AN EXPLORATORY AND DESCRIPTIVE STUDY IN THE APPLICATION OF A MARKETING PERSPECTIVE TO THE COLLEGE CHOICE PROCESS: AN INSTITUTIONAL APPROACH

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ABSTRACT

AN EXPLORATORY AND DESCRIPTIVE STUDY IN THE APPLICATION OF A MARKETING PERSPECTIVE TO THE COLLEGE CHOICE PROCESS: AN INSTITUTIONAL APPROACH

By

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This study examined certain aspects of buying behavior within the non-profit setting of higher education. The college choice problem was viewed as a purchase problem not significantly different from the type faced by consumers when purchasing economic goods.

The recent trend toward more widespread application of marketing technology by colleges, particularly private colleges, suggested the need to examine the college selection process using a marketing perspective. The study had as its purposes; (1) to provide additional knowledge and understanding of prospective college students' information search and informational source usage during the choice process, (2) to identify the importance of selected evaluative criteria used in the choice process, and (3) to identify segmental differences within a set of prospective students who had indicated a prior interest in a specific college.

A longitudinal research design was used which allowed time-dependent comparisons to be made on individual and group bases. Three time-reference points were included in the analysis: (1) pre-application, (2) post-application, and (3) post-enrollment. Within each of these periods, comparisons were made between identified segments using chi-square analysis, to determine significant differences. Comparisons were also made over time, using correlation analysis, to determine consistency in the importance attached to selected evaluative criteria by the prospective college students.

The following conclusions were drawn with reference to the study's five major hypotheses.

Hypothesis I: A buying intention statement in terms of the prospective student's choice rating of a particular college, i.e., first, second, third choice, etc., will serve to predict application and enrollment more frequently than other data available to the college.

A buying intention statement indicating that a college was the prospective student's first choice was found to be the best single predictor of student applications. No difference was found in the predictive quality of a second, third, fourth, etc., choice designation.

Of those prospective students who made application, the purchase intention expressed as a first choice preference did not predict enrollment significantly better than any other choice designation.

Hypothesis II: Identifiable market segments of prospective students interested in a particular college, such as, the ACT[1] segment and the SAT[2] segment will differ in their characteristics and behavior.

Significant differences were found in the characteristics and behavior of the ACT defined and the SAT defined market segments. Other behavior determined classifications also produced significant differences.

These identifiable differences between market segments suggest an opportunity for colleges to develop specialized marketing strategies to more effectively attract students.

Hypothesis III: Purchase patterns as reported for the purchase of economic goods with respect to the level of information and degree of decisiveness will carry over to the college choice process.

Some support was found for the carry-over of economic goods purchasing patterns to the college selection process. Those prospective students who considered themselves to be well informed when purchasing economic goods, also appeared to be better informed about colleges.

Hypothesis IV: Prospective college students will change their assessment of the relative importance of selected evaluative criteria over time.

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[1]ACT refers to the test of the American College Testing Program used for college admission.

[2]SAT refers to the Scholastic Aptitude Test of the College Entrance Examination Board and used for college admission.

The relative importance of the selected evaluative criteria for individual prospective students tended to change over the time period studied. This apparent lack of a firmly structured set of evaluative criteria is consistent with buying behavior theory, where buyers lack previous purchase experience for the item involved.

Hypothesis V: Behavior determined segments of prospective college students will differ in the relative importance of selected evaluative criteria at different points in time.

Certain behavior determined segments differed in the importance attached to the evaluative criteria at specific time-reference points and across time. One such example was with the private college enrollees. They were found to be less homogeneous in their evaluative criteria structure than were the public college enrollees.

The scope of this study was limited to an analysis involving prospective students identified with one specific college. However, the existence of differences between market segments, as revealed by the methodology used in the study, indicates a need for all colleges to identify the characteristics and buying behavior of their markets, prior to planning their marketing strategy. The findings and conclusions of this exploratory study also suggest the need for additional research, both of a theoretical and an empirical type.

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By

Leonard Eugene Sheffield

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DEDICATION

To my wife Barbara and son Jeffrey

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I wish to acknowledge and express my appreciation to all those who have contributed to my completion of this research and the doctoral program at Michigan State University.

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CHAPTER I

INTRODUCTION

Problem Background

Student college choice (buying) can be viewed as a decision process with:

1. educational cost outlay implications,
2. institutional choice implications,
3. vocational and other future pay out implications accruing from the total product acquisition,
4. acquisition process cost and benefits associated with the educational product, and
5. opportunity cost implications.

The potential college student is concerned with making choice decisions from a set of available and known alternatives. This set of alternatives, however, is expandable; determination of the breadth of this choice range would appear to be a function of prior information, either solicited or unsolicited. Conditions of social, cultural, family, and peer group exposure; academic ability; and economic means; plus other factors, interact to provide the basis of motivation and knowledge associated with the college choice decision.

This suggests the need to view college choice as a purchase choice of personal and social significance, and one which results in a major cost; including time, money, effort, and foregone opportunities. Potential college student choice behavior can be viewed in a consumer buying behavior context. This view is not the common view of educators or that of the student (and others such as parents) when the college choice is made.

Since World War II and through the 1960s, the increased demand for a college education served to push for expanded expenditures and facilities in the educational sector, both private and public. The existence of a sellers market focused the attention of colleges on meeting the expanding demand, with less concern for efficiency and virtually no concern for generating selective demand for a particular institution. Selectivity was a matter of establishing entrance requirements to screen from a large number of potential customers (applicants) those who best fit the "image" or "mold" of the institution. Getting into a college was a major concern of many potential students during the early and mid 1960s.

The strategy of deliberate restriction of supply was not the case. Such a strategy would have been inconsistent with the philosophy of educational opportunity for all those capable of utilizing it, and the recognition of social benefit accruing from a better educated populace.

This public attitude, plus the growth pressure from within many educational institutions and educational systems, particularly public systems, resulted in the expansion of educational facilities. Capacity expansion in both the public and private education sectors, by the late 1960s, had brought supply more in line with demand, and for many private colleges space availability in both classrooms and dorms exceeded the demand. By 1970 the evidence of a buyers market, where supply in at least some sectors of higher education exceeded demand, was becoming all too evident. This buyers market trend has continued to the present, with not only private colleges and universities being affected, but also the public colleges and universities.

Marketing Perspective of Educational Choice

Which prospective students go where to college and for what reasons, in the aggregate, has been studied extensively by those in education. The student as the subject of study is nothing new.

This research study is designed to apply a new perspective to the conceptualization of student college choice behavior and choice processes. The choice of going or not going to college, and the choice of which college to attend appear similar to the consumer choice problem of selecting an economic good or service. The latter problem situation is the focal point of traditional marketing. The

rationale of both marketing and production effort is consumer satisfaction through consumption. This is basically what is meant by the phrase "consumer orientation," a basic tenent of the marketing concept.

Is not the purchaser of an educational product with the associated experiences also a consumer, in the sense that monetary outlay is made for something in return--quid pro quo? The difficulty of defining the educational product (or set of services) is a problem, but the same is true of products in the business sector when a broad view is taken of what a consumer gets for a monetary outlay. Unless we restrict the product definition to tangible or identifible elements generating certain levels of satisfaction, "product" remains a subjectively defined construct.

Related Consumer Behavior Theory

The Howard and Sheth model of buying behavior postulates that the buying process begins with the brand choice decision, given that the buyer is motivated to buy a product. The elements of his decision are (1) a set of motives, (2) alternative brands, and (3) choice criteria by which the motives are matched with alternatives.[1] The alternative courses of action are the evaluations made of the various brands and their potential to satisfy the buyer's motives.[2]

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[1]John A. Howard and Jagdish N. Sheth, The Theory of Buyer Behavior (New York: John Wiley and Sons, Inc., 1969), p. 25.

[2]Ibid., p. 26.

The brands that become alternatives to the buyer's choice decision are called the evoked set, and are generally few in number.[3] Out of the total number of brands on the market the buyer may be aware of a small portion, and out of this small portion only a few are generally contained in his evoked set.

The Engel, Kollat, and Blackwell model holds that the decision process begins with problem recognition and proceeds through four other stages: (1) internal search and alternative evaluation, (2) external search and alternative evaluation, (3) purchasing processes, and (4) outcomes.[4]

The internal search is said to occur instantaneously and largely unconsciously. If the buyer has an adequate level of information and experience, well structured evaluative criteria, and established attitudes toward the products, an internal search is adequate for a buying decision. This search pattern is associated with habitual decision-process behavior.[5]

When the internal search proves inadequate for the evaluation of alternatives, an external search is required.

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[3] Ibid., p. 26.

[4] James F. Engel, David T. Kollat, and Roger D. Blackwell, Consumer Behavior (2nd ed.; New York: Holt, Rinehart, and Winston, Inc., 1973), p. 439.

[5] Ibid., p. 59.

This may involve a search for additional information about the alternatives contained in the domain of feasible alternatives, but there is no need to procure information about the domain of feasible alternatives. This is referred to as limited decision-process behavior.[6]

Finally, the external search behavior which seeks information about the domain of feasible alternatives in order to define this domain is associated with extended problem solving.[7] Both information about the domain of alternatives and information about the alternatives within the domain are sought and require a greater search effort.

Howard and Sheth describe three decision making stages associated with the psychology of simplification in repetitive decision making. This is where the buyer attempts to reduce the complexity of a buying situation with the help of information and experience.

The decision making stages are:[8]

(1) Extensive Problem Solving which refers to the early stages of repetitive decision making, in which the buyer has not yet developed well-defined and structured choice criteria. The buyer has no strong predispositions toward any of the brands he is considering as alternatives.

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[6] Ibid., p. 59.

[7] Ibid., p. 59.

[8] Howard and Sheth, op. cit., p. 27.

(2) Limited Problem Solving is the next stage, in which the choice criteria are well-defined and structured, but the buyer is undecided about which of a set of brands is best for him. The buyer has moderately high predispositions toward a number of brands, but does not have very strong preference for any one brand.

(3) Routinized Response Behavior is the last stage, in which the buyer not only has well-defined and structured choice criteria, but also strong predisposition toward one brand. At this stage, although the buyer may consider several brands as possible alternatives, he has, in fact, only one or two brands in mind as the most probable choice alternatives.

The farther the buyer is along in simplifying his environment, the less is his tendency toward active search behavior.[9] Purchasing an education can be viewed as an initial purchase decision when the student first enrolls, and a series of repetitive purchases each time he re-enrolls. The fact that most students do not switch colleges, but rather stay until they graduate suggests a routinized response behavior pattern. The focus of this study is, however, on the initial purchase. This appears to involve a more extensive problem solving type situation and requires an external search process. Individual differences will

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[9] Ibid., p. 27.

exist based upon the prospective student's characteristics and prior environmental exposure.

General Research Purposes

Consistent with current theory of buying behavior and a market segmentation perspective, five general research purposes are set out for this study.

1. To gain knowledge and understanding about the decision process, structure, and evaluation-decision criteria used by prospective college students in choosing a specific college.

2. To determine the information needs, information sources, and information processing methods used as well as the level of information and its degree of specificity at various stages in the prospective student's college choice (buying) process.

3. To explore the application of market segmentation analysis to identify student segments which are more likely to respond favorably to a college's market offering.

4. To contribute to the development of more efficient and effective methods of allocating student recruitment effort through a better understanding of the prospective student's buying behavior processes.

5. To contribute to the more effective and efficient planning of all educational marketing-mix elements based upon a better understanding of the prospective student's buying behavior and buying process needs.

To accomplish these research purposes, the study encompassed the following aspects of student buying behavior across time.

1. Identify patterns of similarity or difference between prospective students who apply and those who do not apply to a specific college after they have indicated some initial degree of interest.

2. Identify patterns of similarity or difference between prospective students who are accepted by the college and enroll, and those who are accepted but do not enroll.

3. Identify patterns of similarity or difference between prospective students who select a private college rather than a public college.

4. Identify patterns of similarity or difference between prospective students across additional behavioral characteristics.

Research Approach Statement

A longitudinal design was used to explore and describe the buying behavior process of prospective college students, and to identify the associated independent variables which serve to differentiate market segments and affect the prospect's response to a college's marketing effort. Major emphasis was placed upon the examination of search behavior and the evaluative criteria related to college buying intentions and final college choice behavior.

All of the respondents who were a part of the study had shown an initial interest in the cooperating college. This micro level institutional approach was considered appropriate in view of the unique set of characteristics associated with a specific college. Such uniqueness provides the basis for differentiation of the total educational product which the student experiences as a result of his or her college choice.

Potential Contribution of the Research

The study is expected to contribute to the recognition that marketing, as a discipline, is applicable to other than commercial ventures. The approach taken in this study is to recognize the survival and growth objectives of colleges as motivational forces leading to competition in the pursuit of differential advantage. Marketing as a discipline is vitally concerned with any organization striving for survival and growth.

Competition in the educational market between and within the public college sector and the private college sector, the environment of changing attitudes toward the value of a college education, the recent trend of declining birth rates, and the projected decline in the number of college age youth, all suggest that growth and survival may be difficult goals for colleges to attain in the future. This is a very real problem in higher education today, and

this research focuses on how a marketing approach can be applied by colleges to better solve this problem. It is hoped that this research will contribute to the development of a methodology which can be utilized by colleges in identifying and analyzing their various market segments, thus providing a better base for developing improved marketing strategies.

Specific contributions of this research to the field of marketing relate to buying behavior processes and the concept of market segmentation.

1. The study provides empirical evidence illustrating the more general application of buying behavior models to choice situations outside the traditional context of consumer goods purchasing.

2. The study provides empirical evidence of the role played by "weights" or "importance" measures associated with evaluative dimensions (criteria) in predicting "class" or "type" of product choice.

3. The study provides empirical evidence of the stability in the relative "weights" or "importance" associated with a common set of evaluative dimensions for an individual buyer during the purchase process. The extent to which the buyer maintains consistency between his buying intentions, actual purchase behavior, and the relative "importance" of the evaluative dimensions can be examined with reference to consistency theory.

4. The study provides empirical evidence concerning the transfer of previously developed consumer goods purchase patterns (as self-reported by respondents) to a new choice situation. Such a carryover would support learning as an important construct associated with generalized choice process behavior.

In summary, the contribution made by this inter-disciplinary research is to examine empirically aspects of marketing theory, as they apply in a non-profit setting of higher education.

CHAPTER II

LITERATURE REVIEW

Higher Education Market Demand

The growth in American higher education during the decade of the 1960s can be characterized as explosive. Total enrollment in all institutions of higher education reporting to the U. S. Office of Education rose from 3.8 million in 1960 to 8.5 million in 1970. An additional 1.5 million students not included in the Office of Education statistics were enrolled in vocationally oriented schools of a largely proprietary nature.[1]

A major factor in the extraordinary growth in enrollments during the 1960s was the relatively high birth rate of World War II and the early postwar period. All told, the rise in college-age population accounted for about 45 percent of the increase in undergraduate degree-credit enrollment from 1960 to 1970. The remaining increase was attributable to a rise in the enrollment rate, i.e., the ratio of undergraduate degree-credit enrollment to the population aged 18-21--from 33.8 percent in 1960 to an estimated 47.5

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[1]A Report and Recommendations by the Carnegie Commission on Higher Education, New Students and New Places (New York: McGraw-Hill Book Company, 1971), p. 11.

percent in 1970.[2] Increases in the enrollment rate in the other age categories are also reflected in the undergraduate enrollment totals.

The U. S. bureau of the Census data show that between 1940 and 1970, the proportion of persons ages 18 to 21 enrolled in college rose from 11 to 34 percent, and the Carnegie Commission staff projects an increase to about 54 percent by the year 2000.[3]

An additional factor revealed in the analysis of undergraduate enrollment from 1940 to 1970 is that the age range of undergraduates has widened and this is projected to continue. By the year 2000, 54 percent of the population aged 18 to 21 will be enrolled in degree-credit programs; while the undergraduate degree-credit enrollment as a percentage of those 18 to 21 is projected for the year 2000 at 73 percent.[4]

Market Share and Institutional Change

The founding of Harvard College in 1636 marked the beginning of the growth and development of American colleges and universities. The early years of educational development were dominated by private colleges, most of which were church related. In 1900 over 60 percent of all college

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[2] Ibid., p. 11.

[3] Ibid., pp. 13-14.

[4] Ibid., pp. 14-15.

students in the United States attended private colleges and universities. By 1960 the figure had fallen to 40 percent; and in 1970, only 25 percent of all college students were enrolled in private institutions.[5] By 1972 the figure declined further to about 20 percent.[6] The expansion in higher education was clearly in the public sector, and competition for students between the private and public sectors was developing. The fear that some private colleges would have to close their doors was realized during the early 1970s.

The trend toward public colleges is usually attributed to the large differences in tuition and other fees between the private and public institutions. Also, the growing importance of junior and community colleges, and other two-year institutions has affected private college enrollment.

> Between 1965 and 1970 the enrollment at public two-year schools doubled, accounting for almost 22 percent of total enrollment by 1970. In the same period, enrollments at public and private four-year institutions grew by 42 and 8 percent respectively.[7]

The number of two-year institutions increased from 622 in 1963 to 1,061 in 1970. Two-year institutions accounted

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[5] Ibid., p. 17.

[6] Fred M. Hechinger, "Is Common Action Possible?" Change, September 1972, p. 41.

[7] Richard R. Spies, The Future of Private Colleges (Princeton: Princeton University, 1973), p. 5.

for 38 percent of the 2,827 institutions reporting to the Office of Education in 1970 and for 28 percent of all students in 1970.[8]

The Carnegie Commission on Higher Education report, New Students and New Places looks to the future and projects the following trend.

> The next three decades are likely to be a period of substantial innovation and change in the organization and structure of higher education comparable in significance to two earlier periods of change. The first was the period following the Civil War when many of the leading colleges were transformed into universities. The second was the period since the end of World War II, which was characterized not only by rapid enrollment increases and a steady increase in the share of the public institutions in total enrollment, but also by the emergence of planned state systems of public higher education and of the public two-year community college as the most rapidly growing type of institution.
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> Along with the continuation of recent trends, we anticipate a new type of development as perhaps the predominant characteristic of the last three decades of the present century--a movement away from participation in formal institutional higher education in the years immediately following high school toward a more free-flowing pattern of participation spread over a broader span of years, perhaps well into middle age and beyond.[9]

Private and Public Sector Development

During the expansionist period of the 1950s and 1960s the availability of students allowed the private and the public colleges to drop their rivalry. The 1970s, so

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[8] A Report and Recommendations by The Carnegie Commission on Higher Education, New Students and New Places, op. cit., pp. 18-21.

[9] Ibid., p. 39.

far, has seen a rebirth of competiveness between the public and private sectors of higher education and is attributable to a number of developments:

1. The total higher education enterprise has, at least for the short run, overestimated the extent and the duration of the enrollment boom.
2. The recession and the aftermath of the college rebellion have reduced the amount of money available for the support of higher education.
3. The reduction of Federal research funds left many universities with costly facilities and over-expanded staff.
4. The poor and disadvantaged represent the only major population sector that could account for further enrollment growth. These students require financial support instead of bringing money to the campuses. Neither the public or private sector stands to benefit immediately from this flux.[10]

The educational pie has shrunk, and the public and private sectors are once again fighting for the slices of the pie. Before the 1972-73 academic year, there were about half a million reported classroom vacancies.[11]

Early Development

> Higher education in the United States started largely as a private enterprise, and a deliberately elitist one. Despite early dreams by Madison and Washington of a truly national university, it was Harvard that established the prototype. Although there were exceptions to the rule--the University of Virginia and the City College of New York among them--the public sector came into its own only after the Land-Grant Act of 1861.[12]

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[10] Hechinger, op. cit., p. 38.

[11] Ibid., p. 39.

[12] Ibid., p. 39.

> Protagonists of public colleges wanted colleges for the people, and those colleges were expected to serve practical ends; study of agriculture and of the mechanic arts should be honored equally with study of the classics, or even take precedence over these traditionally elitist studies.[13]

The demands for the establishment of the land-grant colleges (Morrill Act) were political demands voiced by public leaders on behalf of their constituents, yet the private demands for places in colleges were not that great.

> One of the main problems of the new land-grant colleges (as has long been true of private colleges) was to find students, and often that could be done only by first building up a more adequate system of secondary schools in the state.[14]

Attracting students to the institutions of higher education is nothing new. Both the private and the public institutions have faced this problem before. The strong demand of the 1960s was the exception, not the historic norm. Current efforts to attract prospective college students reflect a weak demand situation, but not a completely new situation.

Educational Competition Favored

Competition between the public and private sectors of higher education produces favorable results by encouraging more students to continue their education and by offering

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[13] C. Arnold Anderson, Mary Jean Bowman, and Vincent Tinto, Where Colleges Are and Who Attends (New York: McGraw-Hill Book Company, 1973), p. 3.

[14] Ibid., p. 3.

prospective students a choice among alternate educational opportunities (product, brand, etc.).

> It is desirable to maintain a strong private higher education sector simply because monopolies are intrinsically undesirable. Public systems, whether municipal or statewide, are subject to across-the-board rulings and policy changes from which there is no escape. Even the best of systems have a homogenizing effect. The pressures for standardization on the public universities, moreover, would become much harder to resist if the counterweight of private competition were eliminated. With some slight poetic license, it may even be argued that private higher education before the 1860's enjoyed something of a monopoly and that it would probably have failed to meet the changing demands of a changing nation without the growing competition from the emerging state univeristies.[15]

Both the public and the private sectors of higher education are public in their mission. However, the private institutions do have the opportunity to be far more selective and purposeful about their academic mission, disciplines, and services offered. The product offering can be tailored to meet the target market group needs and satisfy the goals of the institution, but both must be well defined prior to developing a strategy.

Nature and Structure of Competition

While it is convenient to refer to private education as separate and distinct from public education, the distinction is not that clear. There is a considerable amount of variation within the private institutional grouping. Private institutions range from small, church related schools that

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[15]Hechinger, op. cit., p. 42.

depend almost entirely on tuition income, to universities such as Columbia with more than half its budget derived from public funds, and engaging in a variety of public service activities.[16] The latter are quasi-public institutions.

Alexander Astin and Calvin B. T. Lee make the point that all private colleges are not alike in their study, The Invisible College. Using an index of institutional visibility composed of (1) enrollment size and (2) undergraduate selectivity, they distinguished two groups of private colleges, "invisible" colleges, and the "elite" colleges.[17] The basis of measuring selectivity was the SAT scores, both verbal and mathematics; and the ACT composite score. Colleges were then classified by selectivity from 1, least selective; to 8, most selective. The colleges were classified also by size from 1 to 8. The most visible colleges were those with the highest degree of selectivity and largest enrollments.[18]

> Well over half of those institutions (524 of 918) have selectivity scores below level 4 (combined SAT Verbal plus Mathematical scores of less than 1,000). If one eliminates from this group of 524 the 30 with enrollments of 2,500 or more, the remaining 494

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[16]"The Crisis of Money and Identity," Change, September 1972, p. 36.

[17]Alexander W. Astin and Calvin B. T. Lee, The Invisible College (New York: McGraw-Hill Book Company, 1972), pp. 3-4.

[18]Ibid., p. 4.

> invisible colleges still represent more than half of all the private four-year colleges in the country, one-third of all institutions offering at least a bachelor's degree, and about 21.5 percent of all institutions of higher learning in this country. They also enroll an estimated 500,000 students, or 15 percent of all students attending four-year institutions.[19]
>
> At the other end of the visibility continuum, we find that there are only 44 colleges in the top two levels of selectivity (combined SAT Verbal and Mathematical scores above 1235). Although these 44 "elite" private colleges account for nearly two-thirds of all higher educational institutions on the two highest selectivity levels . . . , they represent less than 5 percent of the four-year private colleges. . . .[20]

The major finding of this study was, with respect to their student inputs and their environment, invisible colleges are much more similar to the public colleges than to elite colleges.[21] The invisible college and the elite college--except for being privately controlled and rather small--have very little in common. The two types of private colleges serve radically different student clienteles, and their social and intellectual environments are highly dissimilar. By the same token, the public college, except for its larger size, closely resembles the invisible college both in its environmental characteristics and in the students that it attempts to serve.[22]

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[19] Ibid., p. 10.

[20] Ibid., p. 10.

[21] Ibid., p. 79.

[22] Ibid., p. 79.

While the invisible and state four-year colleges appear to be appealing to the same student market segment, there is a wide diversity in the tuition and fees of the two institutional types, and the relation of these fees to the cost of educating a student. The tuition at private colleges has been rising at about 7.5 percent per year; and at best it pays for about 75 percent, but usually closer to 50 percent of the costs of educating a student.[23]

Among the fastest rising costs for independent schools has been recruitment costs, now estimated at as much as $500 per student on the average, compared to $250 in 1967.[24] Included in these higher costs are higher recruiter salaries and expenses, and the follow-up activity--for example phoning, brochures, and entertaining of visitors; the cost of fund raising has climbed similarly.[25]

Is the difference between the public and private college educational experience worth the higher charges paid by the buyer of the private education? If the product is not different, then the fee difference is hard to justify. Paul C. Reinert S. J., comments that the lack of funds at private colleges leads to an economic homogenization process

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[23]Paul C. Reinert S. J., To Turn The Tide (New York: Prentice-Hall, 1972), p. 20.

[24]Ibid., p. 20.

[25]Ibid., p. 20.

that dissolves the uniqueness and reduces the diversity potential of the private college.[26]

If the private sector of higher education is to serve as an alternative to the public sector, in a pluralistic system, it must first survive. The loss of product uniqueness endangers such a survival and offers a weak platform on which to build a marketing strategy. Yet, many private colleges are engaging in a more extensive use of marketing technology in an attempt to survive.

Change or die is the command of competition, even in education.

> The invisible colleges are in a constant state of flux, and their turmoil is not simply a matter of minor revision in curriculum or internal governance but of fundamental change, change that relates to their whole raison d'etre. Unlike the elite colleges, their ability to survive has always been in question. It is difficult to live from day to day in such doubt. The changes that they have undergone reflect their desire to survive and indeed their ability to change in order to survive.[27]

The primary concern of all the private colleges both sectarian and independent was, and still is, survival. In view of the competition, and the trend in the United States toward the lower (or even free) tuition in state-supported higher education, survival is becoming more difficult.

Can the use of marketing technology and the application of the marketing philosophy of consumer orientation

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[26] Ibid., p. 27.

[27] Astin and Lee, op. cit., p. 23.

and long term profit (income to cost relationship required for survival) be applied to this area? The present study is designed to examine one basic aspect of this question, i.e., to develop a better understanding of a college's perspective on student buying behavior patterns. This fundamental understanding is considered necessary to the development of sound marketing plans by a college. To know the market and its various segments, and the buying behavior pattern of the prospective customer set would allow more effective and efficient planning for differential advantage by the college. The concept of differential advantage and its implication for survival in a competitive environment, as expressed by Wroe Alderson (1957), seems applicable to higher education today.

Philosophies About Who Should Go To College

The extent and nature of the prospective student market is partially defined by the philosophy of who should go to college. Two elements, (1) the opportunity to go to college, and (2) the willingness or desire to go to college, are involved in the definition of the college student market. The first element is affected by the individual's ability, the attitude of society, and the amount of political influence exerted to make educational opportunity available to selected publics. The second element, willingness or desire,

is dependent upon the individual as influenced by many factors, both internal and external.

K. Patricia Cross identifies three major philosophies related to who should go to college.

1. The Aristocratic philosophy--where students with money and family social status, with or without adequate ability were able to go to college while others were not. These were high-tuition private colleges. The educational system was a closed system.
2. The Meritocracy philosophy--criteria for college admission should be based upon scholastic ability and the willingness to study hard--i.e. upon academic merit. This philosophy became evident with the land grant college movement and remains evident today.
   The talent searches of the 1950s were active campaigns to bring into colleges those who did not meet aristocratic criteria but who were the epitome of meritocratic ideals, i.e. high aptitude test scores. The barriers of the aristocratic period gave way to new barriers of the meritocracy.
3. The Egalitarian philosophy--those who want to go to college should be allowed to go, not just those who desire and have the ability as traditionally measured.[28]

"Young people who have not considered college in the past but who are newly entering college in the 1970s are distinguished more by low test scores than by any other single measure available, including race, sex, and socio-economic status."[29] These "New Students" are part of a new growth market segment, but with a different set of academic

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[28]K. Patricia Cross, New Students and New Needs in Higher Education (Berkeley: Center for Research and Development in Higher Education, University of California, 1972), pp. 1-5.

[29]Ibid., p. 25.

needs. Traditional educational programs and teaching methods are not suited to the needs of these students. This market segment represents a currently unfulfilled need which may offer market potential to some colleges if they can develop and implement the correct programs. The cost implications of such a venture would have to be considered against the revenue opportunity for a private college. A market segment cost/revenue analysis would appear to be an appropriate approach which a college could use in assessing such an opportunity.

Educational market demand currently differs for men and women when the ability factor is used as a dimension of market segmentation.

> The largest increases in college attendance for women are now coming from the ranks of the above-average students from all socioeconomic levels as women continue toward the peak of the meritocratic era in college attendance. For men, the meritocratic phase has passed its peak, and in the decade of the 1970s the major increases in college attendance will come from the lower-ability men as the egalitarian phase is entered.[30]
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> . . . for men, at least, low academic ability is keeping more students from continuing their education than is the barrier of lack of financial resources.[31]

College Admission Trends

A study was done on admission trends[32] for three groups of colleges; (1) Private I, which includes the most

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[30] Ibid., p. 17.

[31] Ibid., p. 18.

[32] Spies, op. cit., pp. 5-17.

prestigious and selective private colleges and universities, (2) Private II, which includes roughly the same student charges as group one but are generally less prestigious academically, and (3) a group of the best state universities. The application data used were for 1967 through 1971 academic years.

"In general, the evidence seems to support the hypothesis that there has been no significant trend toward applying to the top state universities rather than the select private colleges and universities."[33]

This conclusion was drawn from the application pattern of men. For women a somewhat different pattern exists. "The most obvious difference is the relative absence of growth at the most prestigious private schools, where the number of applications has barely changed over the last five years."[34] Many of the women's colleges have felt the pressure of the increasing number of women wanting to go to coeducational rather than women's schools. Decisions of schools like Yale and Princeton to become coeducational has altered the structure of competition.

Another difference in the application pattern for women is the rise in 1971 of in-state applications to state universities. In part, this may reflect the greater social

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[33] Ibid., p. 11.

[34] Ibid., p. 11.

activism of women and their desire to share more equally the benefits of our society; or it may be that the choice of a college by women is more affected by purely economic factors.[35] If the latter is true, they are more likely to react to the rising cost differentials between private schools and their own state universities than are the men.

The yield on admission pattern (the percentage of those admitted to a particular school who actually enroll) showed a general downward trend for 1967 through 1971 for all types schools.[36] The downward trend, however, is particularly noticeable for private colleges.

> There are two possible interpretations. First, private schools in general may be losing students to the state universities and other public institutions. The implications of such a trend, if it exists, for the future of private higher education are fairly obvious. Second, private schools may be competing more and more among themselves for the same group of students. Although such competition is much less serious in terms of what it implies about the future of private higher education, it clearly poses a threat to many individual institutions. Unless the pool of qualified applicants grows more rapidly than it has in the last five years, an attempt by any one of these select private colleges to improve the quality of its student body or to expand in size must be accomplished largely at the expense of the other schools in this category.[37]
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> . . . it appears that the problem faced by select private colleges and universities in attracting qualified students have been somewhat exaggerated. Over the last five years, the number of applications

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[35] Ibid., p. 11.

[36] Ibid., p. 14.

[37] Ibid., p. 15.

> followed the same general pattern at private and public institutions. The select private colleges have experienced a drop in yield, but the proportion of students declining admission who go to public schools has remained quite stable. Although individual private institutions are facing increased competition, it does not appear that the private colleges as a group have declined in popularity. The most serious problem seems to be a virtual halt in growth of the pool of qualified applicants.[38]

The contrast between the selective private colleges (elite group) and the visible private colleges, as described by Astin, present different competitive environments. The most evident difference is associated with the pool of prospective students. Academic ability appears as the major criterion defining the two markets. For either the elite or the invisible college the quantity of prospective students from which to draw is limited. However, the elite college does have the option of drawing (accepting) from the lower ability group. The invisible college has far less opportunity to tap the high ability group, and it is already drawing from the lower ability group. The invisible college may look to the even less academically qualified (the "new students" as described by Cross) who have previously not considered college.

Any specific college is unique in what it offers potential students. To define the market for a particular college and to develop a strategy to attract its clientele, the college must first understand the buying behavior and

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[38] Ibid., p. 17.

characteristics of the prospective students. Academic ability is a convenient criterion to use in defining student market segments, but many other factors are involved in the individual choice of a college. Factors which are not academically related may be of even greater importance in making the actual buying decision. These other variables then are important in defining segments of potential students.

College Choice Factors

We may postulate three dimensions of "accessibility" to a particular college with which a prospective student will be concerned.

The first is geographical accessibility. This dimension is the geographical distance between the student's residence and the college he attends. Considerable research has been done on this dimension, including the migration pattern studies from state-to-state, and the studies considering the impact of local colleges upon the rate of college attendance among high school graduates. The recent growth in junior colleges and community colleges has reflected a generally held attitude that convenience of location will stimulate college attendance as well as reduce the cost of attendance. The positive influence of location on the rate of college attendance among high school graduates has recently been refuted by the research of Anderson, Bowman and Tinto (1973).

The second dimension of accessibility, the ability of the prospective student, affects the college attendance pattern two ways: (1) some students lack the necessary ability to gain admittance at particular schools and are rejected when they apply and (2) some qualified students lack the motivation to attend particular colleges which are perceived or known to have high level academic requirements.

The third dimension is that of price or cost to the student associated with attending particular schools. Here the price difference of public and private colleges; and the price to in-state versus out-of-state students, when attending state schools, is important.

These three dimensions of accessibility are only part of the total set of factors or variables which may affect a particular college choice. Further, these three dimensions are not solely independent, but may in combination serve to define and limit the range of alternative choices available to the prospective student.

The preference for a particular major or field of study is another extremely important variable which must be considered in the choice process. This is not considered here as a dimension of accessibility. The major or field of study variable, however, may affect or be affected by the dimensions of accessibility. It seems quite likely that a state of conflict could result from the two variable categories. It may be impossible, for instance, for a

particular student to attend a local college and get the major he wants. This conflict could be resolved only through a choice involving some compromise.

In this section the current literature associated with these accessibility variables, and other variables associated with the college decision will be reviewed.

Geographic Dimension of Accessibility

Geographic accessibility has been of interest to educational researchers as they study the effect of location upon the rate of college attendance in the aggregate; and across ability categories, social status groups, ethnic or cultural groups, and states or regions.

We might expect that geographical accessibility to a college will affect an individual's college decision in one or more of three main ways: (1) through relationships between immediate geographic access and cost of attending, (2) through effects on preference attitudes, and (3) through diffusion of information or intensity of communication.

One recent study, Where Colleges Are and Who Attends,[39] addresses the problem of examining the effects of college accessibility (geographical) upon attendance. The accessibility approach used looks out to the range of college options available at various distances from the community of residence for a given set of high school graduates. (An alternative

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[39]Anderson, Bowman, and Tinto, op. cit., pp. 1-293.

approach would be the market-area or recruitment approach which identifies the catchment area from which new enrollees in a given college come.)

The authors utilized three models in the study.[40]

Model 1, was a simplified economic model of the student decision maker as an investor in education. This model included the costs of attending each of a number of colleges (local or nonlocal), the ability to pay, any nonmonetary constraints that limit access to some colleges, and the future benefits from choosing one college over another. This model, however, did not consider tastes or adequacy of information.

Models 2 and 3, introduced tastes or preferences, and the diffusion of information. In model 2, the variable of tastes or preferences was added to allow a comparison of tastes against the characteristics of specific colleges. The taste variable was treated as an exogenous variable.

In model 3, allowance was made for limitations in knowledge among high school graduates about educational options and any possible effects of college location upon subsequent attitudes and tastes for continuing higher education. These variables (tastes and information) were stipulated as endogenous intermediate variables, thus model 3 was dynamic in nature, while models 1 and 2 were not.

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[40] Ibid., pp. 6-14.

While model 3 was the most realistic one, data used in the study were not of a longitudinal type, therefore on going relationships could not be tested.[41] Nevertheless, the recognition of a need for such a model to study the influence of college location on the student's decision process was important.

The following conclusions of interest were drawn in the study:

1. . . . spatial accessibility to one or more colleges has little effect, for most youth, on whether they will attend college--be the accessible school a junior college, an open-door four-year college, or a more selective institution.

2. . . . the correlation between a youth's ability and the type of postsecondary activity he chooses (including the type of college attended) is only moderate, and the ability distributions vary less by type of college (though not between pairs of colleges) than most persons would assume.

3. . . . family status and personal ability outweigh accessibility (geographic) in explaining variations in college attendance rates, despite large overlapping in the ability distributions for college and noncollege youth.

4. Despite many irregularities, the data do indicate that individuals tend to choose the nearer option in attending college, but that this preference is usually weak and for some sets of youths may even be reversed.

5. . . . we find, that the more able youth from the economically most advantaged homes will be the most likely to go to college, not only at a distance but in another state.

6. The much-desired expansion of attendance by able youth from low-status families cannot dependably

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[41] Ibid., p. 279.

be increased through the implanting of colleges closer at hand.

7. Propensities to attend college are spread by many influences, but college proximity is among the least influential factors bringing about the diffusion of college going among members of a community. Both low-cost tuition and the elimination of ability constraints on entry are more relevant than school location to those youth who are at the decision margins.

8. . . . it is important to specify generalizations for an interlocked set of cells characterized by types of schools, by types of communities from which students go to college, by types of colleges to which they go as enrollees, and by characteristics of youth who enter college and those who do not. That statement actually is the most general finding of the study.[42]

Geographical proximity, as indicated in this study, may not cause a higher attendance rate among high school graduates in a community, but this does not mean location is an unimportant variable in choosing a particular college. Several studies have found the location of a college the second most important reason given by students and their parents for their college choice.[43]

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[42] Ibid., pp. 268-288.

[43] Charles Abbott, "An Investigation of the College Environment Perceptions of Prospective College Freshmen and Their Relationship to the Choice of a College or University" (unpublished Ed. D. dissertation, Michigan State University, 1967), p. 67; Thomas A. Bowers and Richard C. Pugh, "A Comparison of Factors Underlying College Choice by Students and Parents," American Educational Research Association Paper and Symposia Abstracts, 1972, p. 97; and Robert V. Hanle, "Freshman College Selection Evaluation," Institutional Research and Communication in Higher Education, 1970, p. 128.

Student Migration.--Since 1938 there has been a steady increase in the absolute number of students attending colleges and universities outside their home states, but the percentage of all students attending institutions outside their home state has been decreasing. In 1968, 16.8 percent of 6,545,363 students enrolled in colleges and universities were reported as out-of-state students.[44]

The pattern of migration differs for public and private schools. Publicly controlled institutions of higher education show a steadily decreasing proportion of migrant students; while the private institutions show a steadily increasing proportion, from 28.1 percent of the students enrolled in 1949 to 34.8 percent of those enrolled in 1968.[45]

The net migration (those entering less those leaving the state to go to college) pattern indicates that certain states are major exporters of college students. Since 1938, the states of New Jersey, New York, Illinois, and Connecticut have remained major exporters of college students; while the District of Columbia, Massachusetts, Indiana, North Carolina, and Tennessee have remained major importers of college students.[46]

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[44]Thomas E. Steahr and Calvin F. Schmid, "College Student Migration in the United States," The Journal of Higher Education, Vol. 43, No. 6 (June 1972), pp. 444-445.

[45]Ibid., p. 445.

[46]Ibid., p. 450.

When a student becomes a migrant there is presumably a decision-making process that is completed prior to his physical relocation. The complex nature of this process is partially documented by existing research on migration and mobility in general, but very little study has been done specifically on college students. For example, it might be expected that a student coming from a highly mobile family would tend to be less geographically constrained in his choice of a college than one coming from a less mobile family.

Ability Dimension of Accessibility

Higher educational institutions may range from very selective units with rigid entrance requirements to open-door units with no ability screening requirements. For the prospective student, academic ability serves as a factor which influences both his decision to go to college and his choice of a particular college. Using "rank in high school class" as an ability measure, 41.8 percent of the high school graduates entering college in the fall of 1971 were in the upper quarter; while 4.0 percent were in the lowest quarter.[47]

The ability factor appears to influence college attendance of males differently than it does females. In 1971, 67.1 percent of the males entering college as freshmen

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[47]National Center for Educational Statistics, Digest of Educational Statistics, 1972 ed., Table 91, p. 78.

were in the upper 50 percent of their high school classes; while 80.1 percent of the females were in the upper 50 percent of their high school classes.[48]

Cross suggests fear of failure as the explanation for low aspirations (to go to college) on the part of low ability students. Based on SCOPE data collected from high school seniors, students scoring in the lowest third on a test of academic ability were more than twice as likely to want to avoid the possible failure situation of being rejected by a college of their choice, as students scoring on the top third.[49]

> If these analyses are correct, we would predict that low-achieving fear-threatened high school seniors would apply either to open-door community colleges or to highly selective colleges. They would be sure of acceptance at the open-door colleges, and to be turned down by Harvard is not really very threatening to the student who has no expectation of going there.[50]

The moderately selective colleges are the ones that prove threatening, thus prospective students who seek to avoid failure will avoid applying to these institutions. Access to a college is not limited by the college's decision alone, but also by the personality of the prospective student.

Other research findings have indicated that most students tend to apply mainly to schools that are similar,

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[48] Ibid., p. 78.

[49] Cross, op. cit., pp. 38-39.

[50] Ibid., p. 39.

particularly in terms of cost and quality. Richard R. Spies tested the effects of the quality of schools on applications. Classifying sets of schools according to their median SAT scores he found that:

> . . . an increase in the quality of the school (or its median SAT) will result in a higher proportion of applications from all those students whose SAT scores are above that level. For students more than 175 points below the median, the probability of their applying will fall. In effect, the school would become too good for them.[51]

Applicants, then, attempt to find schools which are commensurate with their academic ability.

Academic achievement and socioeconomic status have been considered as interacting variables affecting college attendance. Project Talent, American Institutes of Research, 1966, provided evidence that as the combined variables decreased, so did the probability of college attendance. For the high achievement, high socioeconomic status quartile the probability of college attendance was .92 for males and .87 for females; while for the low achievement, low socio-economic status quartile the probability of college attendance was .10 for males and .08 for females. The high socio-economic status, low achievement quartile showed .38 male and .37 female probability of college attendance; while the low socio-economic status, high achievement quartile showed .61 male and .42 female probability of college attendance.[52]

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[51]Spies, op. cit., p. 36.

[52]Seymour E. Harris, A Statistical Portrait of Higher Education (New York: McGraw-Hill Book Company, 1972), p. 61.

Ability appears to be a more significant qualifying factor of accessibility than does socioeconomic status. The admissions standards of a college, however, serve to determine this degree of accessibility.

The lack of income, as an element of socioeconomic status, can be altered by financial aid, thus improving the accessibility of a college. This strategy of financial aid seems evident from the above pattern of probabilities of college attendance, and is consistent with the "meritocracy" philosophy of higher education.

The findings of one study indicated that while curriculum, faculty reputation, location, low costs, and university reputation were all important variables, financial aid was the most important single variable influencing the choice of a university.[53]

Price Dimension of Accessibility

How much is it going to cost to go to college? Price may be considered an important variable affecting the college choice of many prospective students. In both the public and private sectors of higher education the price or cost to the student has been increasing, as shown in data from the Office of Education Surveys of Higher Education.

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[53]G. M. Naidu, "Marketing Strategies for Higher Education," Broadening the Concept of Marketing, ed. by David Sparks (Chicago: American Marketing Association, 1970), p. 28.

TABLE 1.--Estimated Tuition and Fees, Room and Board Rates in Institutions of Higher Education, by Type of Control of Institutions: United States, 1962-63 to 1972-73.[a]

Control of Institution	Tuition and Required Fees All Institutions		Board Rates All Institutions		Charges for Dormitory Rooms All Institutions	
	1962-63	1972-73	1962-63	1972-73	1962-63	1972-73
Public	$222	$392	$435	$582	$244	$454
Private	$944	$1,919	$475	$642	$305	$546

Note: Non-adjusted dollars. Data are for the entire academic year.

[a]Office of Education Surveys of Higher Education Basic Student Charges and Opening Fall Enrollments in Higher Education, Standard Education Almanac, 1972, Table 108, p. 134.

As the data indicate, the price gap between private and public institutions has widened over the period considered. Preliminary government figures indicate that income from student tuition and fees has increased slightly faster than total spending during the 1971, 1972, and 1973 fiscal years.[54] Student tuition and fees last year (1972-73) accounted for 13.6 percent of the income of public colleges and universities, and for 36.0 percent of the income of private institutions.[55]

G. Richard Wynn, in a study of pricing at liberal arts colleges,[56] found that for the 425 sample colleges, the total percentage growth of tuition and fees from 1964-65 to 1971-72 was 81.4 percent (8.9 percent compounded annually), while total student charges (including room and board) increased 60.4 percent (7.0 percent compounded annually). When the data were deflated by the Consumer Price Index, the growth was, 38.0 percent for tuition and fees, and 22.0 percent for total student charges, over the 1964-65 to 1971-72 period. Price increases by liberal arts colleges exceeded the general price inflation of the economy, during the study period.

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[54] "Tuition, Fees Rising Faster Than Colleges' Spending," The Chronicle of Higher Education, Vol. 7, No. 36 (June 24, 1974), p. 6.

[55] Ibid., p. 6.

[56] G. Richard Wynn, "Liberal Arts College Pricing: Has the Market Taken Over?" Liberal Education, Vol. 58, No. 3 (October 1972), pp. 422-432.

A further price comparison was made by Wynn between the 425 liberal arts colleges and 42 universities. The net difference in 1971-72 was $1,242 in total student charges (the 425 colleges were higher by this amount). The projection of the difference to 1978-79 was $2,264.[57]

The increasing absolute price gap between the private and public sectors, coupled with a narrowing of product difference may result in large numbers of potential registrants dropping out of the private education market. This price level impact is most likely to affect the lower and middle income strata of prospective private college students.

When only the most selective and prestigious colleges, both private and public are considered, the rates of cost increase were roughly the same, and were not increasing much faster than the general price level, as measured by the GNP deflator, during the period from 1967 to 1971.[58]

For this group of elite schools, Richard R. Spies found that students try to find schools that closely match their own academic ability, and that financial considerations (both income and costs) are of only secondary significance. However, students are less likely to apply to a school as it gets more expensive, all other things being

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[57] Ibid., p. 427.

[58] Spies, op. cit., p. 17.

equal; and high-income students are less affected by costs than their low-income counterparts.[59]

Other Choice Factors

Havinghurst and Rodgers[60] have drawn a multiplicity of psychological and situational factors together into a probability equation to describe whether a given high school graduate will go to college.

The probability depends on the following factors: mental ability; social expectation, or what the family and society expects of him; individual motivation, or his own life goals; financial ability in relation to the cost of continued education; propinquity to an educational institution.

The resulting equation is stated:

P = a (mental ability) + b (social expectation) + c (individual motivation) + d (financial ability) + e (propinquity).

Beezer ahd Hjelm[61] in a summary of research on what influences college attendance cite: (1) parental

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[59] Ibid., pp. 34-37.

[60] Robert J. Havighurst and Robert R. Rodgers, "The Role of Motivation in Attendance at Post-High School Educational Institutions," Who Should Go To College, ed. by Byron S. Hollingshead (New York: Columbia University Press, 1953), p. 137.

[61] Robert H. Beezer and Howard F. Hjelm, Factors Related to College Attendance, Cooperative Research Monograph, No. 8, U. S. Department of Health, Education, and Welfare (Washington, D.C.: U. S. Printing Office, 1963), pp. 35-37.

characteristics, i.e., occupation, education, attitudes, and ethnic origin; (2) high school characteristics, i.e., size, peer influence, teacher and guidance personnel influence, and curriculum; and (3) community characteristics, i.e., socioeconomic levels and proximity to a college, as important influences, but in varying degrees.

The college environment and its impact on present and prospective students also has been the subject of considerable research.

Pace and Stern[62] developed the College Characteristic Index (CCI) as an instrument to measure environmental forces, called presses, and thus describe the college.

Astin and Holland[63] developed the Environmental Assessment Technique (EAT). EAT is based on the belief that the Characteristics of the college environment are largely dependent on the characteristics of the student body. Specifically, EAT is defined in terms of eight variables: size of the student body; the mean intelligence level of the students; and the personal orientation of the student body as reflected in

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[62]George G. Stern, Preliminary Manual: Activities Index--College Characteristics Index (Syracuse: Syracuse Psychological Research Center, 1958); C. Robert Pace, "Evaluating the Total Climate or Profile of a Campus," Current Issues in Higher Education 1961, ed. by Kerry G. Smith (Washington, D.C.: National Education Association, 1961), pp. 171-175; and C. Robert Pace, "Diversity of College Environments," Journal of the National Association of Women Deans and Counselors, Vol. 25 (1961), 21-26.

[63]Alexander W. Astin and John L. Holland, "The Environmental Assessment Technique: A Way to Measure College Environments," Journal of Educational Psychology, Vol. 52 (1961), 308-316.

the percentage of baccalaureate degrees awarded to students in each of six classes of major fields--Realistic, Scientific, Social, Conventional, Enterprising, and Artistic.[64]

A third instrument, entitled College and University Environmental Scales (C.U.E.S.) was developed to sample the general atmosphere of a college. It consists of five scales: (1) Practicality, (2) Community, (3) Awareness, (4) Propriety and (5) Scholarship.[65]

C.U.E.S. was applied by Pace[66] and Abott,[67] and both found that incoming students and presently enrolled students had different perceptions of the college environment. In the Pace study the incoming students' statements about their ideal college and what they expected from their chosen college were nearly identical, but both differed substantially from the actual profile of the college they hoped to enter. Such an information discrepancy reflects the inaccurate or uninformed state of prospective students during their college decision process.

In another study of institutional images as a factor in college choice it was found that the images held by

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[64]Alexander W. Astin, Who Goes Where to College (Chicago: Science Research Associates Inc., 1965), p. 22.

[65]C. Robert Pace, College and University Environment Scales (Princeton: Educational Testing Service, 1963); and C. Robert Pace, "Five College Environments," College Board Review, No. 41 (1960), pp. 24-28.

[66]C. Robert Pace, "When Students Judge Their College," College Board Review, No. 58 (Winter 1966), pp. 26-27.

[67]Abbott, op. cit., pp. 104-113.

students differed markedly. Moreover, the images held by entering freshmen were different from those held by sophomores. The reasons reported for selecting each campus differed from one another in a direction congruent with the different images held of the campuses by the freshmen.[68] The image of an institution is apparently one critical element in understanding the complexities of the student's college choice, just as product image is critical in most consumer buying decisions.

Marketing in Higher Education

The recent conditions of competition and financial difficulty in higher education have led to more open reference to and interest in the application of marketing technology to the field, particularly among private colleges.

Krachenberg[69] has suggested the use of the McCarthy, 4P's model--price, place, promotion, and product--as a suitable framework for marketing strategy planning in higher education.

O'Brian[70] states, "Private institutions in the long run have no alternative but to satisfy their customers." He

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[68]A. I. Morey, "Institutional Images: Importance to Student Choice of College," American Educational Research Association Paper and Symposia Abstracts, 1972, p. 97.

[69]A. R. Krachenberg, "Bringing the Concept of Marketing to Higher Education," The Journal of Higher Education, Vol. 43, No. 5 (May 1972), 369-380.

[70]Edward J. O'Brian, "Marketing Higher Education," College and University Journal, Vol. 12, No. 4 (September 1972), pp. 22-23.

recommends the application of the marketing philosophy to orient the organization's total operation toward meeting the wants of its student customers.

> With the realization that higher education has lost its vaunted position in the eyes of the public, administrators of colleges and universities must be prepared to enter into competition with all other suppliers of products and services--educational and non-educational.[71]

Sutton[72] calls for college admission directors to construct a written marketing plan for college admissions. The development of such a plan would include six essential steps: diagnosis (market research), prognosis (projection of where the college is going), objectives (planned across time for geographic areas, majors, and quality of students), strategy (personnel, training, budgeting, and communication), tactics (specifics of how the school is presented to the students), and control (measures to evaluate the strategy and tactics).

The need to move to a more open marketing approach in admissions has resulted from the students making their own choice. Mr. Ted S. Cooper of The National Association of College Admissions Counselors, commented:

> No less than 10 years ago most of the exclusive and influential institutions in the country felt little obligation to inform potential students about the

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[71] Ibid., p. 22.

[72] David S. Sutton, "Marketing Tactics Put System Into Recruiting," College and University Business, February 1972, pp. 52-53.

> selection process. . . . a goodly portion of their game plan was to make the student feel that he was about to enter into a secret society, shrouded in mystery and promises of financial success and intellectual enlightenment.[73]

The view that the student is a consumer with alternative choices available to him, and the need for colleges to develop marketing plans is widely suggested in the literature. However, these plans, based on principles of sound business management, are not always accepted by college and university administrators. "In fact, there are a few academicians who automatically reject any proposal that uses the terminology of business."[74]

The current educational environment, as one article suggested, rejects the "order taker" role of college admission offices; rather the admissions director must be a combination marketing analyst, manager by objectives, communication/graphics image broker, and a sales-oriented planner.[75]

While these new roles are important to the college's vested interest, the utilization of a more open admission process and marketing techniques will also help the student

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[73]Stanford Erickson, "Marketing Is Only a Part of Admission," College and University Business, February 1972, p. 56.

[74]Luther H. Hoopes, "Your Recruiting is Showing," College and University Journal, November 1973, p. 31.

[75]"Looks Like an Art, Acts Like a Science," College and University Business, February 1972, p. 47.

select the college that best meets his needs. If properly used, they will efficiently and genuinely differentiate the choices for student and school.[76] The measurement of efficiency and effectiveness remain germane questions in the analysis of marketing application to this field. The bandwagon approach to the adoption of some marketing techniques, by some schools, does suggest doubt about the appropriateness of some marketing techniques. Practices such as paying finder fees to free-lance recruiters, multiple-college recruiting, discounting with no-need scholarships, guarantees of advanced credit, and other practices have been considered by some as ethically questionable.[77] The main mechanism for controlling such abuses is the National Association of College Admissions Counselors and the College Board. So far these groups have relied solely on sending out cease-and-desist letters to stop reported abuses.[78]

"The recruiter and public relations practitioner should share the conviction that the recruiting program of any institution of higher learning must be related to purposes and goals that have basic integrity as regards the

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[76] Ibid., p. 47.

[77] Larry Van Dyne, "Quest for Students Leads Many Colleges to Adopt Sales Techniques Once Shunned on Campuses," The Chronicle of Higher Education, May 13, 1974, p. 7.

[78] Ibid., p. 9.

larger interests of human society."[79] Yet, the need for colleges to communicate with their various publics is basic. "In a democratic society, every idea is competing with every other idea in the marketplace for public knowledge, public interest, and public support."[80]

Reference to marketing practices and applications are quite frequent in the current literature of higher education. In most instances the focus is on the communication or promotion elements of marketing, particularly as they relate to student recruitment. Antecedent understanding of the prospective student's buying behavior appears to be lacking. As this literature review has indicated, educational research studies of the student are numerous, but the perspective of marketing, i.e., viewing the student as a buyer of the educational product, is generally lacking. The perspective of consumer behavior research applied to prospective students is felt to be an appropriate approach to develop a foundation for planning legitimate marketing strategies by a college. This research study is designed with this basic premise in mind.

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[79]Wesley Sheffield and V. P. Meskill, "The Ethics of College Recruiting," College and University Journal, Vol. 13, No. 2 (March 1974), pp. 26-27.

[80]Edward L. Bernays, "Parity for Public Relations in Higher Education," College and University Journal, Vol. 11, No. 4 (September 1972), p. 7.

CHAPTER III

RESEARCH FRAMEWORK, HYPOTHESES, AND METHODOLOGY

Research Problem Statement

The premise of this research is that the use of a market segmentation approach based upon buying behavior theory can be used by colleges to identify different market segments and to plan their marketing effort. Planning based upon the recognition of segmental differences within the prospective student population will thus produce more effective and efficient college marketing programs. An individual college, particularly a private one, is highly dependent upon the revenue flow via fees and tuition to provide operating revenue to maintain its operation. While profit is not the objective, survival is, and this requires revenue adequate to meet costs in the long term.

Since students are the source of as much as 60 to 90 percent of the private college's revenue, the emphasis is placed on attracting students. The similarity in revenue needs of the private college and the private business firm suggests a similarity in need for the application of marketing technology and a marketing philosophy. Students are customers. They make institutional and educational product choices, i.e.,

buying decisions. How these decisions are made and why a certain educational institution is selected while others are rejected is the subject of this research.

The most direct association of marketing technology and college effort appears to be in the area of student recruitment. This is the focal area for current revenue planning, and the area where most marketing activity is being applied. While the various tactics of colleges are quite evident, e.g., commercial advertising and professional recruiting, there is little evidence of strategic planning or measurement and evaluation of the effort.

The specific research purposes of this study are to provide additional knowledge and understanding relating to:

1. the prospective student's information seeking and search processes used in making the college choice,

2. the identification of the relative importance of selected evaluative criteria used in making the college choice, and

3. the identification of segmental differences and similarities within a group of prospective students, who have indicated an interest in a specific college, at selected time reference points and across time.

Just as consumers must (1) identify a buying problem, (2) decide upon a class or type of product, and (3) choose a brand and/or a source; the prospective college student must decide (1) whether or not to attend college, (2) what type of

college to attend, and (3) which specific college to attend. The brand and source decision of the consumer is collapsed into the institutional choice decision of the prospective college student, since the producer and source are combined. This is the same for most situations involving the marketing of services.

The purchase process view of a college choice decision and the likelihood of differences in purchasing behavior and personal characteristics, within the prospective college student market, suggests the potential applicability of market segmentation and consumer buying behavior theory to the research problem.

Market Segmentation: Theory and Research

The recognition of a need to identify and know the market group or groups to be served by a firm has led to the development of considerable research and resulting theory on ways to segment markets. From the time Wendell Smith[1] introduced his concept of market segmentation until the present time, correlates have been sought to divide the mass market into segments which have within group homogeneity and between group heterogeneity. These differences between the segments of the total market become useful in market

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[1]Wendell R. Smith, "Product Differentiation and Market Segmentation as Alternative Marketing Strategies," Journal of Marketing, Vol. 21 (July 1956), 3-8.

planning only when the conditions of measurability, accessibility, and substantiality[2] are met.

The real benefit of segmentation to the firm and consumers results from the opportunity to develop more specifically tailored marketing programs. While all marketing variables may be adjusted to the specific characteristics of the various segments, the promotional variables have drawn a disproportionate amount of emphasis. Variation in the response of consumer segments to differentiated promotional programs is frequently experienced by firms.

Frank, Massy, and Wind, suggest that strategies for market segmentation can be broken down in terms of a number of dimensions: two of the most important ones are (1) marketing tool variables (components of the marketing mix) which are used to exploit the differences between market segments, and (2) methods of targeting marketing effort, i.e., directing it to one segment as opposed to another.[3]

Where market segments can be identified by a college, either of the two strategies cited above would be appropriate. A purpose of this research study is to illustrate the application of the philosophy of market segmentation,

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[2]Philip Kotler, Marketing Management: Analysis, Planning, and Control (2nd ed.; Englewood Cliffs, N.J.: Prentice-Hall, 1972), pp. 167-168.

[3]Ronald E. Frank, William F. Massy, and Yoram Wind, Market Segmentation (Englewood Cliffs, N.J.: Prentice-Hall, 1972), pp. 6-7.

as it has been developed in marketing, to the education sector. The specific problem of identifying differences between the characteristics of variously defined market segments will be addressed. This study does not attempt to directly explore the differences in response to specific marketing variables, which is surely a part of a total market segmentation analysis. Rather, it focuses upon identifying the differences which exist between segments selected upon an a priori basis, i.e., ACT and SAT segments; and between segments determined by behavioral classification. The differences found between and within segments, will serve as a potential base for controlled coverage of marketing effort. Determination of the response differences of the various segments to specifically directed marketing effort is left to future studies. This study is only a first stage effort. It is recognized, however, that one critical criterion for determining the desirability of segmenting a market is whether or not the submarkets have different elasticities with respect to the marketing policies of the firm.[4] This would be equally true for a college and its marketing policies.

Bieda and Kassarjian[5] in their search of the market segmentation literature concluded that two approaches to

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[4]Ibid., pp. 133-134.

[5]John C. Bieda and Harold H. Kassarjian, "An Overview of Market Segmentation," Marketing in a Changing World, ed. by Bernard A. Morin (Chicago: American Marketing Association, 1969), pp. 249-253.

segmentation seemed to emerge. One approach is where the researcher starts with an existing product and studies the customers of that generic product to determine if there are differences between buyers of different brands. The other type of segmentation research starts with preconceived notions of what the critical segmentation variables are--social class, personality, cultural variables, etc., then members of each segment are isolated, and product usage, brand loyalty, media exposure, etc., are then collected and analyzed.

In general, the consistency of the results tend to indicate that the research in market segmentation has been either unsuccessful or if a relationship is shown, quite weak. The poor results of these studies are mainly attributed to unrealistic assumptions made in developing the methodology used, and the attempts to use demographic and psychological type variables to predict product choice.[6]

Frank[7] found the most frequently used bases for defining market segments to be considered targets for promotion were: (1) demographic and socioeconomic characteristics, occasionally together with personality traits; and

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[6] Ibid., pp. 249-253.

[7] Ronald E. Frank, "Market Segmentation Research: Findings and Implications," The Application of the Sciences to Marketing Management, ed. by Frank M. Bass, Charles W. King, and Edgar H. Pessemier (New York: John Wiley and Sons, Inc., 1968), pp. 39-68.

(2) purchasing characteristics, especially the total consumption of a product, i.e., heavy versus light buyers and brand loyalty. In his evaluation of the effectiveness of these bases for market segmentation he expressed doubt about their usefulness.

Nondemographic market segmentation bases including; personal values, susceptibility to change, purpose, aesthetic concepts, attitudes, individualized needs, and self-confidence were found to be more useful than demographic bases by Yankelovich.[8] Volume segmentation (the so-called "heavy half" theory)[9] and benefit segmentation[10] have also been used successfully.

Other research which focuses on consumers' activities, interests, prejudices, and opinions; and variously called "psychographic" research, "life-style" research, and even "attitude" research attempts to draw recognizably human portraits of consumers which can be utilized in segmenting a market.[11]

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[8]Daniel Yankelovich, "New Criteria for Market Segmentation," Harvard Business Review, Vol. 42 (March-April 1964), pp. 83-90.

[9]Dik Warren Twedt, "Some Practical Applications of the 'Heavy Half' Theory" (New York: Advertising Research Foundation 10th Annual Conference, October 1964).

[10]Russell I. Haley, "Benefit Segmentation: A Decision-oriented Research Tool," Journal of Marketing, Vol. 32 (July 1968), 30-35.

[11]William D. Wells and Douglas J. Tigert, "Activities, Interests, and Opinions," Journal of Advertising Research (The Advertising Research Foundation, Inc., 1971).

Schools of Thought

Two schools of research on marketing segmentation, (1) the "Behaviorally" oriented school, and (2) the "Decision" oriented school appear to exist.[12]

The "Behaviorally" oriented school is concerned with the identification and documentation of generalizable differences among consumer groups which can lead to insight into the basic processes of consumer behavior. Behavioral science theories and accumulated empirical research findings from both inside and outside the marketing field provide the guidelines and hypotheses for behavioral market segmentation research.

The "Decision" oriented school is also concerned with the existence of group differences in consumption and the prediction of such differences from customer characteristics. However, this school places greater emphasis on "how" to use the findings to improve the efficiency of the firm's marketing program and less emphasis on "why" such differences occur.

The expanded attention given to the development of buying behavior models and theory, such as those by Nicosia,[13]

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[12]Frank, et al., op. cit., pp. 11-13.

[13]Francesco M. Nicosia, Consumer Decision Processes: Marketing and Advertising Implication (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1966).

Howard and Sheth,[14] and Engel, Kollat, and Blackwell[15] contribute insights and perspectives which can be used to structure market segmentation research. The emphasis of these models upon the individual's buying behavior processes is consistent with the aggregative approach of developing market segments useful to the firm in its marketing planning.

Claycamp and Massy[16] point out that market segmentation should be considered a process of aggregation rather than disaggregation. Because of the diseconomies usually associated with developing separate marketing strategies for each individual, consumers must be aggregated into larger groups. The best level of market segmentation and combination of marketing strategies will be determined by the profit maximization rule. The ideal method of aggregating consumers into market segments would be based upon their similarity of response to marketing stimuli.

To operationalize the aggregative approach to market segmentation would appear to require considerable understanding of buying behavior processes. The current research in the buying behavior area may provide a foundation for

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[14]John A. Howard and Jagdish N. Sheth, The Theory of Buyer Behavior (New York: John Wiley and Sons, Inc., 1969).

[15]James F. Engel, David T. Kollat, and Roger D. Blackwell, Consumer Behavior (2nd ed.; New York: Holt, Rinehart, and Winston, Inc., 1973).

[16]Henry J. Claycamp and William Massy, "A Theory of Market Segmentation," Journal of Marketing Research, Vol. 5 (November 1968), 388-394.

market segmentation studies which are more productive than those using demographic or other general bases.

> Decision process theories of consumer behavior lead one to select measures which differ substantially from those used in previous studies. These theories emphasize the process which generates buying behavior. Inferences from these theories suggest that: (1) relationships probably exist between a consumer's personal characteristics and his purchase decision process: and (2) individuals who have similarly structured purchase decision processes are likely to exhibit over-all similarity in buying behavior.[17]

Empirical tests by Lessig and Tollefson provided support for these relationships.

Blattberg and Sen[18] evaluated (1) Customer characteristic segmentation, (2) Attribute segmentation, (3) Purchase behavior segmentation, (4) Consumer characteristic-Purchasing behavior segmentation, and (5) Perceptual mapping segmentation, and concluded that all five major segmentation approaches had some disadvantages. They, in turn, recommend a multi-stage segmentation approach as an improved methodology.

While a large number of different segmentation approaches have been taken by researchers, the number of

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[17]V. Parker Lessig and John O. Tollefson, "Market Segment Identification through Consumer Buying Behavior and Personal Characteristics," Marketing Segmentation: Concepts and Applications, ed. by James Engel, Henry F. Fiorillo, and Murray A. Cayley (New York: Holt, Rinehart, and Winston, Inc., 1972), p. 436.

[18]Robert C. Blattberg and Subrata K. Sen, "Market Segmentation Using Models of Multidimensional Purchase Behavior," Journal of Marketing, Vol. 38 (October 1974), 17-28.

different variables used has been even larger. Hisrich and Peters[19] examined the significance of each of four commonly used segmentation variables (income, social class, age, and family life cycle) as a correlate of two aspects of purchase behavior associated with various entertainment activities. They concluded: (1) a variable significant in one market/product context may not be significant in another; and (2) the practitioner, at least in the instance of many consumer goods and services, should be concerned with the frequency of use of his product or service when determining the segmentation variable(s).[20]

Wiseman[21] found that of seven independent variable sets the most important set in predicting automobile purchasing behavior was the "shopping patterns and usage expectation" set.

Attempts have also been made to track the consumer through his decision making process. O'Brien[22] used a self-reportive consumer panel to provide data for an operational model based upon hierarchy-of-effects theory.

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[19]Robert D. Hisrich and Michael P. Peter, "Selecting the Superior Segmentation Correlate," Journal of Marketing, Vol. 38 (July 1974), 61.

[20]Ibid., p. 63.

[21]Frederick Wiseman, "A Segmentation Analysis on Automobile Buyers During the New Model Year Transition Period," Journal of Marketing, Vol. 35 (April 1971), 46.

[22]Terrence V. O'Brien, "Tracking Consumer Decision Making," Journal of Marketing, Vol. 35 (January 1971), 34-40.

> These two findings--no attitude-purchase effect and no attitude-intention effect--contradict many of the findings in behavioral marketing. Attitude is apparently a genuine aspect of thinking, but it is a product of purchase decision making not a determinant of it.[23]

(In this study attitude represented affect, and intentions represented the likelihood of purchasing a brand.)

Consumer Choice Behavior

Consumer choice behavior has drawn considerable recent attention in marketing. Two approaches have been apparent. One approach involves the investigation of constructs rigorously and in great detail. "Multi-attribute models of attitude provide an example of this type of research which, though model oriented, is limited in its scope (Bass, Pessemier, and Lehmann, 1972; Lehmann, 1971, 1973; Fishbein, 1967; Rosenberg, 1956; Wilkie and Pessemier, 1973)."[24]

Another approach is the development of larger-scale behavioral models which are more complex, but show less detailed concern with constructs and greater concern with relationships among the constructs. Models of this type

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[23] Ibid., p. 40.

[24] Donald R. Lehmann, Terrence V. O'Brien, John U. Farley, and John A. Howard, "Some Empirical Contributions to Buyer Behavior Theory," Journal of Consumer Research, Vol. 1 (December 1974), p. 43.

would include those of Nicosia (1966), Engel, Kollat, and Blackwell (1973), and Howard and Sheth (1969).[25]

The Fishbein attitude model in particular has stimulated research interest into its application to consumer choice. However, several controversies have arisen regarding the Fishbein model as it has been adapted to consumer choice problems.[26]

Attitude according to Fishbein's theory is comprised of two components: (1) the strength of a belief about an object, which is defined as the probability that the attitude object is related to some other object, and (2) the evaluative aspect of a person's belief, i.e., its "goodness" or "badness."[27] The application of Fishbein's theory to marketing has generally been to predict relative preference for similar objects, e.g., brands of products.

Bass and Talarzyk[28] predicted brand preference for six product categories by measuring beliefs about salient

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[25] Ibid., p. 43.

[26] Masao Nakanishi and James R. Bettman, "Attitude Models Revisited: An Individual Level Analysis," Journal of Consumer Research, Vol. 1 (December 1974), 16.

[27] Martin Fishbein, "A Consideration of Beliefs, Attitudes, and Their Relationship," Current Studies in Social Psychology, ed. by Ivan D. Steiner and Martin Fishbein (New York: Holt, Rinehart and Winston, Inc., 1965), p. 117.

[28] Frank M. Bass and W. Wayne Talarzyk, "A Study of Attitude Theory and Brand Preference," Marketing Involvement in Society and the Economy, ed. by Philip R. McDonald (American Marketing Association, Fall Conference, 1969), pp. 272-279.

attributes of competing brands and evaluative aspects of those beliefs. Their research strongly supported the hypothesis that brand preference is related to attitude measurements based on product attributes.

Meyers and Alpert[29] found that some attributes, while they are very important to consumers, are taken for granted. They concluded that attitudes toward features which are most closely related to preference or to actual purchase decisions are determinant; and the other features or attitudes, no matter how favorable, are not determinant. However, Sheth and Talarzyk applying a Rosenberg type model to product specific attributes failed to find any improvement in the prediction of affect when the value of importance component was included.[30] Further support was found by Scott and Bennett[31] for the conclusion that it is not necessary to scale attribute importance so long as only important attributes are included in the study. They too used the Rosenberg

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[29]James H. Meyers and Mark I. Alpert, "Determinant Buying Attitudes: Meaning and Measurement," Journal of Marketing, Vol. 32 (October 1968), 13-20.

[30]Jagdish N. Sheth and W. Wayne Talarzyk, "Relative Contribution of Perceived Instrumentality and Value Importance in Determining Attitudes Toward Brands," Broadening the Concept of Marketing (Chicago: American Marketing Association, 1970), p. 35.

[31]Jerome E. Scott and Peter D. Bennett, "Cognitive Models of Attitude Structure: 'Value Importance' is Important," American Marketing Association Combined Proceedings, 1971, ed. by Fred C. Allvine (Chicago: American Marketing Association, 1972), pp. 348-349.

model, which postulates consistency between the affective and the cognitive components of attitudes.[32]

Scott and Bennett's research also showed, however, that different product attributes were ordering appeal in the different market segments. "It is evident, then, that prior clustering of participants on the importance of attributes may be necessary to avoid errors in ranking determinant attributes or to avoid missing attributes peculiar to individual segments."[33]

A comprehensive review of the research on the effects of "weights" in the weighted, additive utility (WAU) models is provided by Moinpour and Wiley. They concluded:

> The results of these studies generally suggest that "weights" incorporated into the WAU model contribute little to its predictive power. All aspects of the "weighting" hypothesis, however, have not been thoroughly investigated. The issue remains an important area in consumer attitude research.[34]

In Moinpour and Wiley's research on the predictive qualities of "important" attributes compared with "unimportant" attributes, they found that higher quality predictions can be made from the "important" attributes, however,

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[32] Ibid., pp. 346-347.

[33] Ibid., p. 350.

[34] Reza Moinpour and James B. Wiley, "An Empirical Investigation of Weighted, Additive Models of Attitude in Marketing," American Marketing Association Combined Proceedings, 1972, ed. by Boris W. Becker and Helmut Becker (Chicago: American Marketing Association, 1973), p. 388.

respectable predictions can also be made from the "unimportant" attributes.[35]

While the major research focus of these cited studies was on the quality of the prediction of attitude, and the relevance of the weighting element in the quality of the resulting predictions, the inference can be drawn that the importance (weighting) structure of attributes may serve as a basis for segmentation. Attitude measures, however, may not be effective predictors of actual purchase behavior, and market segmentation theory does emphasize the actual purchase of the product in the evaluation of the effectiveness of a particular segmentation scheme. The need for a better understanding of the linkage between attitude and actual purchase behavior seems apparent. The role of an intervening variable in this process has been summarized by Engel, et al.

> . . . it thus may be concluded that attitude usually will not predict behavior accurately unless intention is utilized as an intervening variable. Intentions, in turn, predict behavior to the extent that outside moderating influences are absent or at a minimum. When these environmental constraints are operative, their influence also must be accounted for if behavior is to be predicted. Therefore, attitude change is a valid marketing goal, because a change in attitude is reflected by a change in behavior as expressed through changed intentions.[36]

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[35] Ibid., p. 389.

[36] James F. Engel, et al., Consumer Behavior, 2nd ed., op. cit., p. 274.

Most of the previous research using product-specific attitude measures to predict preference have been static analyses. In an experimental study of attitude change and the choice of a new brand Ginter[37] evaluated attitudes, preference, and previous choice as predictors of choice measured at several points in time.

> Analysis of choice indicate that preference was a better predictor than the multi-attribute measure of affect. The attitude measure was a better predictor than previous choice, the new brand, or the brand to which the subject was previously most loyal. . . .[38]

His results also indicated that attitude change does occur both preceding and following behavior change, and that postchoice attitude change was greater.[39] He did not investigate the specific cause of the postchoice attitude change (whether it was caused by additional information or cognitive dissonance).

Rosenberg[40] in reference to attitude change and attitude organization asserts that most individuals cannot long tolerate inconsistency, and they are motivated to

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[37]James L. Ginter, "An Experimental Investigation of Attitude Change and Choice of a New Brand," Journal of Marketing Research, Vol. 11 (February 1974), 30-40.

[38]Ibid., p. 39.

[39]Ibid., p. 39.

[40]Milton J. Rosenberg, "Inconsistency Arousal and Reduction in Attitude Change," Current Studies in Social Psychology, ed. by Ivan D. Steiner and Martin Fishbein (New York: Holt, Rinehart and Winston, Inc., 1965), pp. 122-125.

maintain internal consistency between the affect and cognitive components of attitude. The personality constructs of cognitive clarity and cognitive style derived from the work of Kelman and Cohler as cited by Sweeney, Mathews and Wilson[41] are also related to attitude change and the person's reaction to persuasive communication. Two types of individuals were identified in terms of their cognitive styles (i.e., an individual's way of dealing with situations involving ambiguity and incongruity), "clarifiers" and "simplifiers." The "clarifiers" were found to be more likely than "simplifiers" to manifest an attitude change following persuasive communications.

Resistence to attitude change is said to be less when the attitudes are peripheral to the self-concept, basic values, and other significant focal objects.[42] Conversely, those attitudes which have psychological centrality, personal goal revelance, and are anchored by other attitudes in the system will tend to be more difficult to change, as compensatory attitude changes must follow to restore balance.[43]

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[41]Timothy W. Sweeney, H. Lee Mathews, and David T. Wilson, "An Analysis of Industrial Buyers' Risk Reducing Behavior: Some Personality Correlates," American Marketing Association Combined Proceedings, ed. by Thomas V. Green (Chicago: American Marketing Association, 1974), pp. 217-218.

[42]W. J. McGuire, "The Current Studies of Cognitive Consistency Theories," Cognitive Consistency, ed. by S. Feldman (New York: Academic Press, 1966).

[43]T. M. Newcomb, R. H. Turner, and P. E. Converse, Social Psychology (New York: Holt, Rinehart and Winston, 1965), p. 136.

A person's degree of commitment to a position has also been found to influence his message perception (assimilation effect and contrast effect).[44]

In summary, this literature review reflects the current interest and research in market segmentation, and the various approaches taken to identify homogeneous customer groups. It is apparent that previous research on market segmentation has not determined any single set of variables which is universally applicable in dividing a total market into market segments. Socioeconomic, demographic, personality, life-style, and perceived benefit variables, to name a few, have been used to segment markets, with a varying degree of success.

Current literature also suggests an association between aspects of buying behavior theory and market segmentation analysis. The linkage of these two areas lies in the contribution buying behavior research has made to the identification of new bases for aggregating individuals into more responsive submarkets.

The decision process theories of consumer behavior suggest that relationships probably exist between a consumer's personal characteristics and his purchase decision process. Individuals who have similarly structured purchase

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[44]Carolyn W. Sherif, M. Sherif, and R. Nebergall, Attitude and Attitude Change (Philadelphia: W. B. Saunders Company, 1965).

decision processes may also exhibit over-all similarity in buying behavior. Such patterns of similarity, if they can be identified, could be used to segment the college market just as they are used to segment a consumer good market.

General Hypothesis

Buying behavior theory postulates that buyers beginning to purchase a product class where they lack prior purchase experience, will not have a well-defined set of evaluative criteria or a high level of knowledge about the various products or brands in that product class. This condition leads to an active search for information necessary to make a product choice. Along with the active search for information, the buyer may, to a considerable extent, generalize from similar experiences in the past.[45]

The general hypothesis of this study is that prospective college students have a weakly structured set of evaluative criteria, which is subject to change during the college buying process. The degree of structuring and the stability, i.e., resistence to change, of the evaluative criteria will vary with the prospective student based upon his or her exposure to, knowledge of, and experience with college associated information and decision making processes.

Social, economic, and other demographic factors may affect the prospective student's level of information about

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[45]Howard and Sheth, op. cit., p. 26.

college attendance in general and the characteristics of specific colleges. Family influence in particular is expected to play a major role in providing information, influencing the evaluative criteria structure, and affecting the college evaluation process. Peer group and other reference groups also serve as potential sources of information and influence.

The basic decision to attend college, the choice of the type of college, and the choice of the specific college, all involve a cost in terms of time, money, foregone opportunities, effort, and associated psychological and social risk. A purchase decision with this degree of importance would seem to require considerable information and thought, and would be expected to require an external search for information, consistent with buying behavior theory. An exception might be where the prospective student is a member of a college educated family, capable of providing the necessary information.

Areas for Research Hypotheses

The exploratory nature of this study did not permit a complete enumeration of hypotheses to be tested prior to data collection. Throughout the data analysis phase additional hypotheses were formulated and tested as they were suggested by previous findings.

To guide the determination of needed data, and the development of appropriate data collection instruments, five

basic areas of exploration were set out and five major hypotheses were stated. It was anticipated that each area would allow the generation of additional specific hypotheses during the course of the research.

The five basic areas of research were:

1. The identification of the importance of selected evaluative criteria and the change in these criteria over time, within and across identified market segments

2. The association of prior economic goods purchase patterns with the college choice patterns

3. The association of socioeconomic and demographic variables with the purchase behavior patterns and preference statements of the prospective students

4. The change over time in the purchase intentions (college and major) of the prospective students

5. The level of college associated information and the usefulness of various information sources in the search process.

These five designated areas of research suggested the following major hypotheses.

Major Research Hypotheses

Hypothesis I: A buying intention statement in terms of the prospective student's choice rating of a particular college, i.e., first, second, third choice, etc., will serve to predict application and enrollment more frequently than other data available to the college.

Hypothesis II: Identifiable market segments of prospective students interested in a particular college, such as, the ACT segment and the SAT segment will differ in their characteristics and behavior.

Hypothesis III: Purchase patterns as reported for the purchase of economic goods with respect to the level of information and degree of decisiveness will carry over to the college choice process.

Hypothesis IV: Prospective college students will change their assessment of the relative importance of selected evaluative criteria over time.

Hypothesis V: Behavior determined segments of prospective college students will differ in the relative importance of selected evaluative criteria at different points in time.

Research Design

The critical phase of the research study examines the college choice (buying) process of the prospective students by using a longitudinal type research design.

VIADE Concept

To visualize the longitudinal nature of the choice process the information state, and decision state of the prospective student was conceptualized as proceeding from a Vague (V), to an Informed (I), to an Application (A), to a Decision (D), to an Enrollment (E) condition. The associated conditions of time, number of colleges considered, depth of information, decision structure definition, and action taken are shown in Figure 1.

Time		Information and Decision State	Number of Colleges Under Consideration	Depth of Information	Decision Structure Definition	Action Taken
t_1	Pre-Application	Vague (V)	Few ——— Many	Very Limited to Limited	Undefined to Weak	General Exposure without a choice making purpose.
		Informed (I)	Few ——— Many	Moderate	Moderate	Information Search and purposive Exposure.
		Application (A)	One Few	Moderate to Great	Moderate to High	Apply to specific college(s).
t_2	Post-Application	Decision/Choice Behavior (D)	One or None	Great	High	Decision to Attend a specific college rather than alternative colleges.
t_3	Post-Enrollment	Enrollment (E)	One or None	Great and Specific	Exact	Enrollment or Nonenrollment behavior.

Figure 1.--VIADE Concept: College Information and Decision Pattern.

Time Period Definitions

1. Pre-application period (t_1). This period is defined as the time prior to the submission of an application for admittance.

2. Post-application period (t_2). This period is defined as the time period after the submission of applications for admittance, but prior to the actual enrollment (the beginning of classes) Fall, 1974.

3. Post-enrollment period (t_3). This period is defined as the time period after the beginning of classes in which the student has enrolled, and continues until the student discontinues his attendance at the college.

ACT and SAT Group Definitions

1. ACT Group. Those prospective college students who had taken the American College Testing Program (ACT) examination and submitted their test scores to the college under study were defined as the ACT group (segment).

2. SAT Group. Those prospective college students who had taken the Scholastic Aptitude Test (SAT), sponsored by the College Entrance Examination Board, and submitted their test scores to the college under study were defined as the SAT Group (segment).

Data were collected and analyzed from each of the three time periods to identify changes and differences in behavior patterns, as shown in Figure 2.

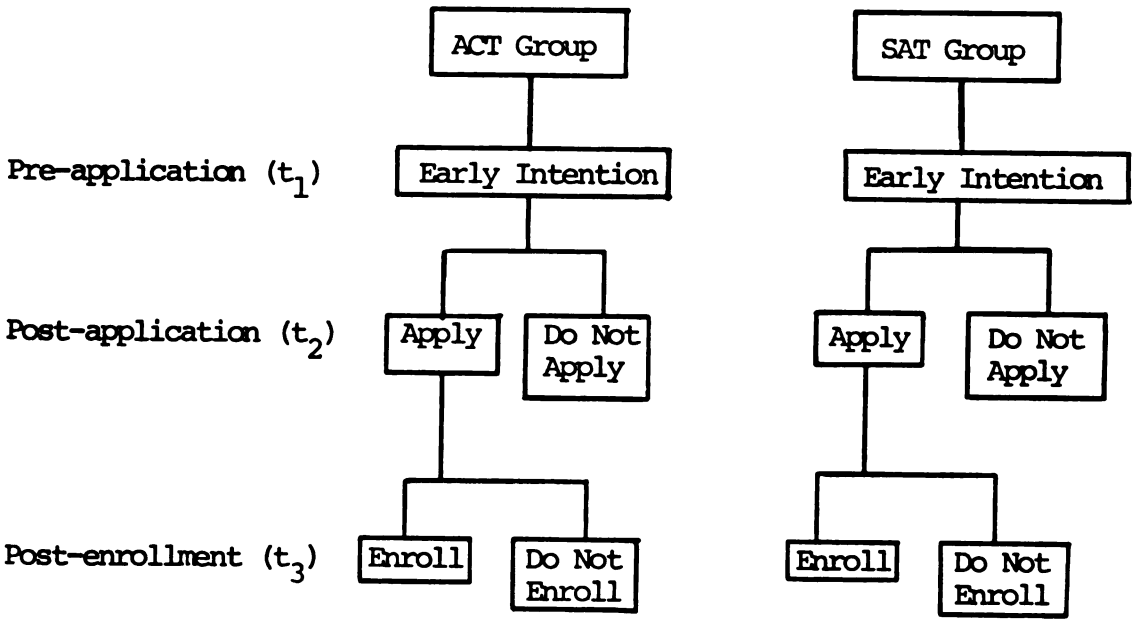

Figure 2.--Longitudinal Time Reference-Student Action Pattern.

The pre-application data came from the ACT profile data and the SAT data available on prospective students having indicated interest in a specific college.

During the post-application period, additional data were collected from a sample of prospective students from both the ACT and the SAT groups.

During the post-enrollment period those prospective students responding to the post-application questionnaire were surveyed to determine their actual enrollment decision and why they made this choice.

It was expected that this design would allow the development of a pattern of buying behavior which could be used to determine: (1) why some interested students applied,

while others did not apply; (2) why some who applied enrolled, and others who applied did not enroll.

It was also expected that the design would improve the overall understanding of prospective students information search and decision process behavior.

Research Methodology

The longitudinal nature of the research design allowed the analysis of data within and between time periods. Separate research methodology was required for each time period.

Pre-Application Period

Pre-application data in the form of the ACT student profiles and SAT profiles were made available by the college participating in the study. Both data sources were used, but the ACT data were more complete and more consistent with the data needs of the study. These data (ACT) included early college preference (intention) statements, the rank order importance of seven evaluative criteria, and descriptive statements about preferred characteristics of colleges made by the prospective students when taking the ACT examination, in either their junior or senior year of high school. The fact that the student had requested the testing service to send his profile to the school indicated some degree of interest in the college.

A total population of ACT profiles received by the school was 193 by July 15, 1974. This included only potential freshman students for Fall, 1974. It was also known at that time which students had applied and which had not applied.

A preliminary study was conducted to determine differences between the applied and non-applied groups. A sample of approximately one-third was randomly drawn for study.

Tests of significance were made using chi-square analysis. Where comparisons were possible the contingency coefficients were calculated.

In addition to the preliminary analysis of pre-application data, these data were used as the initial statements (t_1) against which later statements were compared to determine change on both an individual and group basis.

Post-Application Period

The population definition remained the same for this period of the study, i.e., all prospective students who had submitted ACT and SAT profiles to the college prior to July 15, 1974. The population was limited to prospective freshman students for Fall, 1974 enrollment, with no prior college. Foreign students were excluded. Those students who had not been tested or did not submit their profiles to the college were not included.

Sample.--The total sample for the questionnaire mailing was composed of (1) all members of the ACT profile group, and (2) a randomly drawn sample approximating twenty percent of the total SAT profile group. This resulted in an initial mailing list sample size of 357 prospective students, 194 from the ACT profile group and 163 from the SAT profile group.

The complete population of ACT members was used because of the greater pre-application period (t_1) data available for them. These data were vital to the comparison over time of the evaluative criteria, and the intention statement comparison to actual behavior. Consideration was given to the expected reduction in the sample size caused by failure to respond to the mail questionnaire. Where a student had taken both tests he was placed in the ACT sample only.

Data collection.--The data collection was by means of a mail questionnaire sent to the total sample of 357 prospective students. The mailing was made during late July, 1974. And a follow-up letter was sent two weeks later.

The data collection instrument was a six page questionnaire which was coded to identify the respondent for analytical purposes, as required by the nature of the study design.

The data collection instrument was designed to provide information in the following areas:

1. Family background, particularly family educational patterns, income, occupations, and mobility
2. College information search pattern and information source importance
3. College application pattern
4. Evaluative criteria data, including a ranking and scale measure of importance of those criteria used
5. Prior purchasing pattern profile
6. Degree of preference for a specific college and major

Data analysis.--The responding sample group was divided by behavioral classifications for comparative analysis. The applied and non-applied, and later the enrolled and non-enrolled were the two basic classifications used. Time dependent analysis was also used to determine change in the evaluative criteria and intentions.

Statistical methods.--Associative statistical analysis to evaluate dependency and difference of populations was made using the chi-square statistical method. Comparison of change in rank data on an individual basis over time was made by using the Spearman rank correlation coefficient. The Kendall coefficient of concordance was used in the analysis of similarity of judgments by groups.

Where comparisons in data could be made, given the requirement of equal size contingency tables, a contingency coefficient was used. Additional descriptive statistics were used when appropriate in presenting the data.

Post-Enrollment Period

The third time period, post-enrollment, is defined as the period following Fall enrollment 1974. Since colleges begin classes at different times, the arbitrary date of October 1, 1974, was used to operationally define the beginning of the period.

Data collection.--A second data collection instrument was developed as a follow-up to the post-application period questionnaire. The major purpose of this follow-up was to determine the following:

1. The importance of the various evaluative criteria
2. Where the students in the sample were actually attending college and their major field of study
3. The profile of their chosen college
4. Why they made their particular college choice
5. What if anything they would do differently in making the college choice.

The sample used in the follow-up questionnaire mailing was restricted to those students who responded to the first questionnaire.

Data analysis.--Comparisons were made across time. The analysis of the ACT group involved all three data points.

For the SAT and combined groups only t_2 and t_3 period analysis was possible.

The statistical methods employed were the same as those described for the post-application period.

Data Collection Matrix

The data collection matrix shown in Figure 3, summarizes the data sought and the time periods in which the data were collected. Copies of the post-application and post-enrollment questionnaires appear in Appendix B.

Limitations of the Study

This study was limited by the research design to an exploratory type study. The set of prospective students was narrowly defined as those who had shown a known interest in one specific college. However, these students were not limited in their interest to only one college, as they all considered a number of other colleges. The array of different colleges considered and applied to, as a total, was quite large. This wide variety of colleges and the fact that there were few common colleges in the sets considered from one student to another, limited the opportunity for direct institutional comparison.

A further limitation resulted from considering only one component of the currently used attitude or behavior intention models. The "weighting" or "importance" component (evaluative criteria) was utilized, but an evaluation of

Data Sought	ACT Profile (Junior-Senior Year of High School) (Pre-Application)	Questionnaire I (Post-Application)	Questionnaire II (Post-Enrollment)
Evaluative Criteria	X	X	X
Family Background		X	
Buying Pattern--General		X	
Demographic	X	X	X
Socio-Economic		X	X
Buying Attitude--School	X	X	X
Ability	X		
Application Pattern		X	
Information Search		X	X
School Preference-Intentions	X	X	X
Major Preference-Intentions	X	X	X
Mobility		X	
Prior College Information		X	

Figure 3.--Data Sought with Data Collection Form and Time Reference.

individual colleges with respect to these criteria was not made. This methodology did not permit the determination of a specific attitude measure toward the various colleges.

The study was also limited by the nominal and ordinal nature of the data. Statistical analysis was necessarily limited to the use of nonparametric methods, somewhat reducing the power of the significance tests.

The sample size, when testing multiple variables by cross classification, was considerably reduced. This proved to be a limitation as certain statistical tests were not possible, while in other cases matrix cells had to be combined to allow hypothesis testing. This had an effect upon the completeness of the analysis in some instances.

The fact that all of the prospective students in the study had shown an interest in the college under study (a private four year college) anchored the study to the uniqueness of that institution. This institutional approach parallels the approach taken in many market segmentation studies. However, caution must be taken in generalizing the findings to other situations.

CHAPTER IV

PRE-APPLICATION PERIOD ANALYSIS

Pre-Application Data Analysis

Early interest in a college is expressed by a prospective student when he directs an academic testing service to submit his test scores and other data to that college. Both the ACT and SAT data are of this type.

Data concerning the relative importance of seven college selection factors is furnished by the prospective student when taking the ACT test (usually during his junior or senior year in high school). These seven factors; (1) type of college, (2) student body composition, (3) location, (4) cost, (5) size, (6) field of study, and (7) extracurricular activities are ranked in their order of importance. This ranking indicates the relative importance of each factor, as perceived by the student.

Consistent with a buying behavior framework, these selection factors can be defined as evaluative criteria used in the college choice process, and the ranking reflects the prospective student's attitude toward their relative importance at a point in time (t_1).

The ACT student profile also provides a college with data on specific characteristics which the prospective student

desires in a college (e.g., private college, coeducational, costing over $3,000, located in Michigan, with a business major, and less than 2,000 students). These dimensional statements are more specific than the evaluative criteria, and can be matched against the actual characteristics of a particular college. For example, a student may have ranked location (an evaluative criterion) fourth in importance, and specifically indicated the state of Michigan (a specific dimension of location) as the preferred state in which to attend college.

An expression of the prospective student's college purchase preference is also provided by the ACT student profile. The specific college to which the test scores are sent is indicated as either a first, second, third, etc. choice (purchase preference). This preference statement reflects an evaluation of specific colleges, presumably consistent with the importance of the evaluative criteria, and based upon the information possessed at that time.

These early statements about the importance of evaluative criteria, specific characteristics desired in a college, and the order of preference of particular colleges provide a college some insight into its future application and enrollment pattern. However, it is not clear if any of the information will serve to predict students' applications and enrollments.

Preliminary Study Group

A preliminary study was made to assess the factors which were most frequently associated with the prospective student's decision to apply. The data were from a randomly drawn sample of 68 prospective students from the total population (193 total) of prospective students having submitted their ACT profile reports to the cooperating college, as of July 15, 1974. All prospective students in the population indicated they were planning to enroll in some college as freshmen in the Fall of 1974. Of the 68 prospective students in the sample, 55 had complete data forms. Twenty of the 55 students had applied to the college under study, and 35 of the 55 had not applied as of the sampling data.

Combined Descriptor Match

A comparison was made between the prospective students' preferred college characteristics and the actual characteristics of the subject college. The summed frequency of the Match/No Match condition between the preferred college characteristics and the college's actual characteristics was tested across the applied and non-applied groups. The null hypothesis of no difference between the two groups could not be rejected at the alpha = .05 level (Appendix: Table A-1).

However, when the frequency of agreement (match) between the preferred college characteristics and the

college's actual characteristics was used to classify individuals into two groups; (1) those with a high number of matches (five or more), and (2) those with a low number of matches (less than five), a significant difference was found at alpha = .05 (Appendix: Table A-2). Significantly more prospective students who had applied to the college had a high number of matches. Those not applying to the college more frequently had a low number of matches. The greater number of matching characteristics, without regard to the importance of the associated evaluative criterion, tended to predict application (contingency coefficient, C = .26).

Relative Importance of Evaluative Criteria

The matched condition considered in the preceding section indicated significant differences between groups where "high" or "low" frequencies of match were identified. However, the analysis did not focus on the difference in the relative importance of the evaluative criteria.

The difference in the overall importance ranking of these criteria given by the applied and non-applied groups was determined. Tests of differences could not be made due to the nature of the data, but the absolute data are shown in Appendix, Table A-3.

A further descriptive comparison of the rank order values is provided in Table 2. The median value shown is defined as the mid-point value in the array of rank values

TABLE 2.--Application State Comparison of Evaluative Criteria Importance.

Applied (n = 20)			Non-Applied (n = 35)		
Summed Order of Importance	Variables	Median Rank Order	Summed Order of Importance	Variables	Median Rank Order
1	Field of Study	1	1	Field of Study	1
2	Cost	2	2	Cost	2
3	Type of College	3	3	Type of College	3
4	Location	4	4	Location	4
5	Size	5	5	Extracurricular	5
6	Student Body	6	6	Student Body	5
7	Extracurricular	7	7	Size	6

given the variable by the prospective students. Half or more of the prospective students ranked the variable equal to or higher than the median value. For example, "location" had a median value of four, thus, half or more of the students ranked it first, second, third or fourth in importance.

The difference in the position of "size" and "extracurricular activities" in the rank order of evaluative criteria for the two groups is the most evident variation. "Extracurricular activities" was not a well defined descriptor, as all students in both the applied and non-applied groups matched on the associated college characteristic. While there was no difference in the match condition, the difference in ranking suggests a difference in importance associated with this variable (see Table 3).

Rank Order Classification

The frequency of classification by rank order of the evaluative criteria was tested separately for each evaluative criterion, against the classification applied or non-applied. The rank order cells were grouped where necessary to provide an adequate expected cell value to meet the requirements of chi-square analysis. The null hypothesis of independence was tested at the alpha = .05 level of significance (Appendix: Table A-4).

A 2 x 2 contingency table was used where the cells required grouping. Where either a 2 x 2 or a 2 x 3 contingency table could be used, both chi-square values were calculated. This allowed the calculation of a comparable contingency coefficient for all variables, which indicates the strength of the association between the applied and non-applied classifications.

As indicated in Table 3, the frequency classification by rank order revealed significant differences between the applied and non-applied groups for the variables; (1) extra-curricular activities, (2) type of college, and (3) cost of college.

An additional test was made combining the match and no match descriptor classification with the rank order value classification, and testing it across the applied and non-applied classification (Appendix: Table A-5).

TABLE 3.--Summary: Difference in Evaluative Criteria Importance by Rank Order Tested Across the Applied and Non-Applied Classification.

Variables	Degree of Dependence	Calculated Chi-Square: Critical Value $X^2 = 5.99$	Calculated Chi-Square: Critical Value $X^2 = 3.84$	Contingency Coefficient (2 x 2)
Extracurricular	Significant		4.84	C = .285
Type of College	Significant	9.63	4.32	C = .270
Cost	Significant		3.86	C = .257
Student Body	Not Significant		2.65	C = .214
Location	Not Significant	1.84	1.80	C = .179
Size	Not Significant		.55	C = .100
Field of Study	Not Significant		.50	C = .095

Critical Value: Alpha = .05; 2 x 3, $X^2 = 5.99$; 2 x 2, $X^2 = 3.84$.

The null hypothesis was tested for the "type of college" and the "cost of college" variables. The third variable, "extracurricular activities" was perfectly matched and could not be tested. With the critical value $X^2 = 7.81$, d.f. = 3, alpha = .05, the null hypothesis was not rejected for the "cost of college" variable. For the "type of college" variable the null hypothesis was rejected.

The combination of the match condition and the importance rank of the "type of college" variable affects the application state. It is difficult, however, to determine the direction of the association. Of those applying, 16 out of 20, whether matched or not matched, ranked the "type

of college" third or below in importance. Those not applying were approximately equally divided between the two ranges of rank, when the match condition is not considered.

The students that were matched, more frequently applied when they ranked the "type of college" variable from third to seventh in importance, than when they ranked it first or second. The lower ranking also produced a greater proportion of applications among the no match group than did the higher ranking. The opposite was true for the non-applied group.

Individual Descriptor Match

Further analysis was made of the matched condition of preferred college characteristics and the actual characteristics of the subject college, on an individual characteristic basis. The characteristics associated with the evaluative criteria (1) student body and (2) extracurricular activities, were found to be matched in all cases, and to be of relatively low importance. Therefore, these were not considered in this phase of the analysis.

The characteristics associated with the other five evaluative criteria; (1) type of college, (2) location, (3) cost, (4) size, and (5) field of study, were individually tested based upon the match or no match condition.

A test of the null hypothesis of no difference between the applied and non-applied groups was made using

chi-square analysis (Appendix: Table A-6). Of the characteristics tested, only the "type of college" characteristic showed a significant difference in the matched condition. Those prospective students matching on the characteristic tended to apply, while those not matching tended not to apply.

TABLE 4.--Comparative Dependence of Matched Conditions and Application State for Evaluative Criteria Descriptors.

Evaluative Criteria Variables	Degree of Dependence (X^2)	Alpha Level (d.f.=1)	Contingency Coefficient (2 x 2)
Type of College Descriptor match	Significant	.025	C = .29
Cost Descriptor match	Not Significant	.05	C = .04
Size Descriptor match	Not Significant	.05	C = .00
Location Descriptor match	Not Significant	.05	C = .11
Field of Study Descriptor match	Not Significant	.05	C = .13

College Choice Designation

The final phase in the preliminary analysis of pre-application data involved the association of the application classification with the prospective student's specific college choice statement. The prospective student indicated whether the college to which his ACT profile was to be sent

was his first, second, third, etc., choice school. This can be interpreted as a buying preference statement which reflects the student's assessment of the particular school's desirability. It would follow, then, that the choice preference statement should serve as a predictor of both application and enrollment, ceteris paribus.

The association of college choice preference with the applied and non-applied groups was tested. The rejection level was set at alpha = .05. The calculated $X^2 = 20.32$ would have allowed the rejection of the null hypothesis with a critical value set at alpha = .001, well beyond the alpha = .05 level set for the test (Appendix: Table A-7). The contingency coefficient was, C = .48.

Clearly the college preference designation and the application state are dependent, and it suggests that the preference (intention) statement does serve to predict application.

Where only two choice categories were used, i.e., first choice and second choice or below, the calculated $X^2 = 19.21$ was greater than a critical value $X^2 = 3.84$, d.f. = 1, alpha = .05 (Appendix: Table A-8). The contingency coefficient was, C = .47.

This is interpreted to mean that a significant dependency exists between the first choice and those applying; and between the second choice or below and those not applying. A prospective student indicating the college

is his first choice is significantly more likely to apply than one who indicates the college is a second choice or below.

A further test was made to determine if a second choice only designation (not second or other choice combined) would differ less from the first choice designation (Appendix: Table A-9). The null hypothesis was rejected at a critical value $X^2 = 3.84$, d.f. = 1, alpha = .05. The contingency coefficient was C = .43. The difference in the contingency coefficients is small, C = .47 for the second choice or below group; and C = .43 for the second choice only group.

A test of the null hypothesis using only a second choice, and a third choice or below classification was made. The critical value was $X^2 = 3.84$, d.f. = 1, alpha = .05 (Appendix: Table A-10). The null hypothesis could not be rejected. An ordered choice designation below the first choice level does not appear to have differentiated meaning for predicting the application state. The first choice and other than first choice dichotomy only is meaningful for prediction.

Combination of Significant Choice Elements

Those prospective students who were matched on the subject college's profile characteristics associated with the "type of college" were selected for a test of combined

elements. These students were further classified into two groups; (1) where the college under study was named as their first choice, and (2) where it was named as a choice other than first. This combined classification was tested for independence against the applied and non-applied classification (Appendix: Table A-11). The null hypothesis was rejected and the classifications were accepted as dependent. The calculated $X^2 = 9.06$, was greater than the critical value of $X^2 = 3.84$, d.f. = 1, alpha = .05. The contingency coefficient was, C = .54.

The upper limit for C, that is, the C value which would occur for two perfectly correlated variables is C = .707 for a 2 x 2 contingency table.[1] The ratio of the C value in the test to the upper limit of the C value is .540/.707, or .764. This indicates a high degree of association between the two classification systems. The contingency coefficient, C = .54 for the combined variables of "choice of college" and "type of college" can be compared with the C = .47 where the "type of college" was not included. The combination of "type of college" and "choice of college" provides a more refined association with the application state, thus a better predictor.

Using the same methodology and combining "choice of college" and "field of study" a dependency was found at

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[1]Sidney Siegel, Nonparametric Statistics for the Behavioral Sciences (New York: McGraw-Hill Book Company, 1956), p. 201.

alpha = .05 and C = .46. This C value, however, is not greater than C = .47 found for the "choice of college" alone, and does not improve predictability.

An attempt was made to combine "type of college," "field of study" and "choice of college"; but the expected values were too low, given the small size sample, to meet the requirements of chi-square.

Summary of Analysis

The analysis of the pre-application (t_1) data included; (1) both the combined and individual matches of descriptor statements made by the prospective students against the characteristics of a specific college, (2) the predictive association of the prospective students' college preference statement (first choice, etc.), and (3) the association of the relative importance of individual evaluative criteria with the applied and non-applied classification of the application state.

1. The frequency of matched college descriptors indicated a significant association with the applied and non-applied classification in the expected direction (a greater number of matches among those who applied).

2. The only individual descriptors to show significant association with the application classification were those relating to the "type of college" evaluative criterion, i.e., private or public, two or four year college.

3. When the relative importance of the evaluative criteria, without regard to the matched condition of the descriptors, was tested across the applied and non-applied classification; (1) type of college, (2) extracurricular activities, and (3) cost of college were found to be significantly different.

4. The preference statement, i.e., first choice, was found to be the best single predictor of the application state.

5. The combination of a first choice preference statement and a matched descriptor condition on the "type of college" variable produced the highest level of association, as measured by the contingency coefficient. This combination would appear to predict applications better than any other combination tested.

CHAPTER V

POST-APPLICATION PERIOD ANALYSIS

Post-Application Data Collection

The second time period (t_2) in the longitudinal time reference of the study is the post-application period. This refers to the time period after the submission of applications for admittance. Operationally this was defined as late summer when most prospective students, it was assumed, had made their college applications.

An initial sample of 357 prospective students, 194 from the ACT group and 163 from the SAT group, was sent a six page questionnaire. The mailing was made the last week of July, 1974. Two weeks later a follow-up letter was mailed. Of the 357 questionnaires mailed: 2 were returned due to incorrect address; 159 questionnaires were completed and returned; and 3 letters were received explaining why a response could not be made. This resulted in a 45 percent response rate overall. Ninety-one questionnaires were received from the ACT group and 68 from the SAT group, a 47 percent return rate for the ACT group and a 42 percent return rate for the SAT group.

Post-Application Data Analysis

The post-application period data were analyzed using primarily chi-square analysis. The null hypothesis of no difference between groups was tested, with the alpha level of .05 used to determine the critical value.

Consistent with the design and objectives of the study, tests of differences across the applied and non-applied groups were of major interest. The applied group refers to those prospective students who had submitted an application to the college cooperating in the study. The non-applied group refers to those who did not submit an application to the cooperating college. In most cases these prospective students did submit applications to other colleges. In all cases, applied or non-applied, the prospective students did initially indicate an interest in the cooperating college when they submitted either the ACT or the SAT test scores.

Where it appeared to be meaningful, other cross classifications were analyzed. The general approach of the analysis was to group data to test for specific differences in characteristics or behavior between identified groups. The analysis was, however, limited to those responses given to the post-application period (t_2) questionnaire.

Socioeconomic and Demographic Variables

Education.--The level of education of the prospective student's parents, and brothers or sisters was

considered a factor which might differentiate the applied and non-applied segments. This variable was considered separately for (1) the Fathers and (2) the Mothers of the prospective students, and in combination (both parents). The education of the prospective student's brothers and sisters was also considered, but in combination only.

No difference was found between the applied and non-applied groups, with respect to the highest level of education attained by either the Fathers, or the Mothers, of the combined ACT and SAT group. A further test within the ACT and SAT groups also revealed no difference.

The parents were further classified either Some College/College Degree; and tested across the applied and non-applied classification, both for the combined group, and within the ACT and the SAT groups. No differences were found.

The broader data classification dichotomy No College/ Some College for the parent group did indicate a difference at the alpha = .05 level, and the null hypothesis was rejected (Appendix: Table A-12).

More non-applied students' parents had no college than did the applied group. Fifty percent of the parents of the applied group and 38 percent of the non-applied group had some college. Parental college experience is apparently associated with the application pattern among those prospective students who had shown an initial interest in the college.

Tests within the applied and the non-applied groups, across the ACT and SAT segments indicated no difference in either case, using the No College/Some College data dichotomy.

Testing within the ACT and SAT groups, and across the applied and non-applied classification produced no difference within the ACT group (Appendix: Table A-13). A difference was indicated within the SAT group at an alpha = .05 level (Appendix: Table A-14).

The difference between the SAT and ACT groups was in the applied category. More of the SAT applied students' parents had "some college," while more of the ACT applied students' parents had "no college." In both test groups the observed value of "some college" exceeded the expected value.

The educational level of the prospective student's brothers and sisters was analyzed in the same general way, except no separate analysis (by brother; by sister) was made (Appendix: Table A-15).

The combined ACT and SAT applied group had significantly more brothers or sisters having "attended or attending, but not graduated from college;" and less "graduated from college" than did the non-applied group.

Testing within the ACT and SAT groups, across the applied and non-applied classification, a difference at the alpha = .05 level was found within the ACT group. The ACT applied group had relatively fewer brothers and sisters

that had "graduated from college;" and relatively more now "attending or having attended, but not graduated from college." No difference appeared within the SAT group (Appendix: Table A-16).

TABLE 5.--Ratio of Brothers and Sisters with College Experience to Student Sample (n).

Application State Classification	ACT Group	SAT Group	Combined Group
Applied	17/33 = .51	25/27 = .93	42/ 60 = .70
Non-Applied	61/58 = 1.05	50/41 = 1.22	111/ 99 = 1.12
Total	78/91 = .86	75/68 = 1.10	153/159 = .96

The number of brothers or sisters with college experience per prospective student, as classified, indicates almost twice as many for the SAT applied group as for the ACT applied group. The parents of the SAT group of applied students also had more college experience than did the ACT group's parents. Thus, the SAT applied group appears to come from more educated nuclear families, than does the ACT applied group. The explanation of this difference is not apparent from the data available. However, one tentative explanation is that the college's recruitment effort is directed differently toward the two groups.

Income.--The estimated before tax income of the prospective student's parents was analyzed to determine

differences between groups. Testing the combined ACT and SAT group, and within both groups across the applied and non-applied classification, produced no significant differences. The descriptive percentage distribution of estimated income is presented in Table 6. Income does not appear to be a significant variable of difference.

Residence Value.--No difference was found in the estimated value of neighborhood homes between the applied and non-applied groups. The same held when the SAT group was tested against the ACT group within the applied and the non-applied classification. These findings are consistent with the findings of no difference in the income patterns of the prospective students' parents (Appendix: Table A-17).

Mobility.--Mobility was also considered as a variable which might influence the application decision, since the college involved in the study draws most its students from beyond the local area and approximately 40 percent from out-of-state.

The number of moves made in the past seven years was used to determine mobility. The distance of each move was considered as a measure of the range of mobility. Testing the (1) number of moves, and (2) distance of moves, across the applied and non-applied classification produced no significant differences. Mobility does not appear to be significantly associated with the application state classification (Appendix: Table A-18).

TABLE 6.--Percentage Distribution of Parent's Estimated Income Before Taxes, 1973.

Group Classification	Less Than $10,000	$10,000 to $14,999	$15,000 to $19,999	$20,000 to $25,000	Over $25,000	Total
ACT (n = 78)	15.4	28.2	26.9	15.4	14.1	100
SAT (n = 61)	11.5	32.8	31.1	16.4	8.2	100
Combined	13.7	30.2	28.8	15.8	11.5	100

Vacation Companion Preference.--To determine social and family ties the respondents were asked: If you had the choice, would you prefer taking a vacation trip, with your family, by yourself, or with friends?

Testing the combined ACT and SAT group, and within the groups, no differences were found across the applied and non-applied classification, using a 2 x 3 contingency table.

When the data were regrouped into a 2 x 2 contingency table using the data dichotomy Family or Self/Friends, and testing the applied group across the ACT and SAT classification, a significant difference was found at alpha = .05 (Appendix: Table A-19). The ACT group appeared relatively more "family or self" oriented and the SAT group more "friends" oriented.

No difference appeared when the non-applied group was tested, using the same methodology.

Within the ACT group and the SAT group, using the Family or Self/Friends data dichotomy and testing across the applied and non-applied classification, no significant difference was found at the alpha = .05 level (Appendix: Table A-20).

Only the ACT applied group showed a significantly greater orientation toward the "family or self" classification. All other groups tended to be more "friend" or socially oriented. An overall summary of differences in the socioeconomic variables are shown in Table 7.

TABLE 7.--Differences in Socioeconomic Variables Within Groups Between the Applied and Non-Applied Classification.

Socioeconomic Variables	Application Classification: Applied/Non-Applied		
	Combined	ACT	SAT
Education:			
Parents	Significant	Not Significant	Significant
Brothers & Sisters	Not Significant	Significant	Not Significant
Income:			
Parents	Not Significant	Not Significant	Not Significant
Residence:			
Urban/Rural	Not Significant	Not Significant	Not Significant
Value	Not Significant	Not Significant	Not Significant
Mobility:			
Number of Moves	Not Significant	Not Significant	Not Significant
Distance of Moves	Not Significant	Not Significant	Not Significant
Vacation Preference:			
Family or Self/ Friends	Not Significant	Not Significant[a]	Not Significant

Note: Tests were made at the alpha = .05 level of significance.

[a]A significant difference was found within the applied classification, when tested across the ACT and SAT groups.

Goods Purchase Pattern

To determine the carryover affect of goods purchase patterns to college purchase patterns the respondents were ask to rank four statements from the most accurate to the least accurate.

These statements were:

A. I usually buy whatever is most conveniently available, so I don't have to spend much time looking around or thinking about it.

B. I usually decide exactly what I want to buy, and then I go out and buy it.

C. I usually know what I want to buy, but I like to look around before I make the final decision.

D. I usually look around a lot, and based upon what is available, I decide which item to buy.

Statement	Information State	Purchase Decision State	Selection Pattern Descriptor
A	Uninformed	Decisive	Limited Shopping (Convenience)
B	Informed	Decisive	Limited Shopping (Fulfillment)
C	Informed	Indecisive	Extensive Shopping (Confirmation)
D	Uninformed	Indecisive	Extensive Shopping (Informative)

Figure 4.--Purchase Pattern Matrix.

Figure 4 describes the intended meaning to be associated with each of the four purchase pattern statements, as determined in a pre-test. The ranking given a statement by the respondent was used to classify the individual with reference to his purchase pattern information state and decision state. For example, a person indicating statement "B" most accurately describes his purchase pattern would then be described as normally informed and decisive in his purchasing pattern.

The responses given to the purchase pattern question were tested for each of the four statements to determine any differences in the frequency of rank across the applied and non-applied groups. No difference was found for any of the statements at alpha = .05 (Appendix: Table A-21).

Testing all four statements within the ACT and SAT groups across the applied and non-applied classification revealed no difference.

College Information Level

The purchase pattern statements were used for classification in association with the college information level of prospective students, before their senior year in high school. Those classified as "informed" had ranked either statement "B" or "C" first. Those classified "un-informed" had ranked either statement "A" or "D" first.

The areas of information about colleges are listed below. These were each scaled from 1, very well informed, to 6, very uninformed, by the respondents.

Cost of the colleges

Fields of study offered

Specific majors offered

Reputation of the colleges

Quality of the students

Quality of the faculty

Quality of the facilities

Social opportunities

Recreational opportunities

Admittance requirements

The respondents were then classified as either "informed" about colleges, i.e., six or more of the variables were rated 3 or below on the rating scale; or "uninformed" about colleges, i.e., five or less of the variables were rated 3 or below on the rating scale.

A test was made across the purchase pattern descriptors, and a significant difference was found at the alpha = .05 level. Those respondents who had indicated their goods purchase pattern was one of being informed also showed the informed pattern with regard to college information. The opposite was true for the uninformed purchase pattern group. The fact that some respondents

TABLE 8.--College Informed Classification, Before Senior Year of High School: Combined Group.

Purchase Pattern 1st Ranked Descriptors	Number of Variables More Informed than Uninformed about Colleges		Total
	5 or less	6 or more	
Informed (B or C)	38 (43.6)	92 (86.4)	130
Uninformed (A or D)	13 (7.4)	9 (14.6)	22
Total	51	101	152

Critical Value: Alpha = .05, d.f. = 1, X^2 = 3.84.

Calculated X^2 = 7.47.

were more informed when purchasing consumer goods appears to carry over to the educational purchasing situation.

This same type of analysis was used within the ACT group (the SAT group cell values were too low for a test), and a significant difference was found (Appendix: Table A-22).

Using the first ranked purchase pattern descriptor statement, but classifying the respondents as either "decisive" (statement A or B) or "indecisive" (statement C or D), a test of the college application pattern was made. This, however, did not reveal any differences. The "decisive" group did not apply to any fewer schools than did the "indecisive" group.

Information Sources for Goods Purchasing

The study also inquired into the degree of importance prospective students placed on selected sources of information when making a purchase decision. The mean ($\bar{X}$) rating and rank order of these sources by mean rating are shown in Table 9.

The greatest difference between the ACT and SAT groups, in rank order, was with the "sales people" source of information. The value of "advertising" as a source showed less difference between the groups, and ranked higher in importance than did the "sales people" source. These differences, however, could not be tested for statistical significance.

Each information source was independently tested across the applied and non-applied classification to determine significant differences (Appendix: Table A-23). No differences were found at the alpha = .05 level.

Colleges Visited, Considered, and Applied

One source of information about colleges is the actual exposure to the colleges via a visit. The difference in the "number of colleges visited," before the student's senior year of high school, was tested for the combined ACT and SAT group across the applied and non-applied classification (Appendix: Table A-24). There was no significant difference found at the alpha = .05 level. Further

TABLE 9.--Rank Order and Mean Values of the Importance of Information Sources for Goods Buying Decisions.[a]

Buying Information Sources Used	Combined Group		ACT Group		SAT Group	
	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank
Parents	2.42	1	2.55	1	2.25	1
Product Testing Svc.	2.88	2	2.94	3	2.79	3
Friends	2.89	3	2.99	4	2.75	2
Advertising	2.97	4	2.92	2	3.03	4
Brothers or Sisters	3.12	5	3.16	5	3.07	5
Special Counselors	3.28	6	3.29	6	3.25	7
Government Sources	3.44	7	3.64	9	3.18	6
Teachers	3.52	8	3.63	8	3.39	8
Other Relatives	3.58	9	3.68	10	3.45	9
Sales People	3.68	10	3.57	7	3.82	11
Strangers Familiar with the Item	3.70	11	3.77	11	3.62	10

Note: Ranking is from most important to least important.

[a]No statistical test was made because of the ordinal nature of the data.

tests within the ACT and SAT groups also indicated no significant differences.

The same pattern of analysis was used to compare the frequency distribution for "the number of colleges considered" prior to making final applications. No difference was found testing, (1) the combined ACT and SAT group, or (2) within the ACT and SAT groups.

In Table 10, the results are given in the test of difference with respect to "the number of colleges to which applications were made."

TABLE 10.--Number of Colleges Applied, Frequency Distribution: Combined Group.

Application State Classification	Number of Colleges Applied				Total
	1	2	3	4 or More	
Applied	17(26.8)	16(14.2)	16(10.5)	11(8.5)	60
Non-Applied	49(39.2)	19(20.8)	10(15.5)	10(12.5)	88
Total	66	35	26	21	148*

*Note: Only those respondents applying to one college or more were included in the sample.

Critical Value: Alpha = .05, d.f. = 3, $X^2 = 7.82$.

Calculated $X^2 = 12.49$.

These results indicate a significant difference between the applied and non-applied groups at alpha = .05 level. The members of the applied group tended to apply

at more colleges than did the non-applied group. This seems very important for the strategy planning of a college. A trade-off appears between recruitment effort directed toward generating more applications and the effort to enroll more of those who have already applied. The greater the number of applications submitted by a prospective student the greater the potential competition for his actual attendance, post-application. Recruitment effort spent on those who have already applied may produce a higher payout than effort directed toward generating more applications. This would depend, however, upon whether the college was a first, second, or third preference among those applying.

The within group tests indicated a difference in the ACT group at alpha = .05 level, with the applied group making more applications (Appendix: Table A-25). No difference was found in the SAT group. The difference in the behavior of the applied and non-applied groups within the two segments (ACT and SAT) suggests a need for different approaches to the recruitment of these segments.

Decision to Attend College

Another aspect of the buying process is the initial decision to make a purchase. In the college choice process, this would be the initial decision "to go to college." The actual choice of a specific college would come later. To examine the timing of the decision "to go to college"

respondents were asked to indicate when they made this decision. These responses are shown in Table 11.

TABLE 11.--Time the Decision to Attend College was Made: Frequency and Percentage Distribution.

High School Time Reference	ACT		SAT		Combined	
	(f)	(%)	(f)	(%)	(f)	(%)
Before Sophomore	57	64	41	61	98	63
Sophomore Year	6	7	10	15	16	10
Junior Year	12	13	11	16	23	15
Senior Year	8	9	4	6	12	8
After Graduation	2	2	1	1	3	2
Not Yet	4	4	0	0	4	2
Total	89	100	67	100	156	100

To test for differences in the timing patterns, the combined group and the individual ACT and SAT groups were analyzed across the applied and non-applied classification. No differences were found.

No significant difference was found when the data were grouped into the Before Sophomore/Sophomore or After classification and the applied and non-applied groups were individually tested across the ACT and SAT segments (Appendix: Table A-26).

College Information Level: Factor Evaluation

The association between the level of college information and the timing of the decision to go to college was evaluated. The dichotomy Before Sophomore year (early deciders) and Sophomore year or After (late deciders) was again used to classify the respondents. They were asked to recall their level of information about ten college factors, before their senior year in high school. Each factor was tested separately for differences. Only one factor, "social opportunities," produced a difference. The late deciders were significantly more informed about college "social opportunities" than were the early deciders (Appendix: Table A-27).

The factors: (1) cost of college, (2) fields of study, (3) specific majors, (4) reputation of colleges, (5) quality of students, (6) quality of faculty, (7) quality of facilities, (8) recreational opportunity, and (9) admittance requirements were all tested at alpha = .05 and indicated no difference.

These same factors were then tested across the applied and non-applied classification. Differences were indicated for (1) social opportunities, and (2) fields of study, when the combined group was tested at the alpha = .05 level of significance (Appendix: Table A-28 and Table A-29).

Within group tests on the ACT and SAT groups across the applied and non-applied classification produced these results:

1. Social opportunities factor:

   ACT group no difference at alpha = .05.

   SAT group a difference at alpha = .05.

The SAT applied group was more informed about college "social opportunities" than was the SAT non-applied group.

2. Fields of study factor:

   ACT group a difference at alpha = .05.

   SAT group no difference at alpha = .05.

The ACT applied group was more informed about "fields of study" than was the ACT non-applied group.

College Information Level

The reasons for being more informed about one specific college and the degree of usefulness of various college information sources were examined.

Respondents were asked to indicate the name of the college about which they were most informed, before their senior year of high school; and explain why they were most informed about that college. These responses are summarized in Table 12.

The array of reasons given for being more informed about a certain college can be further summarized into five major categories:

TABLE 12.--Reasons Given for Being Most Informed About One College, Before Senior Year of High School: Combined Group.

	Classification of Reasons Given	% of Total Responses
A.	Materials and information sent by college	16
B.	Brother or Sister attended or now attending	14
C.	Location of college, near home	11
D.	Friends attended or now attending	9
E.	Had visited the college	8
F.	I requested information from the college	7
G.	College representatives provided the information	5
H.	High School Teachers or Counselors	4
I.	Preferred or more interested in the college	4
J.	Unspecified relatives attended or now attending	3
K.	Parent(s) attended	3
L.	I researched the school	3
M.	Talked with students or graduates from there	3
N.	Parents, relatives, or friends knew of the school (but not necessarily attended)	3
O.	Attended a conference or meeting there	2
P.	Church affiliated college	1
Q.	Others (each a single response)	4
		100

1. Information received from friends and relatives: 32 percent of the responses.
2. Information received from the college and its representatives: 29 percent of the responses.
3. Location of the college relative to the student's home: 11 percent of the responses.
4. Campus visitation and direct campus exposure: 10 percent of the responses.
5. Miscellaneous other reasons: 18 percent of the responses.

Usefulness of College Information Sources

Additional analysis of the college information flow process involved asking the respondents to evaluate the usefulness of selected college information sources. Each source was tested across the, (1) Before Sophomore (early deciders)/Sophomore or After (later deciders), and (2) Applied/Non-Applied classifications. The results of these tests are given in Tables 13 and 14. The ACT and SAT market segment groups were tested separately.

A difference in the usefulness of "high school classmates" as a source of information was found in both the ACT and SAT groups. The difference reflected a lower degree of usefulness among those deciding early to go to college, than those deciding late.

A difference in the "high school classmates" as a source of information also existed within the ACT group

TABLE 13.--Degree of Usefulness of College Information Sources: ACT Group.

Sources Used	Classifications Tested Across: Before Sophomore/ Sophomore or After	Classifications Tested Across: Applied/ Non-Applied
Father	No difference	No difference
Mother	No difference	No difference
Other Family Members	No difference	No difference
Friends in College	No difference	No difference
High School Classmates	Difference, alpha=.01	Difference, alpha=.05
College Counselors	No difference	No difference
Other College Representatives	No difference	No difference
Radio	No difference	No difference
Television	No difference	No difference
Newspaper	No difference	No difference
College Provided Material	No difference	No difference
College Visits	No difference	Difference, alpha=.05
High School Teachers	No difference	No difference
High School Counselors	No difference	No difference

Note: All "No difference" findings were at the alpha = .05 level of significance.

TABLE 14.--Degree of Usefulness of College Information Sources: SAT Group.

Sources Used	Classifications Tested Across: Before Sophomore/ Sophomore or After	Classifications Tested Across: Applied/ Non-Applied
Father	No difference	No difference
Mother	No difference	No difference
Other Family Members	No difference	No difference
Friends in College	No difference	No difference
High School Classmates	Difference, alpha=.01	No difference
College Counselors	No difference	No difference
Other College Representatives	No difference	No difference
Radio	No difference	No difference
Television	No difference	No difference
Newspaper	No difference	No difference
College Provided Materials	No difference	No difference
College Visits	No difference	No difference
High School Teachers	No difference	No difference
High School Counselors	No difference	No difference

Note: All "No difference" findings were at the alpha = .05 level of significance.

across the applied and non-applied classification, but the direction of difference was not well defined. No difference was found within the SAT group.

"College visits" as a source of information differed within the ACT group, and followed a pattern of greater usefulness among the applied group than the non-applied group. This may reflect the increased use of planned college visits in the recruitment programs of many private colleges.

Specific College and Major Intentions

An analysis was made of the intention statements given by the prospective students with regard to their specific college choice and major field of study. The strength of their intentions was measured by a probability statement.

Almost all of the respondents were found to be firmly committed to a specific college, and there was no significant difference in the frequency of attendance probabilities within any group across the applied and non-applied classification (Appendix: Table A-30).

The strength of commitment to a specific major was generally less, but no significant difference was found in the pattern of commitment between the applied and non-applied groups within the combined ACT and SAT group (Appendix: Table A-31).

The tests within the ACT and SAT groups did indicate a significant difference in the SAT group, but no difference in the ACT group. The applied SAT group indicated moderate commitment to a major, while the non-applied group polarized, i.e., either strongly committed or weakly committed to a major (Appendix: Table A-32).

Matched Condition Analysis

A matched condition system was used to classify respondents. The matched condition was determined by comparing (1) the college about which the respondent was most informed (prior to the senior year of high school) and (2) the college where he intended to enroll. If the two conditions were the same (i.e., the same college), the respondent was included in the "Matched" group; if they were not the same, he was included in the "Not Matched" group.

College and major intentions.--The Matched/Not Matched classification was then used to test the difference in the prospective students' (1) college intention statements and (2) college major intention statements. Separate tests were made within the combined group, and within the ACT and SAT groups. No significant difference was found in the frequency distribution of intentions (by probability range) for either college intentions or college major intentions.

Early and late deciders.--The Matched/Not Matched classification was also used to test for differences against

the Before Sophomore/Sophomore or After dichotomy of when the decision was first made to go to college (Appendix: Table A-33).

For the combined ACT and SAT group a significant difference was found at the alpha = .05 level. Those that were not matched on the "college most informed" and the "college most likely to attend" dimensions were more frequently those deciding to go to college before their sophomore year, early deciders. A greater proportion of those matched were late deciders.

When testing within the combined ACT and SAT applied group, a significant difference was found. The pattern of difference was again that the early deciders were not matched, while the late deciders were matched more frequently than expected. The pattern was even more pronounced than with the overall combined group (Appendix: Table A-34). A test of the non-applied group resulted in no significant difference.

The same methodology (Matched/Not Matched) was used to determine differences for the variable, "number of colleges considered" prior to applying. A significant difference for the ACT and SAT combined group was found at the alpha = .05 level. Those expecting to attend the same college about which they were most informed, before their senior year in high school, tended to consider fewer colleges than did those not matched (Appendix: Table A-35).

Testing the "number of colleges considered" within the ACT and SAT groups, no difference was found at alpha = .05 for the ACT group; a difference was found at alpha = .05 for the SAT group.

Testing the same variable within the applied and non-applied groups of the combined ACT and SAT group; (1) the applied group showed no difference at alpha = .05, (2) the non-applied group showed a difference at alpha = .05.

The pattern of difference in all cases followed the general pattern found in the combined ACT and SAT case for the variable, i.e., those prospective students who were matched considered fewer colleges than did those who were not matched.

The variable, "number of applications" made to colleges was tested in the same manner, but produced no significant differences. Apparently the matched group, although not considering as many colleges as the not matched group (variation in the size of the evoked sets) still considered it important to apply to several colleges. The not matched group tended to have a larger evoked set than did the matched group; but the end result of the evoked set reduction process, in terms of the number of applications made, was the same for both groups.

A summary of the tests made using the matched condition system is given in Table 15.

TABLE 15.--Differences in Selected Variables Within Groups Between the Matched/Not Matched Classification.

Variable and Group Tested	Difference Across Matched/Not Matched Classification[a] (Alpha = .05)
Early Deciders/Late Deciders:	
Combined ACT and SAT (Applied and Non-Applied)	Significant
Combined ACT and Sat	
Applied Only	Significant
Non-Applied Only	Not Significant
Number of Colleges Considered:	
Combined ACT and SAT (Applied and Non-Applied)	Significant
SAT Only (Applied and Non-Applied)	Significant
ACT Only (Applied and Non-Applied)	Not Significant
Combined ACT and SAT	
Applied Only	Not Significant
Non-Applied Only	Significant
Number of College Applications:	
All Groups	Not Significant
College Intention Probability:	
All Groups	Not Significant
Major Intention Probability:	
All Groups	Not Significant

[a]A matched classification is where the prospective student intends to enroll in the college about which he was most informed, before his senior year in high school.

CHAPTER VI

POST-ENROLLMENT PERIOD ANALYSIS WITH PRIOR PERIOD REFERENCE

Post-Enrollment Data Collection and Analysis

The third time period (t_3) in the longitudinal time reference of the study is the post-enrollment period. This period is defined as the period following the actual enrollment (or non-enrollment) of the student in college, Fall, 1974. At this point in time the college choice process is complete, and the actual college purchase decision executed. The data received in this period, however, may reflect to some degree post purchase evaluation since some experience with the product (college) had been attained.

In time period t_2 a mailing was made to 357 prospective college students, all of whom had indicated an initial interest in a specific college. From this sample, 159 completed questionnaires were returned. All questionnaires were coded allowing a follow-up questionnaire mailing to all those having responded. The follow-up questionnaire was designed to collect the needed post-enrollment period data for across time analysis.

The mailing was made September 24, 1974. It was assumed all prospective students would be enrolled in their

chosen colleges at that time. Of the 159 questionnaires mailed, 121 were returned as of the last of October, 1974 (the cutoff date). This was a 76 percent return rate. The return rate of the ACT segment was, 67 of 91 questionnaires (73.6 percent). The return rate of the SAT segment was 54 of 68 questionnaires (79.4 percent).

TABLE 16.--Post-Enrollment (Follow-up) Response Distribution.

	ACT		SAT	
N = 121	Applied	Non-Applied	Applied	Non-Applied
Not Enrolled College	2	4	1	6
Enrolled College	23	38	21	26
Total	25	42	22	32

Those not enrolling in any college totaled 13 (10.7 percent) of the respondents; while those enrolling in some college totaled 108 (89.3 percent) of the respondents. These sub-classifications of respondents provide the basic units for comparative analysis in this chapter.

Post-Enrollment Data Analysis Methodology

In this chapter three statistical methods; (1) chi-square, (2) Kendall coefficient of concordance, and (3) Spearman rank correlation were used to make group comparisons within and across time periods, and to compare individual's responses across time.

Chi-square analysis was used to test the null hypothesis of no difference between groups in their response frequency distributions. In these tests an alpha level of .05 was set as the basis for critical value determination for minimum rejection.

The Kendall coefficient of concordance (W) was used to determine the degree of agreement among respondents within a class with respect to a set of college evaluative criteria. The significance of agreement was tested using a chi-square statistic and critical value.

The Spearman rank correlation coefficient (r_s) was used to determine agreement between groups with respect to their rank ordering of college evaluative criteria at a point in time. Across time comparisons were also made using the r_s coefficient for both groups of individuals and single individuals. This allowed the degree of change over time to be tested for significance, and provided a basis for further classification into correlated and not correlated groups.

Longitudinal Analysis: Individual

Within the ACT group, analysis of evaluative criteria change across t_1 (pre-application), t_2 (post-application) and t_3 (post-enrollment) periods was possible. The evaluative criteria were considered relevant to the purchase (choice) decision of prospective college students. In period t_1,

data were available on the rank order of importance of the following seven evaluative criteria; (1) size of college, (2) cost of college, (3) type of college, (4) student body composition, (5) location of college, (6) extracurricular activities, and (7) field of study. In periods t_2 and t_3 the same seven criteria, plus (8) specific major, were ranked by the respondents. This allowed a time period comparison of the degree of correlation by individual respondent, using t_3 as a common time period. Only those respondents having ranked the criteria in all three periods were used in the analysis. This constraint reduced the sample size to 30.

To be classified as correlated, the respondent's calculated value of r_s was equal to or greater than a critical value of r_s at the alpha = .05 level. Where r_s was below the .05 alpha level, the individual was classified as not correlated.

The absolute number of prospective students correlated at $t_2 - t_3$ was greater than at $t_1 - t_3$. The direction of this change in the number of correlated students suggests that the consistency of relative importance of the evaluative criteria increases for some students over the decision period. However, testing the hypothesis of no difference in the frequency of students correlated at $t_1 - t_3$ and $t_2 - t_3$, produced no statistically significant difference at the alpha = .05 level. Neither were significantly more students

correlated than not correlated at either $t_1 - t_3$ or $t_2 - t_3$ (Appendix: Table A-36).

These findings tend to support the general hypothesis that the evaluative criteria used in making the college (buying) choice vary in importance as the prospective student moves through the buying process. College choice is not merely a matter of comparing institutions against a firm set of evaluative criteria, but considerable reevaluation of the importance of the evaluative criteria also takes place. This appears consistent with consumer buying behavior where the buyer lacks prior purchase experience, as is the situation with a prospective freshman college student and the purchase (selection) of a college.

Further analysis within the 30 individual cases revealed a varying pattern of consistency in the relative importance of the evaluative criteria. Nine of the 30 cases (30 percent) were not correlated in $t_1 - t_3$ or $t_2 - t_3$. This indicates instability of the criteria over time. Ten of the 30 cases (33 percent) showed stability in the evaluative criteria over time. These 10 cases indicated basically the same degree of importance in the evaluative criteria from pre-application (t_1) through post-application (t_2), to post-enrollment (t_3). Nine of the 30 cases (30 percent) reflected a mixed pattern of stability, with insignificant correlation, $t_1 - t_3$, but significant correlation, $t_2 - t_3$. This pattern suggests the reevaluation of criteria up to

the time the students decided upon the college they would most likely attend. Almost all of the respondents in t_2 were 90 percent or more certain about the college they were going to attend.

The remaining 2 of the 30 cases were correlated at $t_1 - t_3$, but were not correlated at $t_2 - t_3$. They tended to revert to the t_1 period importance pattern after they had actually enrolled. In both cases only one application was made.

In summary, only 30 percent of the ACT cases were stable on the relative importance of the evaluative criteria through the purchase period (t_1, t_2, and t_3). This further supports the general hypothesis of evaluative criteria instability over time among those making the college purchase decision.

Combined ACT and SAT groups.--For period $t_2 - t_3$ both ACT and SAT responses to the rank order of importance of evaluative criteria were analyzed. Nine additional responses from the ACT group were available, since the constraint of responding in both time periods (t_1 and t_2) could be dropped.

A test of difference between the ACT and SAT groups was made using chi-square. No significant difference (alpha = .05) was found in the frequency of correlation at $t_2 - t_3$ for the two groups.

TABLE 17.--Evaluative Criteria: Degree Correlated $t_2 - t_3$.

	Correlated		Not Correlated	
ACT	23 of 39	59.0%	16 of 39	41.0%
SAT	23 of 35	65.7%	12 of 35	34.3%
Total	46 of 74	62.2%	28 of 74	37.8%

Applied and non-applied.--A test of difference was made using the applied and non-applied classification, and the correlated and not correlated classification at $t_1 - t_3$. The distribution indicated a significant difference in the applied and non-applied groups within the ACT segment at $t_1 - t_3$. Significantly fewer respondents in the applied group were correlated (i.e., consistent ordering of the evaluative criteria) (Appendix: Table A-37).

When the same groups were tested correlating $t_2 - t_3$ evaluative criteria statements, there was no significant difference. This indicates the applied group between t_1 and t_2 reevaluated the criteria to produce more correlations with the t_3 structure. The distribution of correlations across the applied and non-applied classification was exactly proportional (actual value equal to expected cell values in all cells) for the $t_2 - t_3$ comparison. (This does not imply the applied and non-applied ranked the evaluative criteria the same.)

Match Condition and Correlation:
Combined ACT and SAT

In the post-application period (t_2), respondents were asked to list the college about which they were most informed, before their senior year in high school. They were also asked to list the college they would most likely attend. These two statements were then compared to produce either a (1) matched (same college), or (2) a not matched (not same college) condition. The matching was done to associate the highest level of information with the enrollment intention to determine consistency.

Using the classification correlated and not correlated for evaluative criteria, $t_2 - t_3$, a test was made across the Matched and Not Matched classification (Appendix: Table A-38). Of the combined ACT and SAT group the correlated group was more frequently associated with the matched condition, while the not correlated group was more frequently associated with the not matched condition. These differences were significant at the alpha = .05 level. The same type comparison using the $t_1 - t_3$ correlation condition could not be tested because of the small sample size (one cell value below five). Descriptively stated, 9 of 18 matched respondents were correlated, while 1 of 9 not matched respondents were correlated.

Those students with a more consistent set of evaluative criteria (correlated group) tended to have a higher

early level of information about the college they planned to attend, than they had about other colleges.

Early and late deciders.--The correlation state of the individual respondent, $t_2 - t_3$, was tested across the Before Sophomore (early decider) and Sophomore or After (late decider) classification. (The reference is to when they first decided they would attend college.) Though more of the early deciders were classified as correlated, there was no significant associative relationship between when the decision to attend college was made and consistency of the relative importance of the evaluative criteria (Appendix: Table A-39).

College decision--matched condition.--The combined classification of a matched (same) state, and the correlated and not correlated state tested across the Before Sophomore/ Sophomore or After dichotomy produced a significant difference at alpha = .05 (Appendix: Table A-40).

These findings indicate that those students planning (t_2) to attend the college about which they were most informed, prior to their senior year in high school, were generally more stable in their ranking of the eight evaluative criteria from t_2 to t_3. The matched and correlated set of students also had decided earlier that they were going to attend college (before their sophomore year) than did the matched but not correlated group. The early decision to go to college appears to be much more associated with those who

had developed a more stable evaluative structure, and who had acquired the necessary level of purchase information to make the college purchase (choice) decision.

Number of applications.--The significantly correlated ($t_2 - t_3$) students tended to apply to fewer colleges than the not correlated students. This difference was statistically significant for the combined ACT and SAT group at alpha = .05 (Appendix: Table A-41).

The correlated group with the more stable set of evaluative criteria appeared more decisive and made fewer college applications. Those in the correlated group appeared to know more about what they want in a college and were able to screen their evoked set to fewer applied colleges. They appeared to be further along in their actual choice of a particular college at t_2 than the not correlated group. As with the purchase of consumer goods, knowing what to consider in a product (college) allows greater decisiveness during the buying process.

A pattern of difference was not found, however, in the number of colleges considered (Appendix: Table A-42). The almost complete lack of difference in the number of colleges considered between the correlated and not correlated groups further supports the importance of the association between a stable set of evaluative criteria and the buying behavior process. The process of reducing the considered set (evoked set) of colleges to an applied set, and then to

the actual college choice was executed differently by the correlated and not correlated groups.

Ability variable.--Ability of the prospective student was considered as a variable which might influence the degree of evaluative criteria stability. Testing the null hypothesis (no difference), a rejection was not possible (Appendix: Table A-43).

The ability variable has no apparent association with the correlated or not correlated state of the students. The higher ability students did not have a more consistent or stable set of evaluative criteria than did the lower ability students.

Type of college.--Whether a student was enrolled in a public or private college was used to test the "type of college" association with the correlated state. No significant difference was found for the combined group when the $t_2 - t_3$ correlation was used. The test was made at the alpha = .05 level, with a critical value of $X^2 = 3.84$. The calculated $X^2 = 1.03$.

When the ACT group was used and the comparison made with $t_1 - t_3$ data, a significant difference was found (Appendix: Table A-44). The $t_1 - t_3$ correlated condition was significantly more associated with the public college student. The $t_2 - t_3$ correlated condition did not indicate such a difference. The greater degree of change was clearly in the private college student category. This may reflect a

greater responsiveness to the recruitment effort directed toward these students.

Individual college level.--A test was made to determine if the correlated condition would discriminate between those who applied to a particular college and later enrolled, and those who applied and did not enroll. No significant difference was found using the t_2 - t_3 correlations and testing at the alpha = .05 level.

Evaluative Criteria t_2: Scaled Values

The previous portion of this chapter considered the rank order of evaluative criteria as given by respondents at t_1, t_2, and t_3. The Spearman coefficient of correlation (r_s) was used to determine the degree of correlation of an individual respondent's ranking of the evaluative criteria across time. In the ACT segment for which t_1 rankings were available, correlation was between t_1 and t_3 rankings for each individual. Respondents in both the ACT and SAT groups were used for the correlation analysis in periods t_2 and t_3, with the r_s statistic calculated on an individual basis. This analysis used rank order data and no comparison of individual criteria was made.

In this section, scale data were used to compare individual evaluative criteria across groups of respondents. The scale used was from 1, very important, to 6, very unimportant. These data were taken in the post-application

period (t_2) and the post-enrollment period (t_3). Scale data from the pre-application period (t_1) were not available.

The analysis with time considered was across three major respondent classifications, (1) applied and non-applied, (2) private college enrollee and public college enrollee, and (3) enrolled and not enrolled. Classifications (1) and (3) were in reference to the respondent's behavior associated with one specific college (the college cooperating with this study).

The following eight evaluative criteria were used (these are the same as in the first part of the chapter): (1) size of college, (2) cost of college, (3) type of college, (4) student body composition, (5) location of college, (6) field of study, (7) extracurricular activities, and (8) specific major.

Applied and non-applied (t_2).--This classification was used for a chi-square analysis of the frequency distribution of responses by scale value across two groups. The format of analysis is illustrated in Appendix Table A-45, for the "cost of college" criterion. Cells were grouped where necessary to meet the requirements of chi-square.

All eight of the evaluative criteria were tested at the alpha = .05 level. In all eight cases no significant difference was found between the applied and non-applied groups. Both sets of respondents tended to evaluate the

importance of the individual criteria the same in the post-application (t_2) period.

Private and public colleges (t_2).--A classification system based upon whether the respondent had enrolled in a public or private college (as reported at t_3) was used to determine differences. None of the eight evaluative criteria appeared as significantly different in their scaled importance across the two groups at alpha = .05.

Within applied group: enrolled and not enrolled (t_2).--The within the applied group analysis refers to one specific (private) college. Three of the evaluative criteria appeared significantly different; (1) type of college, (2) field of study, and (3) extracurricular activities (Appendix: Tables A-46, A-47, and A-48).

The enrolled group placed significantly more emphasis upon the importance of the "type of college" than did the not enrolled group. The enrolled group placed significantly less emphasis upon the importance of the "field of study," however, it was generally considered to be important. The enrolled group placed significantly less emphasis upon the importance of "extracurricular activities" than did the not enrolled group. All three differences were highly significant, at either the alpha = .01 or alpha = .02 level.

The value of knowing these attitudinal differences in advance, to a college, would be an improved prediction of Fall enrollment from the applied set.

Evaluative Criteria t_3: Scaled Values

The same pattern of analysis was used for the post-enrollment (t_3) data on the importance of the eight evaluative criteria. The scale used was the same as in t_2, i.e., 1, very important, to 6, very unimportant.

Applied and non-applied (t_3).--In period t_2 no difference was found between the applied and non-applied groups. In t_3, however, one of the eight evaluative criteria, "location of the college," was significantly different (Appendix: Table A-49).

The applied group was significantly less concerned with the importance of the "location of the college" than was the non-applied group. The lower degree of importance attached to the "location of the college" allows a wider geographical range of choice, which places more colleges in competition for these prospective students. The smaller degree of locational constraint seems consistent with the t_2 period finding that the applied group had made application to significantly more colleges than the non-applied group.

Private and public colleges (t_3).--In period t_2 none of the eight evaluative criteria were found to be significantly different in importance across the private and public college groups. In this period (t_3) two evaluative criteria, (1) size of college, and (2) cost of college were found to be significantly different at alpha = .05 (Appendix: Tables A-50, A-51).

The "size of college" criterion appeared significantly more important to the private college enrollee than it did to the public college enrollee. The opposite pattern was observed with the "cost of college" criterion. The public college enrollee considered cost to be significantly more important than did the private college enrollee. These are, of course, the two most obvious differences between most private and public colleges.

The difference in the importance of the two criteria was not evident at t_2, but tended to emerge between the post-application (t_2) and post-enrollment (t_3) periods. These two criteria may have weighed heavily in the final choice of a college where applications had been made to both public and private colleges.

Within applied group: enrolled and not enrolled (t_3).--Of those respondents who had applied to the subject college, the enrolled and not enrolled groups differed in t_2 on, (1) type of college, (2) field of study, and (3) extracurricular activities. In period t_3 the two groups differed on the importance of the "student body composition" (Appendix: Table A-52). No difference was found in the other seven variables. Again there is an apparent shift in the assessment of the degree of importance of evaluative criteria across time.

The "student body composition" criterion was significantly less important for the enrolled group than the

not enrolled group. The change from period t_2 was for the criterion to become more important for the not enrolled group and less important for the enrolled group.

The "type of college" criterion became less important for the enrolled group from t_2 to t_3. The "field of study" criterion became more important for the enrolled group and less important for the not enrolled group. The "extra-curricular activities" criterion became less important to the not enrolled group, with little change in the enrolled group. Change in importance of the evaluative criteria was evident with four of the eight criteria from t_2 to t_3 within the applied group.

Evaluative Criteria: Within Group Association of Rank Order

In the first part of this chapter the Spearman rank correlation coefficient (r_s) was used to determine the association of two rankings of the evaluative criteria by an individual respondent across time. This allowed a test of significance at alpha = .05, and permitted a classification of the individual respondent as either correlated or not correlated.

In this section the ranking of the evaluative criteria by each individual respondent in a defined grouping of respondents was used to calculate a measure of the relation among the several rankings. This was accomplished using the Kendall coefficient of concordance W. The value

of the coefficient of concordance W was then tested where N (the number of evaluative criteria) was larger than 7 using a chi-square statistic and critical value.[1]

The rejection of the no difference hypothesis was set at an alpha = .05 level. For example, the individual rankings of the evaluative criteria of all respondents in the enrolled group were placed in a k x N matrix. The number of individuals ranking the eight (N) evaluative criteria is equal to k. The W coefficient was determined and converted into a chi-square (X^2) value. X^2 was then tested at an alpha = .05, d.f. = N-1, critical value of X^2.

If a statistically significant relationship was found in the ranking given by the individuals, it was possible to determine the ordering of the evaluative criteria by using the order of summed ranks of the individual criteria.[2] The lowest summed value would indicate the criterion which was most important of the set of evaluative criteria, and so on, through the order.

After having determined an order of importance for a defined group (e.g., enrolled respondents) a measure of association was determined, (1) for the same group at two points in time, or (2) for different groups at the same

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[1]Sidney Siegel, Nonparametric Statistics for the Behavioral Sciences (New York: McGraw-Hill Book Company, 1956), p. 236.

[2]Ibid., p. 238.

point in time. The Spearman rank correlation coefficient (r_s) was used as the measure of association. Tests of significance were then made.

Coefficient of concordance W analysis.--The group classifications tested with the chi-square statistic based upon the calculated value of W were all found to have a significant relationship (similarity of ranking by the member respondents). The specific groups tested, the X^2 and W values, and the alpha levels of significance are shown in Tables 18 and 19.

For each of the group classifications at time periods t_2 and t_3 shown in Tables 18 and 19, a rank order array of the eight evaluative criteria was determined from the concordance matrix.

Comparative group analysis: applied group.--The applied group was divided into enrolled and not enrolled groups. As shown in Table 20, the between group and across time comparisons indicated a significant degree of correlation. The direction of change in the enrolled and not enrolled groups from t_2 to t_3 was from very highly correlated (r_s = .923) to less highly correlated (r_s = .789). The degree of correlation was relatively greater in the not enrolled group, $t_2 - t_3$, than in the enrolled group, $t_2 - t_3$.

A within time period comparison of the ACT and SAT enrolled and not enrolled groups was made at t_2. This is shown in Table 21.

TABLE 18.--Significance of Within Group Homogeneity in Rank Order of Evaluative Criteria Based on the Coefficient of Concordance W, Using a Chi-Square Test: Enrolled and Not Enrolled, Within the Applied Group, t_2 and t_3.

	Applied (N = 8)							
	Post-Application (t_2)				Post-Enrollment (t_3)			
Group Classification	k Size	W Value	X^2 Value	Alpha Level of Signifi.	W Value	X^2 Value	Alpha Level of Signifi.	k Size
Enrolled	21	.308	45.21	.001	.317	42.11	.001	18
ACT only	9	.315	19.85	.01	.319	20.10	.01	9
SAT only	12	.443	37.21	.001	.333	20.98	.01	9
Not Enrolled	14	.505	49.49	.001	.306	36.40	.001	17
ACT only	9	.494	31.12	.001	.279	19.53	.01	10
SAT only	5	.633	22.16	.01	.487	23.86	.01	7

TABLE 19.--Significance of Within Group Homogeneity in Rank Order of Evaluative Criteria Based on the Coefficient of Concordance W, Using a Chi-Square Test: Private and Public, Within the Non-Applied Group, t_2 and t_3.

	Non-Applied (N = 8)							
	Post-Application (t_2)				Post-Enrollment (t_3)			
Group Classification	k Size	W Value	X^2 Value	Alpha Level of Signifi.	W Value	X^2 Value	Alpha Level of Signifi.	k Size
Private	19	.319	42.43	.001	.317	42.12	.001	19
ACT only	9	.400	25.20	.001	.377	23.75	.01	9
SAT only	10	.344	24.08	.01	.324	22.68	.01	10
Public	32	.367	82.21	.001	.307	70.91	.001	33
ACT only	19	.431	57.32	.001	.289	42.48	.001	21
SAT only	13	.314	28.57	.001	.356	29.90	.001	12

TABLE 20.--Rank Order of Importance of the Evaluative Criteria Based on the Coefficient of Concordance W Analysis: Enrolled and Not Enrolled, Within the Applied Group, t_2 and t_3.

	Applied Group			
	Enrolled		Not Enrolled	
Rank Order	Post-Application (t_2)	Post-Enrollment (t_3)	Post-Application (t_2)	Post-Enrollment (t_3)
1	Field	Field	Field	Field
2	Type	Specific Major	Specific Major	Specific Major
3	Cost	Size	Type	Cost
4	Specific Major	Location/Type	Cost	Location
5	Size	Type/Location	Size	Size
6	Location	Cost	Location/Student Body	Type
7	Student Body	Extracurricular	Student/Location Body	Student Body
8	Extracurricular	Student Body	Extracurricular	Extracurricular

Correlation Coefficients: (1) Enrolled, t_2-t_3; r_s = .673, significant at alpha = .05. (2) Not enrolled t_2-t_3, r_s = .804, significant at alpha = .05. (3) Enrolled and Not Enrolled, t_2; r_s = .923, significant at alpha = .01. (4) Enrolled and Not Enrolled, t_3; r_s = .789, significant at alpha = .05.

Critical Values of r_s: Alpha = .05, r_s = .643; Alpha = .01, r_s = .833.

TABLE 21.--Rank Order of Importance of the Evaluative Criteria Based on the Coefficient of Concordance W Analysis: ACT and SAT, Enrolled and Not Enrolled, Within the Applied Group, t_2.

	Applied Group			
	ACT (t_2)		SAT (t_2)	
Order	Enrolled	Not Enrolled	Enrolled	Not Enrolled
1	Field	Field	Field	Field/Specific Major
2	Type	Type	Specific Major	Specific/Field Major
3	Location	Specific Major	Type	Cost
4	Cost	Cost	Cost	Type
5	Size	Size/Location	Size	Size
6	Extracurricular	Location/Size	Location	Student Body
7	Specific Major	Student Body	Student Body	Location
8	Student Body	Extracurricular	Extracurricular	Extracurricular

Correlation Coefficients: (1) ACT Enrolled and SAT Enrolled, t_2; $r_s = .524$, not significant, alpha = .05. (2) ACT Not Enrolled and SAT Not Enrolled, t_2; $r_s = .869$, significant at alpha = .01. (3) ACT: Enrolled and Not Enrolled, t_2; $r_s = .673$, significant at alpha = .05. (4) SAT: Enrolled and Not Enrolled, t_2; $r_s = .946$, significant at alpha = .01.

Critical Values of r_s: Alpha = .05, $r_s = .643$; Alpha = .01, $r_s = .833$.

At t_2 the ACT enrolled and the SAT enrolled groups were not significantly correlated, indicating a difference in the importance ranking of the evaluative criteria. Differences in the importance of "location" and "specific major" were most evident.

The ACT not enrolled and the SAT not enrolled groups were significantly alike in their ranking of the evaluative criteria.

Overall, the SAT group was more in agreement on the evaluative criteria ranking than was the ACT group.

At t_3, as shown in Table 22, the ACT enrolled and the SAT enrolled groups were very highly correlated, $r_s = .929$. The groups had not been significantly correlated at t_2.

From t_2 to t_3 the ACT enrolled and not enrolled groups moved to a much higher degree of agreement on the ranking ($r_s = .673$ to $r_s = .929$). The SAT enrolled and not enrolled groups moved from a high degree of agreement to a lesser degree of agreement ($r_s = .946$ to $r_s = .738$).

Comparative group analysis: non-applied group.--The non-applied group was divided into those enrolling in a private college and those enrolling in a public college. Comparisons were then made using the r_s coefficient. It was possible to further divide each group by the ACT and SAT segment classification. These comparisons of the evaluative criteria rankings are shown in Tables 23, 24, and 25.

TABLE 22.--Rank Order of Importance of the Evaluative Criteria Based on the Coefficient of Concordance W Analysis: ACT and SAT, Enrolled and Not Enrolled, Within the Applied Group, t_3.

	Applied Group			
	ACT (t_3)		SAT (t_3)	
Order	Enrolled	Not Enrolled	Enrolled	Not Enrolled
1	Field	Field	Field	Field
2	Size	Specific Major	Specific Major	Specific Major
3	Specific Major	Size	Size	Cost
4	Location	Location	Type	Location
5	Type	Cost	Location	Type
6	Cost	Type	Cost	Student Body
7	Extracurricular	Student Body	Extracurricular	Size
8	Student Body	Extracurricular	Student Body	Extracurricular

Correlation Coefficients: (1) ACT Enrolled and SAT Enrolled, t_3; r_s = .929, significant at alpha = .01. (2) ACT Not Enrolled and SAT Not Enrolled, t_3; r_s = .738, significant at alpha = .05. (3) ACT: Enrolled and Not Enrolled, t_3; r_s = .929, significant at alpha = .01. (4) SAT: Enrolled and Not Enrolled, t_3; r_s = .738, significant at alpha = .05.

Critical Values of r_s: Alpha = .05, r_s = .643; Alpha = .01, r_s = .833.

TABLE 23.--Rank Order of Importance of the Evaluative Criteria Based on the Coefficient of Concordance W Analysis: Private and Public, Within the Non-Applied Group, t_2 and t_3.

	Non-Applied Group			
	Private		Public	
Rank Order	Post-Application (t_2)	Post-Enrollment (t_3)	Post-Application (t_2)	Post-Enrollment (t_3)
1	Field	Field	Field	Field
2	Cost	Size	Cost	Specific Major
3	Specific Major	Type	Specific Major	Cost
4	Size	Specific Major	Location	Location
5	Type	Cost/Location	Size	Type
6	Location	Location/Cost	Type	Size
7	Student Body/ Extracurricular	Student Body	Student Body	Student Body
8	Extracurricular/ Student Body	Extracurricular	Extracurricular	Extracurricular

Correlation Coefficients: (1) Private, t_2-t_3; r_s = .738, significant at alpha = .05. (2) Public, t_2-t_3; r_s = .952, significant at alpha = .01. (3) Private and Public, t_2; r_s = .923, significant at alpha = .01. (4) Private and Public, t_3; r_s = .613, not significant at alpha = .05.

Critical Values of r_s: Alpha = .05, r_s = .643; Alpha = .01, r_s = .833.

TABLE 24.--Rank Order of Importance of the Evaluative Criteria Based on the Coefficient and Concordance W Analysis: ACT and SAT, Private and Public, Within the Non-Applied Group, t_2.

Rank Order	Non-Applied Group			
	ACT (t_2)		SAT (t_2)	
	Private	Public	Private	Public
1	Field	Field	Field	Field
2	Size	Cost	Type	Cost
3	Cost	Specific Major	Cost	Specific Major
4	Specific Major	Location	Specific Major	Location
5	Type	Size	Size/Location	Size
6	Extracurricular	Type	Location/Size	Student Body
7	Location/ Student Body	Extracurricular	Student Body	Type
8	Student Body/ Location	Student Body	Extracurricular	Extracurricular

Correlation Coefficients: (1) ACT Private and SAT Private, t_2; r_s = .637, not significant, alpha = .05. (2) ACT Public and SAT Public, t_2; r_s = .929, significant at alpha = .01. (3) ACT: Private and Public, t_2; r_s = .696, significant at alpha = .05. (4) SAT: Private and Public, t_2; r_s = .637, not significant at alpha = .05.

Critical Values of r_s: Alpha = .05, r_s = .643; Alpha = .01, r_s = .833.

TABLE 25.--Rank Order of Importance of the Evaluative Criteria Based on the Coefficient of Concordance W Analysis: ACT and SAT, Private and Public, Within the Non-Applied Group, t_3.

Rank Order	Non-Applied Group			
	ACT (t_3)		SAT (t_3)	
	Private	Public	Private	Public
1	Field	Field	Field	Field
2	Type	Specific Major	Location/Size	Cost
3	Size/Specific Major	Cost	Size/Location	Specific Major
4	Specific Major/ Size	Location	Cost	Location
5	Cost	Size	Type/Specific Major	Type
6	Location	Type	Specific Major/ Type	Size
7	Extracurricular	Student Body	Student Body	Student Body
8	Student Body	Extracurricular	Extracurricular	Extracurricular

Correlation Coefficients: (1) ACT Private and SAT Private, t_3, $r_s = .613$, not significant at alpha = .05. (2) ACT Public and SAT Public, t_3; $r_s = .952$, significant at alpha = .01. (3) ACT: Private and Public, t_3; $r_s = .637$, not significant at alpha = .05. (4) SAT: Private and Public, t_3; $r_s = .702$, significant at alpha = .05.

Critical Values of r_s: Alpha = .05, $r_s = .643$; Alpha = .01, $r_s = .833$.

The across time (t_2 - t_3) comparison of the private college group indicated a significant correlation of the evaluative criteria, but the correlation was less than for the public college group (r_s = .738 and r_s = .952 respectively).

At t_2 the public and private college group comparison indicated a higher degree of similarity between the groups than was indicated at t_3 (r_s = .923, significant at t_2; r_s = .613, not significant at t_3). The greater change in the relative importance of the evaluative criteria was within the private college group.

Tables 24 and 25 show the private and public college groups within the ACT and SAT segments at t_2 and t_3 respectively.

At t_2 the ACT and SAT private college groups were not significantly correlated, while the ACT and SAT public college groups were significantly correlated. Within the ACT segment (t_2), the private college and public college groups were significantly correlated; but within the SAT segment (t_2), they were not significantly correlated. The greatest difference in the ranking of the evaluative criteria was with the SAT private college group.

At t_3 the ACT and SAT private college groups were not significantly correlated (the same as in t_2). The ACT and SAT public college groups were significantly correlated at t_3 (the same as in t_2). Thus, the ACT and SAT segments

within the private and public college classification showed no significant change over time.

The private and public college classification within the ACT segment did show a change from significantly correlated to not significantly correlated at t_2 and t_3 respectively. The private and public college classification within the SAT segment also changed, but from not significantly correlated at t_2 to significantly correlated at t_3. Thus, the ACT private and public college students became less alike in their evaluation of the relative importance of the evaluative criteria; while the SAT private and public college students became more alike in their evaluation of the criteria over time.

Enrolled to private and public comparison.--A final comparison at t_2 and t_3 was made by correlating the enrolled with the (1) private (non-applied) and (2) public (non-applied) college groups.

The enrolled and the private college group were significantly correlated ($r_s = .851$) at t_2. The enrolled and the public college group were also significantly correlated ($r_s = .738$), at t_2. At t_3 the same pattern was found. Both the private and public college groups were significantly correlated with the enrolled group ($r_s = .875$ and $r_s = .756$ respectively).

Those students enrolling at the subject college did not differ significantly from those students enrolling at

other private colleges or public colleges in their evaluation of the relative importance of the evaluative criteria at either t_2 or t_3.

Selected College Characteristics

Data were collected in the post-enrollment (t_3) period on the characteristics of the colleges selected by the respondents for enrollment (brand characteristics). These characteristics, (1) size of college, (2) type of college, and (3) cost of college, proved to be significantly different for the applied and non-applied segments of the total respondent group.

Testing the combined ACT and SAT segments, the applied group (which included those enrolling at the college under study) tended to attend smaller colleges than did the non-applied group. This difference was found to be significant in the ACT segment only, when separate group tests were made (Appendix: Table A-53).

Significantly more of the applied students, of the combined ACT and SAT segments, were attending private colleges, while more of the non-applied students were attending public colleges. This difference was also significant within the separate ACT and SAT segments (Appendix: Table A-54).

The "cost of college" within the combined group differed significantly. More of the applied group were attending colleges costing $3,000 or over per year than

were the non-applied group. Over fifty percent of the non-applied were paying under $2,000 per year in college costs. The separate ACT and SAT segments had the same significantly different pattern (Appendix: Table A-55).

Student aid characteristics.--Associated with cost is the source of financial aid, if any, used by the student. These sources were compared across the applied and non-applied groups to determine different source usage. The respondents were asked to indicate if they were receiving financial aid: (1) from parents, (2) from college, (3) from other sources, or (4) receiving no financial aid.

The findings were: (1) no more of the applied group than the non-applied group were receiving financial aid from their "parents" (alpha = .05), (2) significantly more of the applied group than the non-applied group were receiving financial aid from the "college" (alpha = .01), (3) significantly more of the non-applied group than the applied group were receiving "no" financial aid (alpha = .05).

The category "other sources" of financial aid was not significantly different between the groups (alpha = .05).

No difference was found within the applied group across the enrolled or not enrolled classifications for any of the financial aid sources (alpha = .05).

CHAPTER VII

SUMMARY FINDINGS AND CONCLUSIONS

Purposes and Approach of the Study

The major purposes of this study were: (1) to provide additional knowledge and understanding of the prospective college student's information search process and source usage when making the college choice decision, (2) to identify the importance of selected evaluative criteria used in the choice process, and (3) to identify segmental differences within a group of prospective students indicating interest in a specific college, at selected time reference points and across time.

The college choice problem was viewed as a purchase problem not significantly different than the type faced by consumers when purchasing economic goods. A marketing perspective was used to define and structure the research approach, with emphasis placed on the application of market segmentation, buyer intention, and buyer behavior theory.

The research design was longitudinal in nature, with three time periods: Pre-application (t_1), Post-application (t_2), and Post-enrollment (t_3). This design allowed both within and across time analysis of the data for defined student segments. Of particular research

interest was the change in the importance of selected evaluative criteria of the individual student. These evaluative criteria, based upon the previous research done on college choice, were considered major dimensions used in evaluating specific colleges.

Pre-Application Period Findings

1. Those prospective students with a "high" number of matches on what they wanted in a college and the actual characteristics of the college tended to apply more frequently.

2. The applied who matched on the descriptor, "type of college" generally ranked the criterion moderate to low in relative importance. The non-applied, who matched, considered the type of college relatively more important than did the non-applied who did not match.

3. Only a matched descriptor condition on the "type of college" was significantly different, with the applied matching more frequently.

4. The applied differed from the non-applied on the importance of the "type of college," "cost of college," and "extracurricular activities."

5. Those students indicating the college was their first choice tended to apply more frequently than those indicating the college as a second or lesser choice. Any rating other than first did not serve to predict application.

6. The best predictor of a prospective student's application was the combination of (a) the college designated

as his first choice, and (b) a stated preference for the "type of college" (a descriptor match with the college's characteristic).

This combination incorporates two market choice elements. First, the match on "type of college" differentiates the private and public college market classification. Second, the first choice designation indicates a preference within the private college market classification.

7. Enrollment was not predicted significantly better by the first choice designation compared to other choice designations, within the applied group.

Post-Application Period Findings

Socioeconomic Variables

1. Parents of the students applying to the college under study more frequently had had some college than did the parents of those not applying. This difference was most apparent within the SAT segment. More of the SAT applied students' parents had had some college, while more of the ACT applied students' parents had had no college.

2. The educational experience of the brothers and sisters of the ACT segment was different for the applied and the non-applied. The applied had relatively fewer brothers or sisters who had graduated from college. There was no difference within the SAT segment.

In general, the SAT segment appeared to have better educated parents and more brothers and sisters with college background than did the ACT segment.

3. Those prospective students from the ACT segment who applied to the college were more family or self oriented than socially (friend) oriented. This orientation pattern was not found in the ACT non-applied or the SAT segment.

4. No significant difference was found for the variables, (a) income, (b) value of home, and (c) mobility, between the ACT and SAT segments, or within the segments (applied and non-applied).

Goods Purchase Pattern

1. No significant difference was found between the ACT and SAT market segments or across the applied and non-applied behavior classifications with respect to their reported economic goods purchase behavior.

2. Those prospective students who were identified as "informed" in their economic goods purchase behavior also tended to be more informed about colleges, before their senior year of high school.

The carryover of goods purchase behavior, with reference to the degree informed, was most significant in the ACT market segment.

3. The "decisiveness" dimension of economic goods purchase behavior did not carry over to college choice behavior.

4. There was no difference in the importance of the information sources used for economic goods purchases between the ACT and SAT market segments.

Number of Colleges Visited, Considered, and Applied

1. There was no significant difference in the number of colleges visited or considered between the ACT and SAT segments, or across the applied and non-applied classifications within either segment.

2. The ACT applied compared with the ACT non-applied made application to a significantly greater number of colleges. There was no difference within the SAT segment.

Decision To Go To College

1. Over 60 percent of the prospective college students decided they would go to college before their sophomore year in high school (early deciders); and approximately 40 percent decided during or after their sophomore year in high school (late deciders).

2. No significant difference was found between the ACT and SAT segments, or across the applied and non-applied classification within segments on when they first decided to go to college.

College Information Level

1. The early deciders were less informed about "social opportunities" at various colleges than were the late deciders, prior to their senior year of high school. On other informational dimensions there was no difference in the two time-dependent classifications.

2. The applied were less informed about college "social opportunities," before their senior year in high school, than were the non-applied.

3. The applied were more informed about "fields of study," before their senior year in high school, than were the non-applied.

4. There was no difference between the applied and the non-applied on any other dimensions of college information.

5. The applied of the SAT segment were more informed about the "social opportunities" at colleges, than were the non-applied. There was no difference within the ACT segment.

6. The applied within the ACT segment were more informed about "fields of study" than were the non-applied. There was no difference within the SAT segment.

7. "Relatives and friends," "college sources," "location," and "campus visits" were reported as the major sources of information about colleges (72 percent of the responses).

8. In both the ACT and SAT segments, late deciders considered "high school classmates" as a more useful college information source than did the early deciders.

9. Within the ACT segment the applied found "high school classmates" only slightly useful as an information source; the non-applied found this source either very useful or not useful.

10. The ACT applied found college visits more useful than did the non-applied.

Intentions: College and Major

1. There was no difference in the degree of certainty about attending a specific college between or within the ACT and SAT segments.

2. The SAT segment non-applied were more certain about their college major than were the applied.

Most Informed and Intended College

1. Those prospective students who decided early to go to college less frequently expected to attend the college about which they were most informed, prior to their senior year of high school. The difference was more pronounced within the applied group. No difference was apparent between the ACT and SAT segments.

2. Those prospective students who were planning to attend a college other than the one about which they had been most informed considered more colleges before applying.

This difference was significant in the SAT segment, and among the non-applied of both the ACT and SAT segments.

Post-Enrollment Period Findings

The stability of the student's evaluative criteria structure was determined by correlating the rank order of importance of the criteria at two time periods. If there was significant correlation (alpha = .05) the evaluative criteria structure was considered to be stable. If there was not significant correlation, the structure was considered unstable.

1. There was no significant difference in the number of students with a stable evaluative criteria structure, within the ACT segment at $t_2 - t_3$ compared with $t_1 - t_3$. There was, however, an absolute increase in the number with a stable structure at $t_2 - t_3$.

   (a) The evaluative criteria structure was less stable for the ACT applied, $t_1 - t_3$, than for the non-applied.

   (b) There was no difference in the structural stability between the ACT and SAT segments, or within these segments, $t_2 - t_3$.

2. Those prospective students indicating they would most likely attend the college about which they were most informed, before their senior year in high school (matched) had more stable evaluative criteria than those not matched.

3. Whether the decision to go to college was made before their sophomore year (early deciders) or later, did not appear associated with the stable group more frequently than with the unstable group at $t_2 - t_3$.

4. Those early deciders who were also matched on the college most informed and college most likely to attend, had more stable evaluative criteria.

5. Those prospective students with stable evaluative criteria tended to apply to fewer colleges than did the unstable group. However, no difference was found in the number of colleges considered. The stable group screened the considered college set more closely, resulting in fewer applications. This suggests they were better able to make alternative reducing decisions, thus approaching the actual college choice earlier in the decision period.

6. Of those students actually enrolling in college, those who enrolled in a public college had more stable evaluative criteria, $t_1 - t_3$, than those who enrolled in a private college. This difference was not found in either the ACT or SAT segments at the $t_2 - t_3$ comparison.

Evaluative Criteria t_2: Scaled Values

1. The scaled values of evaluative criteria importance were not significantly different for the applied and non-applied, or the private and public college classifications.

2. Of those students applying to the college under study, the enrolled group considered: (a) "type of college" more important; (b) "field of study" less important; and (c) "extracurricular activities" less important, than did the not enrolled group.

Evaluative Criteria t_3: Scaled Values

1. The applied group considered "location" less important than the non-applied group.

2. The private college enrollees considered "size of college" more important and "cost of college" less important, than did the public college enrollees.

3. Those enrolling in the college under study considered the "student body composition" less important than those not enrolling.

Applied Group Analysis: Rank Order of Evaluative Criteria

In this section and the following section, significant correlation indicates the groups were alike in the rank order of importance of the evaluative criteria. A lack of correlation indicates the groups were not alike.

1. There was significant correlation across time periods, t_2 - t_3, for both the enrolled and the not enrolled groups' evaluative criteria rank order of importance.

2. The enrolled and not enrolled groups were significantly correlated on evaluative criteria at both t_2 and t_3.

3. The ACT enrolled group was not correlated with the SAT enrolled group at t_2; at t_3 the groups were correlated.

4. The ACT not enrolled and the SAT not enrolled groups were significantly correlated at both t_2 and t_3.

5. The ACT enrolled and not enrolled groups were significantly correlated at t_2 and t_3.

6. The SAT enrolled and not enrolled groups were significantly correlated at t_2 and t_3.

Non-Applied Group Analysis: Rank Order of Evaluative Criteria

1. There was significant correlation for both the private college and public college groups across time period, $t_2 - t_3$.

2. The private college and public college groups were significantly correlated at t_2; at t_3 the groups were not significantly correlated.

3. The ACT private college and SAT private college groups were not significantly correlated at t_2; at t_3 the groups were not significantly correlated.

4. The ACT public college and SAT public college groups were significantly correlated at both t_2 and t_3.

5. The ACT private college and public college groups were significantly correlated at t_2; at t_3 the groups were not significantly correlated.

6. The SAT private college and public college groups were not significantly correlated at t_2; at t_3 the groups were significantly correlated.

Selected College Characteristics Comparison

1. Within the ACT segment, those applying to the college under study enrolled in smaller colleges than did the non-applied group. The SAT segment showed no significant difference across the applied and non-applied groups on the size characteristic.

2. Significantly more of the applied of both the ACT and SAT segments received financial aid from their enrolled college than did the non-applied.

Significantly more of the non-applied received no financial aid from any source.

3. The enrolled group of the college under study was not significantly different from the not enrolled group on any source of financial aid.

4. Within both the ACT and SAT segments the applied differed from the non-applied on "type of college" and "cost of college" characteristics.

Hypotheses and Conclusions

Hypothesis I: A buying intention statement in terms of the prospective student's choice rating of a particular college, i.e., first, second, third choice, etc., will serve to predict application and enrollment more frequently than other data available to the college.

The prospective student's choice preference rating, first choice, was found to be the best single predictor of student applications. Preference ratings below first choice did not discriminate, i.e., a second choice not more likely to apply than a third choice, etc.

While the first choice preference rating more effectively predicted applications, it did not predict enrollment within the applied group significantly better than any other choice designation.

Hypothesis II: Identifiable market segments of prospective students interested in a particular college, such as, the ACT segment and the SAT segment will differ in their characteristics and behavior.

The two identifiable market segments, (1) the ACT segment, and (2) the SAT segment displayed significant associated differences both between segments and within segments across applied and non-applied, and other behavior determined classifications.

These segmental differences suggest the opportunity to develop specialized communication and recruitment strategies better oriented to meet student needs.

Hypothesis III: Purchase patterns as reported for the purchase of economic goods with respect to the level of information and degree of decisiveness will carry over to the college choice process.

Some support was found for the carryover of economic goods purchase patterns to the college selection process. Those prospective students who tended to be more informed

when purchasing economic goods were also more informed about colleges, relative to the uninformed economic goods purchase pattern group.

There was, however, no evidence that the more decisive economic goods purchasers were also more decisive in their college selection, relative to the indecisive group. This may be the result of no consumption advantage accruing to those who behave decisively, since college enrollment is available only at a preset time. Decisiveness may increase risk as fewer options would be available, e.g. apply to one rather than several colleges, with no additional payout. The lack of incentive for decisive behavior results in overt behavior which appears indecisive.

Hypothesis IV: Prospective college students will change their assessment of the relative importance of selected evaluative criteria over time.

Prospective college students do not have a structured set of evaluative criteria which remains constant over time. The evaluative criteria used in this study varied in rank order of importance for most of the individual respondents over time. The tendency was to become more highly correlated as the enrollment period (actual purchase) neared. However, the number of students correlated at $t_2 - t_3$ was not significantly different than the number at $t_1 - t_3$.

Many students never did develop consistency in the importance of the evaluative criteria used in the study. This appears to be consistent with the lack of a firm set

of evaluative criteria associated with extensive problem solving behavior.

Hypothesis V: Behavior determined segments of prospective college students will differ in the relative importance of selected evaluative criteria at different points in time.

Of the students applying to a college, the enrolled group and not enrolled group were generally in agreement on the rank order importance of evaluative criteria. The actual enrollment choice appears to be based on individual college differences, as assessed by the student, across the evaluative criteria.

More differences exist, with respect to the importance of the evaluative criteria, within the non-applied group when it was divided into private college enrolled and public college enrolled segments.

1. Over time the private college enrollees and the public college enrollees become less similar in the ordering of their evaluative criteria.

2. The private college enrollees were less homogeneous in their ordering of the evaluative criteria than were the public college enrollees.

The least change in the evaluative criteria structure was with that segment of students which was going to attend the college about which they were most informed, before their senior year in high school. This segment also applied to fewer colleges, but was not significantly

different in the number of colleges considered. Stability in the evaluative criteria structure and greater decisiveness were associated in this group. However, it cannot be concluded that the more consistent evaluative structure resulted in greater decisiveness. The opposite relationship could also have existed.

Recommendations for Future Studies

The exploratory nature of this study has generated findings and conclusions which suggest the need for additional research, both of a theoretical and empirical type.

For instance, the direction of affect associated with the stable (correlated) evaluative criteria structure found in the matched and early decider group was not determined in this study. This would seem to be a fruitful area for additional research.

From a specific college's view point, the methodology used in this study can reveal significant differences associated with various student segments. These differences can serve as a foundation for planning different tactical and strategic programs to more effectively serve the student group and the college's purpose. Exposed segmental differences also offer the opportunity for additional in-depth research.

For instance, in this study one student segment (ACT applied) tended to apply at significantly more colleges than did other segments. Research directed to

explaining this phenomenon might be advisable. Special post-application recruitment effort might be required for this segment to aid them in their actual college choice.

There is evidence that college marketing effort is becoming much more common and overt. This is particularly true among private colleges as they struggle for survival in a highly competitive market place. Additional research that will contribute to more effective and beneficial application of marketing technology to aid both students and colleges seems advisable. Marketing techniques, when applied to areas other than business, may be misunderstood and misapplied endangering the institutions and customers involved, as well as, the reputation of the discipline.

The basis for effective marketing planning is knowledge and understanding of the customer group to be served. This is no less true for educational marketing than other types of marketing, and in this study an attempt has been made to add to such knowledge and understanding with both the reported findings and the methodology employed.

APPENDICES

APPENDIX A

CHI SQUARE TABLES

TABLE A-1.--Frequency of Match of the Descriptors and the Evaluative Criteria.

Application State Classification	Matched	Not Matched	Total
Applied	97(90.9)	43(49.1)	140
Non-Applied	153(159.1)	92(85.9)	245
Total	250	135	385

Critical Value: Alpha = .05, d.f. = 1, X^2 = 3.84.

Calculated X^2 = 1.83.

TABLE A-2.--Frequency of Match of the Descriptors and the Evaluative Criteria by High and Low Range.

Application State Classification	High Range 7 - 5	Low Range 4 - 0	Total
Applied	13(9.5)	7(10.5)	20
Non-Applied	13(16.5)	22(18.5)	35
Total	26	29	55

Critical Value: Alpha = .05, d.f. = 1, X^2 = 3.84.

Calculated X^2 = 3.90.

TABLE A-3.--Sum of Rank Order Values and Mean Values of the Evaluative Criteria Variables.

Application State Classification	Type of College	Student Body	Location	Cost	Size	Field of Study	Extra-curricular
Applied (n=20)							
Sum of Rank Order	68	107	77	51	99	37	121
Mean ($\bar{X}$)	3.40	5.35	3.85	2.55	4.95	1.85	6.05
Non-Applied (n=35)							
Sum of Rank Order	118	178	151	105	189	61	176
Mean ($\bar{X}$)	3.37	5.09	4.31	3.00	5.40	1.74	5.03

Note: The lower the value the higher the rank order (importance) of the evaluative criterion.

TABLE A-4.--Type of College Variable: Frequency by Rank Order Without Regard to the Match or No Match Condition.

Application State Classification	Rank Order			Total
	1 - 2	3 - 4	5 - 7	
Applied	4(7.6)	13(7.6)	3(4.7)	20
Non-Applied	17(13.4)	8(13.4)	10(8.3)	35
Total	21	21	13	55

Critical Value: Alpha = .05, d.f. = 2, X^2 = 5.99.

Calculated X^2 = 9.63.

TABLE A-5.--Type of College Variable: Frequency of Match Condition and Rank Order Values.

Application State Classification	Match		No Match		Total
	Rank Order		Rank Order		
	1 - 2	3 - 7	1 - 2	3 - 7	
Applied	2(3.3)	10(4.7)	2(4.4)	6(7.6)	20
Non-Applied	7(5.7)	3(8.3)	10(7.6)	15(13.4)	35
Total	9	13	12	21	55

Note: Three cells have expected frequencies below five, violating the 20 percent rule of chi-square. However, because two of the cells were only slightly below five and the high calculated value of X^2, it was decided to use this value and make the test.

Critical Value: Alpha = .05, d.f. = 3, X^2 = 7.81.

Calculated X^2 = 12.77.

TABLE A-6.--Type of College Variable: Frequency of Match Condition.

Application State Classification	Descriptor Condition		Total
	Match	No Match	
Applied	12(8.0)	8(12.0)	20
Non-Applied	10(14.0)	25(21.0)	35
Total	22	33	55

Note: This format was used for testing each of the variables.

Critical Value: Alpha = .05, d.f. = 1, X^2 = 3.84.

Calculated X^2 = 5.02.

TABLE A-7.--College Choice Preference Rating: 1st, 2nd, and 3rd or Below.

Application State Classification	1st Choice	2nd Choice	3rd Choice or Below	Total
Applied	15(7.1)	6(8.5)	2(7.4)	23
Non-Applied	6(13.9)	19(16.5)	20(14.6)	45
Total	21	25	22	68*

*Note: Includes students who did not rank the evaluative criteria, but who did indicate a college choice preference rating.

Critical Value: Alpha = .05, d.f. = 2, X^2 = 5.99.

Calculated X^2 = 20.32.

TABLE A-8.--College Choice Preference Rating: 1st, and 2nd or Below.

Application State Classification	1st Choice	2nd Choice or Below	Total
Applied	15(7.1)	8(15.9)	23
Non-Applied	6(13.9)	39(31.1)	45
Total	21	47	68*

*Note: Includes students who did not rank the evaluative criteria, but who did indicate a college preference rating.

Critical Value: Alpha = .05, d.f. = 1, X^2 = 3.84.

Calculated X^2 = 19.21.

TABLE A-9.--College Choice Preference Rating: 1st and 2nd.

Application State Classification	1st Choice	2nd Choice	Total
Applied	15(9.6)	6(11.4)	21
Non-Applied	6(11.4)	19(13.6)	25
Total	21	25	46*

*Note: Includes students who did not rank the evaluative criteria, but who did indicate a college preference rating.

Critical Value: Alpha = .05, d.f. = 1, X^2 = 3.84.

Calculated X^2 = 10.30.

TABLE A-10.--College Choice Preference Rating: 2nd and 3rd.

Application State Classification	2nd Choice	3rd Choice	Total
Applied	6(4.3)	2(3.7)	8
Non-Applied	19(20.7)	20(18.3)	39
Total	25	22	47*

*Note: Includes students who did not rank the evaluative criteria, but who did indicate a college preference rating.

Critical Value: Alpha = .05, d.f. = 1, X^2 = 3.84.

Calculated X^2 = 1.75.

TABLE A-11.--College Choice Preference Rating for Students Matched on the Type of College.

	Matched on Type of College		
Application State Classification	1st Choice	2nd Choice or Below	Total
Applied	9(5.5)	3(6.5)	10
Non-Applied	1(4.5)	9(5.5)	12
Total	10	12	22

Critical Value: Alpha = .05, d.f. = 1, X^2 = 3.84.

Calculated X^2 = 9.06.

TABLE A-12.--Individual Parent's Educational Classification: Combined Group.

Application State Classification	No College	Some College	Total
Applied	60(69.1)	60(50.9)	120
Non-Applied	123(113.9)	75(84.1)	198
Total	183	135	318

Critical Value: Alpha = .05, d.f. = 1, X^2 = 3.84.

Calculated X^2 = 4.54.

TABLE A-13.--Individual Parent's Educational Classification: ACT Group.

Application State Classification	No College	Some College	Total
Applied	35(38.4)	31(27.6)	66
Non-Applied	71(67.6)	45(48.4)	116
Total	106	76	182

Critical Value: Alpha = .05, d.f. = 1, X^2 = 3.84.

Calculated X^2 = 1.13.

TABLE A-14.--Individual Parent's Educational Classification: SAT Group.

Application State Classification	No College	Some College	Total
Applied	25(30.6)	29(23.4)	54
Non-Applied	52(46.4)	30(35.6)	82
Total	77	59	136

Critical Value: Alpha = .05, d.f. = 1, X^2 = 3.84.

Calculated X^2 = 3.92.

TABLE A-15.--Brother's and Sister's Educational Classification: Combined Group.

Application State Classification	Attended or Now Attending College, but not Graduated	Graduated College	Total
Applied	28(23.1)	14(18.9)	42
Non-Applied	56(60.9)	55(50.1)	111
Total	84	69	153

Critical Value: Alpha = .05, d.f. = 1, X^2 = 3.84.

Calculated X^2 = 3.18.

TABLE A-16.--Brother's and Sister's Educational Classification: ACT Group.

Application State Classification	Attended or Now Attending College, but not Graduated	Graduated College	Total
Applied	15(10.2)	2(6.8)	17
Non-Applied	32(36.8)	29(24.2)	61
Total	47	31	78

Critical Value: Alpha = .05, d.f. = 1, X^2 = 3.84.

Calculated X^2 = 7.23.

TABLE A-17.--Estimated Value of Homes Within the Neighborhood of Residence (excluding rural and farm): Combined Group.

Application State Classification	$30,000 or Above	Below $30,000	Total
Applied	19(19.1)	17(16.9)	36
Non-Applied	32(31.9)	28(28.1)	60
Total	51	45	96

Critical Value: Alpha = .05, d.f. = 1, X^2 = 3.84.

Calculated X^2 = .01.

TABLE A-18.--Respondent Classification by the Number of Moves (last seven years): Combined Group.

Application State Classification	No Moves	One	Two or More	Total
Applied	29(29.2)	21(23.3)	7(4.4)	57
Non-Applied	50(49.8)	42(39.7)	5(7.6)	97
Total	79	63	12	154

Critical Value: Alpha = .05, d.f. = 2, X^2 = 5.99.

Calculated X^2 = 2.79.

TABLE A-19.--Vacation Trip Companion Preference: Applied Group.

Group Classification	Family or Self	Friends	Total
ACT	16(12.1)	16(19.9)	32
SAT	6(9.9)	20(16.1)	26
Total	22	36	58

Critical Value: Alpha = .05, d.f. = 1, X^2 = 3.84.

Calculated X^2 = 4.50.

TABLE A-20.--Vacation Trip Companion Preference: ACT Group.

Application State Classification	Family or Self	Friends	Total
Applied	16(11.9)	16(20.1)	32
Non-Applied	17(21.1)	40(35.9)	57
Total	33	56	89

Critical Value: Alpha = .05, d.f. = 1, X^2 = 3.84.

Calculated X^2 = 3.58.

TABLE A-21.--Descriptive Accuracy Associated With Purchase Pattern Descriptor Statement"C": Combined Group.

Application State Classification	Rank Order of Accuracy			Total
	1	2	3 or 4	
Applied	35(34.8)	9(12.7)	9(5.4)	53
Non-Applied	61(61.2)	26(22.3)	6(9.6)	93
Total	96	35	15	146

Critical Value: Alpha = .05, d.f. = 2, X^2 = 5.99.

Calculated X^2 = 5.44.

TABLE A-22.--College Informed Classification, Before Senior Year of High School: ACT Group.

Purchase Pattern 1st Ranked Descriptors	Number of Variables More Informed than Uninformed about Colleges		Total
	5 or less	6 or more	
Informed (B or C)	19(24.4)	55(49.6)	74
Uninformed (A or D)	10(4.6)	4(9.4)	14
Total	29	59	88

Critical Value: Alpha = .05, d.f. = 1, X^2 = 3.84.

Calculated X^2 = 11.23.

TABLE A-23.--Information Source Degree of Importance, Frequency Distribution for Sales People: Combined Group.

Application State Classification	Degree of Importance					Total
	1 or 2	3	4	5	6	
Applied	26(20.5)	21(27.4)	24(24.3)	15(14.9)	13(11.8)	99
Non-Applied	7(12.5)	23(16.6)	15(14.7)	9(9.1)	6(7.2)	60
Total	33	44	39	24	19	159

Critical Value: Alpha = .05, d.f. = 4, X^2 = 9.49.

Calculated X^2 = 8.17.

TABLE A-24.--Number of Colleges Visited Before Senior Year of High School, Frequency Distribution: Combined Group.

Application State Classification	Number of Colleges Visited						
	0	1	2	3	4	5 or More	Total
Applied	14(13.8)	13(10.8)	12(12.3)	7(8.8)	3(7.3)	11(6.9)	60
Non-Applied	22(22.2)	15(17.2)	20(19.7)	16(14.2)	16(11.7)	7(11.1)	96
Total	36	28	32	23	19	18	156

Critical Value: Alpha = .05, d.f. = 5, X^2 = 11.07.

Calculated X^2 = 9.39.

TABLE A-25.--Number of Colleges Applied, Frequency Distribution: ACT Group.

Application State Classification	Number of Colleges Applied				
	1	2	3	4 or More	Total
Applied	10(15.5)	8(7.6)	9(5.2)	6(4.8)	33
Non-Applied	29(23.5)	11(11.4)	4(7.8)	6(7.2)	50
Total	39	19	13	12	83*

*Note: Only those respondents applying to one college or more were included in the sample.

Critical Value: Alpha = .05, d.f. = 3, X^2 = 7.82.

Calculated X^2 = 8.78.

TABLE A-26.--Time the Decision to Attend College was Made: Applied Group.

Group Classification	Before Sophomore	Sophomore or After	Total
ACT Group	14(17.1)	13(9.9)	27
SAT Group	24(20.9)	9(12.1)	33
Total	38	22	60

Critical Value: Alpha = .05, d.f. = 1, X^2 = 3.84.

Calculated X^2 = 2.78.

TABLE A-27.--College Information Level Before Senior Year of High School Regarding "Social Opportunities": Combined Group Based Upon When They Decided to Attend College.

Decided to Attend College	Degree Informed 1	2	3	4	5	6	Total
Before Sophomore	3(5.1)	8(13.3)	23(27.2)	36(29.7)	16(13.9)	10(6.9)	96
Sophomore or After	5(2.9)	13(7.7)	20(15.8)	11(17.3)	6(8.1)	1(4.1)	56
Total	8	21	43	47	22	11	152

Critical Value: Alpha = .05, d.f. = 5, X^2 = 11.07.

Calculated X^2 = 18.13.

TABLE A-28.--College Information Level Before Senior Year of High School Regarding "Social Opportunities": Combined Group.

Application State Classification	Degree Informed				Total
	1 or 2	3	4	5 or 6	
Applied	9(11.4)	18(17.0)	26(18.6)	7(13.0)	60
Non-Applied	20(17.6)	25(26.0)	21(28.4)	26(20.0)	92
Total	29	43	47	33	152

Critical Value: Alpha = .05, d.f. = 3, X^2 = 7.82.

Calculated X^2 = 10.38.

TABLE A-29.--College Information Level Before Senior Year of High School Regarding "Fields of Study": Combined Group.

Application State Classification	Degree Informed		Total
	1 or 2	3 - 6	
Applied	36(29.0)	24(31.0)	60
Non-Applied	38(45.0)	55(48.0)	93
Total	74	79	153

Critical Value: Alpha = .05, d.f. = 1, X^2 = 3.84.

Calculated X^2 = 5.38.

TABLE A-30.--College Most Likely to Attend: Combined Group.

Application State Classification	Probability of Attendance		Total
	99 - 100	98 or less	
Applied	50(50.6)	8(7.4)	58
Non-Applied	80(79.4)	11(11.6)	91
Total	130	19	149

Critical Value: Alpha = .05, d.f. = 1, X^2 = 3.84.

Calculated X^2 = .07.

TABLE A-31.--College Major Most Likely: Combined Group.

Application State Classification	Probability of Major				
	100 - 99	98 - 91	90 - 76	Below 76	Total
Applied	18(22.2)	22(16.1)	10(8.9)	8(10.9)	58
Non-Applied	37(32.8)	18(23.9)	12(13.1)	19(16.1)	86
Total	55	40	22	27	144

Critical Value: Alpha = .05, d.f. = 3, X^2 = 7.81.

Calculated X^2 = 6.47.

TABLE A-32.--College Major Most Likely: SAT Group.

Application State Classification	Probability of Major			Total
	100 - 99	98 - 91	90 or Below	
Applied	6(9.0)	13(8.1)	7(9.0)	26
Non-Applied	15(12.0)	6(10.9)	14(12.0)	35
Total	21	19	21	61

Critical Value: Alpha = .05, d.f. = 2, X^2 = 5.99.

Calculated X^2 = 7.68.

TABLE A-33.--Time of Decision to go to College Across the Matched Condition of College Most Informed and College Most Likely to Attend: Combined Group.

Match Condition Classification	To Go To College Decision		Total
	Before Sophomore	Sophomore or Later	
Matched	39(44.3)	31(25.7)	70
Not Matched	37(31.7)	13(18.3)	50
Total	76	44	120

Critical Value: Alpha = .05, d.f. = 1, X^2 = 3.84.

Calculated X^2 = 4.14.

TABLE A-34.--Time of Decision to go to College Across the Matched Condition of College Most Informed and College Most Likely to Attend: ACT and SAT Applied Group.

Match Condition Classification	To Go To College Decision		Total
	Before Sophomore	Sophomore or Later	
Matched	14(18.1)	15(10.9)	29
Not Matched	16(11.9)	3(7.1)	19
Total	30	18	48

Critical Value: Alpha = .05, d.f. = 1, X^2 = 3.84.

Calculated X^2 = 6.25.

TABLE A-35.--Number of Colleges Considered Across the Matched Condition of College Most Informed and College Most Likely to Attend: Combined Group.

Match Condition Classification	Number of Colleges Considered				Total
	2 or less	3 - 4	5 - 6	7 or More	
Matched	17(11.8)	40(38.2)	10(13.5)	3(6.5)	70
Not Matched	3(8.2)	25(26.8)	13(9.5)	8(4.5)	49
Total	20	65	23	11	119

Critical Value: Alpha = .05, d.f. = 3, X^2 = 7.81.

Calculated X^2 = 12.59.

TABLE A-36.--Evaluative Criteria: Degree Correlated Across Time (ACT Group).

Time Periods	Correlated	Not Correlated	Total
$t_1 - t_3$	12(15.5)	18(14.5)	30
$t_2 - t_3$	19(15.5)	11(14.5)	30
Total	31	29	60

Critical Value: Alpha = .05, d.f. = 1, $X^2 = 3.84$.

Calculated $X^2 = 3.26$.

TABLE A-37.--Evaluative Criteria: Degree Correlated ($t_1 - t_3$) Across the Applied and Non-Applied Groups (ACT Group).

Application State Classification	Correlated	Not Correlated	Total
Applied	3(6.3)	12(8.7)	15
Non-Applied	13(9.7)	10(13.3)	23
Total	26	22	38

Critical Value: Alpha = .05, d.f. = 1, $X^2 = 3.84$.

Calculated $X^2 = 4.92$.

TABLE A-38.--Evaluative Criteria: Degree Correlated (t_2 - t_3) Across Matched Condition (Combined Group).

Matched Condition Classification	Correlated	Not Correlated	Total
Matched	30(25.4)	11(15.6)	41
Not Matched	6(10.6)	11(6.4)	17
Total	36	22	58

Critical Value: Alpha = .05, d.f. = 1, X^2 = 3.84.

Calculated X^2 = 7.50.

TABLE A-39.--Evaluative Criteria: Degree Correlated (t_2 - t_3) Across the College Attendance Decision Classification (Combined Group).

Decided to Attend College	Correlated	Not Correlated	Total
Before Sophomore	36(32.7)	17(20.3)	53
Sophomore or After	9(12.3)	11(7.7)	20
Total	45	28	73

Critical Value: Alpha = .05, d.f. = 1, X^2 = 3.84.

Calculated X^2 = 3.17.

TABLE A-40.--Evaluative Criteria: Degree Correlated (t_2 - t_3) and Matched Condition Across the College Attendance Decision Classification (Combined Group).

Decided to Attend College	Matched Condition: Same		Total
	Correlated	Not Correlated	
Before Sophomore	23(19.8)	4(7.2)	27
Sophomore or After	7(10.2)	7(3.8)	14
Total	30	11	41

Critical Value: Alpha = .05, d.f. = 1, X^2 = 3.84.

Calculated X^2 = 5.63.

TABLE A-41.--Evaluative Criteria: Degree Correlated (t_2 - t_3) and the Number of Applications (Combined Group).

Correlation State Classification	Number of Applications		Total
	1 or 2	3 or more	
Correlated	38(34.2)	8(11.8)	46
Not Correlated	17(20.8)	11(7.2)	28
Total	55	19	74

Critical Value: Alpha = .05, d.f. = 1, X^2 = 3.84.

Calculated X^2 = 4.33.

TABLE A-42.--Evaluation Criteria: Degree Correlated (t_2 - t_3) and the Number of Colleges Considered (Combined Group).

Correlation State Classification	Number of Colleges Considered				
	1 - 2	3	4 - 5	More Than 5	Total
Correlated	9(7.9)	15(16.4)	14(14.0)	7(6.7)	45
Not Correlated	4(5.1)	12(10.6)	9(9.0)	4(4.3)	29
Total	13	27	23	11	74

Critical Value: Alpha = .05, d.f. = 3, X^2 = 7.82.

Calculated X^2 = .72.

TABLE A-43.--Evaluative Criteria: Degree Correlated (t_2 - t_3) Across High and Low Test Scores (Combined Group).

Test State Classification	Correlated	Not Correlated	Total
High	22(20.7)	12(13.3)	34
Low	20(21.3)	15(13.7)	35
Total	42	27	69

Note: ACT score 22 or above, high classification; below 22, low classification. SAT score 1,000 or above, high classification; below 1,000, low classification.

Critical Value: Alpha = .05, d.f. = 1, X^2 = 3.84.

Calculated X^2 = .41.

TABLE A-44.--Evaluative Criteria: Degree Correlated (t_1 - t_3) Across the Private and Public College Classification (ACT Group).

Type College Classification	Correlated	Not Correlated	Total
Private	4(7.6)	14(10.4)	18
Public	12(8.4)	8(11.6)	20
Total	16	22	38

Critical Value: Alpha = .05, d.f. = 1, X^2 = 3.84.

Calculated X^2 = 5.62.

TABLE A-45.--Cost Criterion (t_2): Across the Applied and Non-Applied Classification (Combined Group).

Applied State Classification	Degree of Importance				Total
	1	2	4 - 5	More Than 5	
Applied	11(16.6)	18(13.7)	5(4.4)	6(5.3)	40
Non-Applied	30(24.4)	16(20.3)	6(6.6)	7(7.7)	59
Total	41	34	11	13	99

Critical Value: Alpha = .05, d.f. = 3, X^2 = 7.82.

Calculated X^2 = 5.72.

TABLE A-46.--Type Criterion (t_2): Across the Enrolled and Not Enrolled Classification (Applied Group).

Specific College Reference	Degree of Importance		Total
	1 - 2	3 - 6	
Enrolled	15(11.2)	8(11.8)	23
Not Enrolled	5(8.8)	13(9.2)	18
Total	20	21	41

Critical Value: Alpha = .05, d.f. = 1, X^2 = 3.84.

Calculated X^2 = 5.72.

TABLE A-47.--Field Criterion (t_2): Across the Enrolled and Not Enrolled Classification (Applied Group).

Specific College Reference	Degree of Importance		Total
	1	2 - 6	
Enrolled	10(14.0)	13(9.0)	23
Not Enrolled	15(11.0)	3(7.0)	18
Total	25	16	41

Critical Value: Alpha = .05, d.f. = 1, X^2 = 3.84.

Calculated X^2 = 6.66.

TABLE A-48.--Extracurricular Criterion (t_2): Across the Enrolled and Not Enrolled Classification (Applied Group).

Specific College Reference	Degree of Importance			Total
	1 - 2	3	4 - 6	
Enrolled	8(7.9)	4(7.9)	11(7.3)	23
Not Enrolled	6(6.1)	10(6.1)	2(5.7)	18
Total	14	14	13	41

Critical Value: Alpha = .05, d.f. = 2, X^2 = 3.84.

Calculated X^2 = 8.70.

TABLE A-49.--Location Criterion (t_3): Across the Applied and Non-Applied Classification (Combined Group).

Application State Classification	Degree of Importance				Total
	1	2	3	4 - 6	
Applied	7(11.4)	7(9.7)	18(12.3)	9(7.6)	41
Non-Applied	20(15.6)	16(13.3)	11(16.7)	9(10.4)	56
Total	27	23	29	18	97

Critical Value: Alpha = .05, d.f. = 3, X^2 = 7.82.

Calculated X^2 = 9.28.

TABLE A-50.--Size Criterion (t_3): Across the Private and Public College Classification (Combined Group).

Type of College Classification	Degree of Importance				Total
	1	2	3	4 - 6	
Private	14(10.3)	16(12.4)	14(14.9)	7(13.4)	51
Public	6(9.7)	8(11.6)	15(14.1)	19(12.6)	48
Total	20	24	29	26	99

Critical Value: Alpha = .05, d.f. = 3, X^2 = 7.82.

Calculated X^2 = 11.33.

TABLE A-51.--Cost Criterion (t_3): Across the Private and Public College Classification (Combined Group).

Type of College Classification	Degree of Importance				Total
	1	2	3	4 - 6	
Private	13(19.6)	13(12.9)	10(8.2)	15(10.3)	51
Public	25(18.4)	12(12.1)	6(7.8)	5(9.7)	48
Total	38	25	16	20	99

Critical Value: Alpha = .05, d.f. = 3, X^2 = 7.82.

Calculated X^2 = 9.83.

TABLE A-52.--Student Body Criterion (t_3): Across the Enrolled and Not Enrolled Classification (Applied Group).

Specific College Reference	Degree of Importance		Total
	1 - 3	4 - 6	
Enrolled	8(12.3)	15(10.7)	23
Not Enrolled	15(10.7)	5(9.3)	20
Total	23	20	43

Critical Value: Alpha = .05, d.f. = 1, X^2 = 3.84.

Calculated X^2 = 6.95.

TABLE A-53.--Size of College Actually Enrolled (Combined Group).

Application State Classification	Number of Students			Total
	Under 2,500	2,500 to 10,000	10,000 or Over	
Applied	27(18.0)*	8(13.4)	9(12.6)	44
Non-Applied	16(25.0)	24(18.6)	21(17.4)	61
Total	43	32	30	105

*Note: The enrollees of the reference college are included in this cell.

Critical Value: Alpha = .05, d.f. = 2, X^2 = 5.99.

Calculated X^2 = 13.26.

TABLE A-54.--Type of College Actually Enrolled (Combined Group).

Application State Classification	Type of College		Total
	Private	Public	
Applied	32(20.8)*	12(23.2)	44
Non-Applied	19(30.2)	45(33.8)	64
Total	51	57	108

*Note: The enrollees of the reference college are included in this cell.

Critical Value: Alpha = .05, d.f. = 1, X^2 = 3.84.

Calculated X^2 = 19.30.

TABLE A-55.--Cost of College Actually Enrolled (Combined Group).

Application State Classification	Cost Range			Total
	Under $2,000	$2,000 to $2,999	$3,000 and Over	
Applied	4(15.2)	12(13.2)	28(15.6)*	44
Non-Applied	33(21.8)	20(18.8)	10(22.4)	63
Total	37	32	38	107

*Note: The enrollees of the reference college are included in this cell.

Critical Value: Alpha = .05, d.f. = 2, X^2 = 5.99.

Calculated X^2 = 30.91.

APPENDIX B

QUESTIONNAIRES AND LETTERS

Room 423, Eppley Center
Michigan State University
East Lansing, Michigan 48824

Dear Prospective College Student:

You are probably about ready to operationalize your college choice decision, as Fall enrollment nears. How did you make your college choice? This is the research question I am studying, and I need your cooperation.

As part of my thesis research at Michigan State University, I am studying prospective college students to determine how they went about making their college choice decision. The enclosed questionnaire contains questions which are vital to this research. I hope you will take a few minutes and answer them.

The sample size used in this study is relatively small, but widely distributed geographically. The small sample size necessitates a high questionnaire return rate to make the study valid.

Your quick response will be greatly appreciated. Please answer all of the questions. The responses you give will be held strictly confidential and will be part of a statistical analysis only. Return the completed questionnaire in the addressed, stamped envelope provided.

Thank you for your assistance. Good Luck to you in your educational pursuit or in whatever you have chosen to do.

Sincerely,

L. E. Sheffield
Ph. D. Candidate
Michigan State University

Room 423, Eppley Center
Michigan State University
East Lansing, Michigan 48824

Dear Prospective College Student:

Two weeks ago you received a questionnaire entitled, College Choice Process Study. I am still counting on your willingness to participate in this study by completing and returning the questionnaire.

Summer is of course a busy time, and putting aside and forgetting to fill out a questionnaire is easy to do. However, your response is a very important part of this research study. Please take the 15 minutes or so required, fill out the questionnaire, and return it today.

Thank you for your cooperation.

Sincerely,

L. E. Sheffield
Ph. D. Candidate
Michigan State University

P.S. If you have already returned the questionnaire, thank you for your very prompt response.

COLLEGE CHOICE PROCESS STUDY

1. Please check the highest level of education attained by each of your parents. (check highest level)

Father	Mother	
_____	_____	Less than high school graduate
_____	_____	High school graduate
_____	_____	Post-secondary other than college
_____	_____	Some college
_____	_____	College degree
_____	_____	Some graduate school
_____	_____	Graduate degree

1a. If either parent attended college, check type of college.

Father private college____ public (state) college___ both types____

Mother private college____ public (state) college___ both types____

1b. If either parent attended college, (list)

Father's College Major(s)_____

Mother's College Major(s)_____

1c. If your father or mother attended college, list the school(s) and degree(s) if graduated.

Father_____/_____ _____/_____
Name of School Degree Name of School Degree

Mother_____/_____ _____/_____
Name of School Degree Name of School Degree

2. Father's current occupation or profession (list)

_____

Mother's current outside the home occupation or profession, if any, (list)_____

3. How many brothers and sisters do you have in each of the following school categories? (List the number in each category.)

Sisters	Brothers	
_____	_____	Not yet in school
_____	_____	In elementary school
_____	_____	In high school
_____	_____	In college as an undergraduate
_____	_____	Attended college, but did not graduate
_____	_____	Graduated college
_____	_____	Graduated college and now in graduate or professional school
_____	_____	Number not listed in one of the above categories

4. How many of your brothers, if any, attended or are now attending a private college? _____(give number)
How many of your sisters, if any, attended or are now attending a private college? _____(give number)

5. Rank the following four statements in the order of their accuracy, as they apply to you. (1 the most accurate to 4 the least accurate)

Rank

____ I usually buy whatever is most conveniently available, so I don't have to spend much time looking around or thinking about it.

____ I usually decide exactly what I want to buy, and then I go out and buy it.

____ I usually know what I want to buy, but I like to look around before I make the final decision.

____ I usually look around a lot, and based upon what is available, I decide which item to buy.

6. After making an important purchase I am usually: (Check the one which best describes your feelings.)

____ More satisfied than expected.

____ Satisfied as expected.

____ Satisfied, but less than expected.

____ Slightly dissatisfied.

____ Dissatisfied.

____ Very dissatisfied.

7. When you need information to make a buying decision, how important are the following sources? List additional sources you use. (Circle the appropriate number on each scale.)

1-Very Important 2-Important 3-Slightly Important
4-Slightly Unimportant 5-Unimportant 6-Very Unimportant

Information	Importance of Source
Advertising	1 2 3 4 5 6
Parents	1 2 3 4 5 6
Brothers or sisters	1 2 3 4 5 6
Sales people	1 2 3 4 5 6
Friends	1 2 3 4 5 6
Strangers who are familiar with the item involved	1 2 3 4 5 6
Relatives other than parents, brothers, or sisters	1 2 3 4 5 6
Special counselors or advisors	1 2 3 4 5 6
Teachers	1 2 3 4 5 6
Government sources	1 2 3 4 5 6
Product testing services	1 2 3 4 5 6
Others (please specify)	
_____	1 2 3 4 5 6
_____	1 2 3 4 5 6
_____	1 2 3 4 5 6

8. List what you consider to be the single most important purchase you have ever made _____

8a. How much did this item cost? _____

8b. Have you ever bought a more expensive item? Yes__ No__

If yes, what? _____

9. When did you first decide you would probably go to college? (check one)

____ Before sophomore year of high school
____ During sophomore year of high school
____ During junior year of high school
____ During senior year of high school
____ After graduating from high school
____ Have not decided yet

10. Before your senior year of high school, how many different colleges or universities had you visited?_____ (give number)

11. How would you describe your general level of information about the colleges you had been exposed to or knew about before your senior year of high school? (Circle the appropriate number on each scale.)

1-Very Well Informed 2-Well Informed 3-Fairly Well Informed
4-Fairly Uninformed 5-Uninformed 6-Very Uninformed

Information	Degree Informed
Cost of the colleges	1 2 3 4 5 6
Fields of study offered	1 2 3 4 5 6
Specific majors offered	1 2 3 4 5 6
Reputation of the colleges	1 2 3 4 5 6
Quality of the students	1 2 3 4 5 6
Quality of the faculty	1 2 3 4 5 6
Quality of the facilities	1 2 3 4 5 6
Social opportunities	1 2 3 4 5 6
Recreational opportunities	1 2 3 4 5 6
Admittance requirements	1 2 3 4 5 6

11a. If overall you were more informed about one specific college than you were about the other colleges, list the name of the college_____

11b. How do you explain the fact you were more informed about the college listed above (11a.)? _____

_____

12. How many colleges did you consider before actually deciding where to apply? _____(give number)

13. How important do you feel the following factors are in making a college choice? List any other factors you considered

Part A: Rank in the order of importance from the most important 1, to the least important 8, 9, 10, depending on how many additional factors you list.

Part B: Circle the appropriate number on each scale.

1-Very Important 2-Important 3-Slightly Important
4-Slightly Unimportant 5-Unimportant 6-Very Unimportant

Part A		Part B					
Rank	Choice Factor	Degree of Importance					
____	Size of college	1	2	3	4	5	6
____	Cost of college	1	2	3	4	5	6
____	Type of college (private, public, 2 or 4 year)	1	2	3	4	5	6
____	Student body composition (coed, etc.,)	1	2	3	4	5	6
____	Location of college	1	2	3	4	5	6
____	Field of study	1	2	3	4	5	6
____	Extracurricular activities	1	2	3	4	5	6
____	Specific major	1	2	3	4	5	6
	Others (please specify)						
____	_____	1	2	3	4	5	6
____	_____	1	2	3	4	5	6
____	_____	1	2	3	4	5	6

14. When seeking information about colleges, how useful were the following information sources? List the additional information sources to which you were exposed. (Circle the appropriate number on each scale.)

Information Source	Degree of Usefulness				
Father	1	2	3	4	5
Mother	1	2	3	4	5
Other family members	1	2	3	4	5
Friends in college	1	2	3	4	5
High school classmates	1	2	3	4	5
College counselors	1	2	3	4	5
Other college representatives	1	2	3	4	5
Radio	1	2	3	4	5
Television	1	2	3	4	5
Newspapers	1	2	3	4	5
College provided materials	1	2	3	4	5
College visits	1	2	3	4	5
High school teachers	1	2	3	4	5
High school counselors	1	2	3	4	5
Others (please specify)					
_____	1	2	3	4	5
_____	1	2	3	4	5
_____	1	2	3	4	5

15. List the following information about the colleges to which you applied.

Name of College	State	Month Applied	Check if Accepted	Miles from Home	Private or State	2 or 4 Year

16. Which college are you most likely to attend this fall?

_____
Name of college

16a. At this time, how certain are you of attending the above college this fall? (check one)

____ less than 50 percent certain
____ 50 to 75 percent certain
____ 76 to 90 percent certain
____ 91 to 98 percent certain
____ 99 to 100 percent certain
____ definitely not going to college

16b. What factors have caused you to prefer this college? Please explain. _____

_____

16c. What limitations or drawbacks do you associate with attending this college? Please explain. _____

_____

17. If you do plan to go to college this fall, what is your intended major? _____ (name of major)

17a. How certain are you that this is what you will major in? (check one)

____ less than 50 percent certain
____ 50 to 75 percent certain
____ 76 to 90 percent certain
____ 91 to 98 percent certain
____ 99 to 100 percent certain

18. What is your best estimate of your parents' total income before taxes in 1973? (Check the appropriate range.)

____ less than $5,000
____ $5,000 to $7,499
____ $7,500 to $9,999
____ $10,000 to $14,999
____ $15,000 to $19,999
____ $20,000 to $24,999
____ $25,000 to $49,999
____ $50,000 and over

19. Which of the following statements best describes your parents' place of residence? (Check the most appropriate.)

____ Live on a farm or in a rural area
____ Live in an apartment
Live in their own home in a residential neighborhood where the value of most homes is about:
____ $100,000 or more
____ $50,000 to $99,999
____ $30,000 to $49,999
____ $15,000 to $29,999
____ below $15,000

20. Indicate the number of moves (changes of residence) you have made in the last seven years according to the following distance categories.

Number of moves made:

____ less than 5 miles
____ over 5 miles, but not more than 20 miles
____ over 20 miles, but not more than 100 miles
____ over 100 miles, but not more than 250 miles
____ over 250 miles, but not more than 500 miles
____ over 500 miles

21. If you had the choice, would you prefer taking a vacation trip: (check one)

____ with your family
____ by yourself
____ with friends

Room 423, Eppley Center
Michigan State University
East Lansing, Michigan 48824

Dear College Student:

Several weeks ago you participated in the College Choice Process Study. Your cooperation was greatly appreciated.

Now I am completing the final phase of that research. This involves the collection of data on where you are attending college, or what you have chosen to do rather than go to college.

The enclosed questionnaire is short and should take less than five minutes to complete. Please fill it out, as instructed, and return it in the stamped envelope provided. An accurate response from everyone in the sample is needed to make the study valid.

I appreciate your assistance in my thesis research. A summary sheet of the study findings will be sent to you upon your request. Please indicate your interest in receiving a copy at the end of the questionnaire.

Thank you for your quick response, and Good Luck in your current activities.

Sincerely,

L. E. Sheffield
Ph. D. Candidate
Michigan State University

COLLEGE CHOICE STUDY FOLLOW-UP

Section I

1. Are you now enrolled in college? (check one) Yes__ No__

   1a. If Yes, please turn to Section II of the questionnaire beginning on the following page, and answer the remaining questions.

   1b. If No, please explain why you chose not to enroll in college this fall.

   Explain_____

   _____

   _____

2. Do you plan to enter college at some later date? Yes__ No__

   2a. If Yes:

   When_____
   (date)

   Where_____
   (College) (city) (state)

   2b. What are you currently doing (working, traveling, unemployed, etc.)?

   Explain_____

   _____

   _____

   If you are not enrolled in college, you do not need to answer the questions in Section II.

   Please return only this page of the questionnaire in the return envelope.

   Thank you for your cooperation!

If you would like a summary of the findings, list your name and mailing address below.

Section II--For those answering Yes to question number one.

3. Please list the name and location of the college you are now attending.

_____
(college) (city) (state)

3a. How many miles is the college from your home town?

_____
(miles)

4. What were the most important reasons for choosing your present college over the other colleges you considered?

List and briefly explain.

a. _____

b. _____

c. _____

5. Please check the appropriate classification data about your college and your college status.

a. Type of college: private__; state__. 2 year__; 4 year__.

b. Size of the student body: under 1,000__; 1,000 to 2,499__; 2,500 to 4,999__; 5,000 to 10,000__; over 10,000__.

c. Cost (tuition, fees, room and board) per academic year: under $1,500__; $1,500 to $1,999__; $2,000 to $2,499__; $2,500 to $2,999__; $3,000 to $3,499__; $3,500 or more__.

d. Residency classification: in-state student__; out-of-state student__; neither classification__.

e. Outside Financial aid: some from parents__; some from the college__; some from other sources__; none being received__.

6. What is your present college major? List_____
(major)

6a. Why did you select this major? _____

_____

7. How important were the following factors in the selection of your present college?

   Part A: Rank in the order of relative importance from 1, first in importance to 8, last in importance.

   Part B: Circle the appropriate degree of absolute importance on each scale.

   1-Very Important 2-Important 3-Slightly Important
   4-Slightly Unimportant 5-Unimportant 6-Very Unimportant

Part A		Part B					
Rank	Choice Factor	Degree of Importance					
____	Size of college	1	2	3	4	5	6
____	Cost of college	1	2	3	4	5	6
____	Type of college (private, public, 2 or 4 year)	1	2	3	4	5	6
____	Student body composition (coed, etc.)	1	2	3	4	5	6
____	Location of college	1	2	3	4	5	6
____	Field of study	1	2	3	4	5	6
____	Extracurricular activities	1	2	3	4	5	6
____	Specific major	1	2	3	4	5	6

8. If you were starting the college selection process all over again, what would you do differently?

   Please explain_____

   _____

   _____

   _____

   Thank you for your cooperation!

If you would like a summary of the findings, list your name and mailing address below.

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