation in regular meeting he is involved and taking an "active part".
- C₂₁₁ The adviser should not adopt the attitude of "having the answers" in his meetings with the leadership and fraternity. He should take part in arriving at a group decision, and in the case of working with the treasurer, or small group of leaders, to carry on an interchange of ideas and through mutual agreement arrive at decisions.

The recommended "actions" and "implementations" associated with "blocking conditions" A, B, C, and D, and causes A₁, A₂, A₃, B₁, B₂, C₁, C₂, C₃, D₁, and D₂ of item 4 of the Decalog are presented in columnar form as follows:

Actions		Implementations	
A ₁₁	The fraternity leadership should not attempt a program that is financially beyond the means of the group without counting upon the financial potential of the prospective pledge group. Thus, the group can preserve its standards and qualities of membership.	A ₁₁₁	By operating on a sound budget system, the fraternity can remain financially solvent, and does not need to depend upon "pledging" a particular number of individuals to support the fraternities financial undertakings, and thus can seek individuals possessing good personal qualities and habits.
A ₂₁	The fraternity should attempt to impress its membership with the future implications, and benefits presently derived, for the individual and the group, through the attainment of a higher than average scholarship level.	A ₂₁₁	Discussions of the group's possibilities of winning the I.F.C. scholarship trophy, its potential for drawing more and better pledges with such an attainment, and the individual's self-satisfaction and ego reinforcement through attaining a higher than average scholarship level.
A ₃₁	The fraternity should insist that all members of the group, as is true in any democracy, be able to carry his full share of the responsibility in any undertaking by the group, scholastic, financial, or otherwise.	A ₃₁₁	A scholarship committee should be set up to maintain records relative to the honor point averages of members and pledges. Such tasks as comparing scholastic average upon pledging with present average, and then informing each member as to the gain or loss, would certainly inform the individual of his strengths and weaknesses and make members more aware of their obligations in this area, plus the fact of how much effort was necessary to become a well-rounded individual, scholastically, socially and otherwise.
B ₁₁	The leadership and advising element of the fraternity should make a special effort to keep the group aware of its scholastic responsibilities to a higher than average attainment.		

Actions

Implementations

- B₂₁ Fraternity leadership should make every effort to inform prospective pledges and members of the necessity of operating a well-rounded and balanced program.
- C₁₁ Through a fraternity program directed toward membership's intellectual potentialities, strengths, and weaknesses, there is an excellent opportunity to discover individuals' academic difficulties, and also their strengths.
- C₂₁ A positive program by fraternity leadership and adviser demonstrating that it is not considered "smart and sophisticated" to play the role of being indifferent to high scholastic attainment.
- C₃₁ Fraternity leadership should assess the academic potential in the general fields of science, literature, languages, and arts. Establish a nucleus group around which a tutorial program is built.
- D₁₁ The fraternity leadership and adviser should seek further information from national groups or national headquarters, whichever the case may be, relative to successful programs of up-grading scholastic achievement of the group.
- D₂₁ Fraternity leadership and adviser must insist on a positive program of action in the area of up-grading scholastic attainment, and if necessary, force it upon the group.
- B₁₁₁ A program featuring inter-fraternity plaques, advisoral scholastic awards, and other forms of recognitions, where there are many chances for many members to win some such award, should be vigorously undertaken each year.
- B₂₁₁ The making up the social calendar the fraternity leadership and adviser should promote the inclusion of "fraternity study nights", "exchange" information hours", and special tutorial programs, so that there is a balance established between the social and scholastic effort of the group.
- C₁₁₁ A scholastic exchange information board should be constructed in the fraternity house, or in case a group does not have a house a "clip" board passed around will serve the purpose, wherein the members list information needed, and information capable of offering. Establishment of a "test" file is also helpful.
- C₂₁₁ Delegation of responsibility to academically sound members, carrying out a program as described under B₁₁₁, and the effort made under B₂₁₁ and C₁₁₁ should fairly well establish the fact that the member who is scholastically indifferent does not enjoy a position of privilege or esteem within group.
- C₃₁₁ A tutorial program may be established within membership by allowing the tutorial staff a bonus amount of money on the "books" to offset assessments; and if the reserve built up by the individual is large enough, to offset other financial obligations incurred within the fraternity.

Actions

Implementations

D₁₁₁ After exhausting the local resources and possibilities, national organizations and national fraternities may be contacted in regard to plans of this type which they have found to be successful.

D₂₁₁ There are many types of "so-called" positive programs in the area of up-grading scholastic attainment, one which is presently being operated by a member group in an effective fashion is:

All pledges coming into the group must have a 2.3 honor point average instead of the University required 2.0 average.

All active members must attain at least a 2.1 honor point average each semester or go inactive until a 2.1 is attained.

Members must notify fraternity leadership of suspected academic difficulties during the semester. Leadership and adviser attempts to arrange for tutorial within group or from University faculty.

(Further detailed information concerning this plan may be obtained at the Men's Activities Office)

Item 5 of the Decalog dealing with the fraternity's role in the moral and spiritual development of the individual, reflected no problem, and except for the "suggestion" discussed immediately under the treatment of the "item" in the section dealing with what the study found, there are no further recommendations.

The recommendations associated with the "blocking conditions A, B, and C, and the "causes" A₁, A₂, A₃, B₁, B₂, B₃, C₁, and C₂ of item 6 which deals with the college fraternity augmenting the formal instruction of the institution by encouraging cultural pursuits, are shown in columnar form Below.

Actions

Implementations

A₁₁ The fraternity leadership must realize the importance of a well-balanced program of wide variety, and as far as possible, remain impartial in setting up the events of the various segments of the total program.

A₁₁₁ The advisers and leaders of fraternities should call upon experienced student activities personnel for help in advising well-rounded fraternity programs which include cultural co-curricular events as well as the so-called "extra-curricular" events.

Actions	Implementations
A ₂₁ The I.F.C. should exercise its ingenuity and inventiveness in devising programs and contests dealing with the cultural areas of art, debate, literature, music, dramatics, and others.	A ₁₁₁ (continued) This help is available if requested by the groups at the offices of the Director of Student Activities or his staff.
A ₃₁ Although there is an admitted press of time, there should be <u>some</u> allowance made for cultural pursuit types of events for the group.	A ₂₁₁ Once again, much can be learned from the Student Activities personnel who have had wide experience with such programming. This help is available upon request (see last sentence A ₁₁₁).
B ₁₁ The opportunity should be provided for members to become better acquainted with various cultural areas.	A ₃₁₁ The leadership element and the adviser should insist that such events as group attendance of legitimate theater presentations, debates, and art shows, and individual member participation in essay contests, plus the group participating in the annual "I.F.C. Sing", be included in the fraternity program calendar of events.
B ₂₁ By leadership providing a program based upon <u>group participation</u> in the cultural pursuits, the individual member is able to make more efficient use of his time schedule, and is "killing two birds with one stone", so to speak - participating with the group, and becoming better acquainted with a cultural area.	B ₁₁₁ Through implementation of A ₃₁₁ , and supplementing this effort with intra-fraternity contests for members in these areas, plus participation in many of the campus organizations sponsored events of this type, the opportunity is provided for members to become better acquainted with various cultural pursuits.
B ₃₁ The I.F.C. must exercise its ingenuity and inventiveness in devising programs that create more interest in the cultural pursuits of art, literature, debating, dramatics, music, and others.	B ₂₁₁ If the fraternity helps to plan its calendar of events, the members will have the opportunity to fit their working schedules into the fraternity program. Thus, if some of the calendar events for the fraternity are given over to varied cultural pursuits area, the membership has the opportunity of becoming interested in, and participating in, possibly other segments of the area as well as that particular one that they might have been interested in prior to affiliating with the fraternity.
C ₁₁ The adviser who possesses an interest, talent, or hobby in the cultural areas should feel it a part of his educational duty to membership to share these interests and/or these experiences with the group.	
C ₂₁ Advisers should also feel it <u>encumbent</u> upon them, that once having encouraged group interest in his cultural pursuits, to urge the group individually or collectively to seek other experiences in this general area.	

Actions

Implementations

- B₃₁₁ More competitions like the "I.F.C. Sing" must be devised in the other areas of cultural pursuits. Interfraternity debates, art shows, essay contest, and music festivals are possible events that have been suggested as part of such an effort.
- C₁₁₁ The adviser to a fraternity group is more than a "rubber stamp", "signature", or "means to an end". In one sense, he is a "frater", and a peer. In another sense he is a source of strength, and a form of "wealth" to the fraternity. Considering the latter concept, this "wealth" should be drawn upon to provide the group with a "better standard of living" in terms of the "market of the mind". Contributions from and to this "wealth" resource is essential to the healthy group. Fraternities should use the intellect and talents of their advisers in every way possible in view of the mutual broadening and enriching experiences that will definitely result from such action.
- C₂₁₁ As may be inferred from the last statement of C₁₁₁, utilization of the advisoral elements' intellect and talents is a "two - way street" and should result in a broadening experience for the advisers and the fraternities. If such does occur, and it should, mutual investigation of other cultural pursuit areas is inevitable.

Item 7 of the Decalog dealing with the social life provided for an individual member by the college fraternity was found to be satisfactory fulfilled by the member fraternities of the Interfraternity Council. However, it should hastily be added, that this is fertile territory for more experimenting with philanthropic ventures and general fraternity betterment events, and as such, should be treated as a dynamic area of multifarious possibilities.

Under item 8 of the Decalog which deals with the college fraternity's responsibilities to the physical well-being of its members, it was found that the member fraternities, under existing conditions of limited facilities, were fulfilling their obligations in this area in a highly satisfactory manner, mainly through the athletic program of the I.F.C. and the University Intramural Department.

A recommended possible expansion, which would not only meet the requirements of the "physical well-being" of members, but would greatly enhance fraternity and school spirit, would be the experiment with a "pledges-actives class games day."

Such an event has been envisioned as a competition to be held in the Spring Semester at Tartar Field, with the pledges of all fraternities from both the Fall and Spring semesters of that year challenging an equal number of "actives", the number chosen from each fraternity to equal the number of pledges for that year from each fraternity, in such contests as a tug-o-war, "flag-chase", wrestling matches, boxing matches, touch football game, "Football goal rush," and other such events.

Judging of events would be by a group composed of fraternity presidents and officers of the Interfraternity Council, or their designates. Such an event would be operated in close cooperation with the University Intramural Department, and would be carried out in an orderly and reasonable fashion. Further recommendations concerning this event cannot be made at this time.

The fraternity's civic responsibilities to the university community are covered in item 9 of the Decalog, and the recommendations for "actions" and "implementations" regarding this item and associated with "blocking conditions" A, B, C, and D and "causes" A₁, B₁, B₂, B₃, C₁, D₁, D₂, and D₃; are shown in columnar form below

Actions	Implementations
A ₁₁ Although a profession or particular interest was the reason for the founding of a fraternity, the leadership and advisoral elements should be well aware of the necessity of a broad well-balanced and group participative type of program.	A ₁₁₁ Through participation in fraternity leadership and advisoral training programs, or discussions with student activities personnel relative to their experience with such action, the leaders and advisers of such groups will become better informed.
B ₁₁ The adviser must remain alert to the aims and objectives of the current leadership of the group.	B ₁₁₁ The newly elected leader and adviser should frequently meet to discuss the implications of the program to be effected, or currently in progress, and how it meets longerange goals and objectives.
B ₂₁ Participation in fraternity leadership training programs should inform and enlighten leaders concerning the responsibilities associated with leadership positions, and how good leaders meet said responsibilities.	B ₂₁₁ Adviser and fraternity should insist that its leaders participate in the training programs previously discussed under implementations associated with earlier items of the Decalog.

Actions	Implementations
B31 Fraternity leaders who are insecure about group's position and their own must be shown the advantages gained by greater participation in university-wide events.	B311 This may be implemented by employing A111 through B211 of this item.
C11 Fraternity members must be made to realize that as there is strength in having friends in one sphere of activity, that this strength is enhanced by having friends in many other spheres as well.	C111 The adviser and leaders of the fraternity can greatly affect membership thought by devising a well-balanced program with a goodly amount of participation in university-wide events, thus teaching civic responsibilities.
D11 Advisers must take an active part in fraternity administration, and strengthen and educate group in its responsibilities associated with its citizenship in the university community.	D111 Advisers in such organizations are usually "power figures" in their areas and wield a wide influence on the fraternity membership. By conducting a peer-relationship, mutual problem-solving type of advisorship, constantly reminding of its membership in the greater university community, much can be done to make the group aware of its responsibilities to good citizenship in the community.
D21 Advisers should frequently be contacted by the student activities area, and should reciprocate in such matters, so that they (advisers) may remain informed as to how their fraternities programs and endeavors compare with those of other groups. Upon receiving such reports, advisers should effect meetings with the fraternity leadership, and discuss the garnered information.	D211 The Men's Activities Office, working closely with the Counselor of Social Activities Office and the I.F.C., should compile short monthly reports concerning the member fraternities activities, attendances, and general contributions, for the groups' advisers. The advisers should effect meetings with their leaders, and <u>through group actions</u> demonstrate that the effort expended was worthwhile.
D31 If the adviser is actively associated with the group, he is certain of being a part of all fraternity decisions, and his opinions concerning the fraternity program will be known	

Considering item 10 of the Decalog, the study committee had no further recommendations to make other than those remarks associated with the item under the section dealing with what the study found.

In connection with the recommendations concerning the findings of the questionnaire items, the study committee felt it would be superfluous to note the obvious, and thus the reader is referred to the discussion of the questionnaire findings on pages 28-31, for the recommendations associated with this area of the study.

In conclusion, it should be noted that this self-evaluation study which took approximately three and one half months to complete, might in some respects be considered obsolete. Fraternalism is a dynamic area, and a continuous on-going but ever-changing process. In the successful operation of such an area, it is essential that experimentation be carried out frequently, as a result, if true progress is to be made, approximate evaluation must ensue. Therefore, it is the hope of the study committee that this report will not be looked upon as a final step, and its recommendations a panacea of all problems, but rather it is hoped that this effort will be looked upon as a first step of many to be taken toward further improvement, enlightenment, and general progress in good fraternalism.

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