INSTITUTIONAL POSITIONING AND GEOGRAPHIC MARKET SEGMENTATION APPLIED TO A SCHOOL OF BUSINESS AT A FOUR-YEAR PUBLIC COLLEGE

By

Marilyn J. Keigley

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ABSTRACT

INSTITUTIONAL POSITIONING AND GEOGRAPHIC MARKET SEGMENTATION APPLIED TO A SCHOOL OF BUSINESS AT A FOUR-YEAR PUBLIC COLLEGE

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The research involved measuring images of 472 Ferris State College freshman business students toward Ferris, 11 competitors, and an ideal college. Twenty-three semantic phrases, such as great/boring dorm life and suitable/unsuitable degree programs, reduced to five factors (academic, social, size, clubs, and cost) using factor analysis and varimax rotation. Factor scores for each college were plotted on positioning maps.

Three research questions were developed. Positioning differences were examined between (a) Ferris and each competitor, (b) five Michigan geographic segments, and (c) Ferris and an ideal college.

MANOVA on five factors at the .05 level revealed that Ferris differed from all competitors except Oakland University. Academically, most colleges were perceived as similar but were positioned fairly distant from the ideal. Davenport College and the University of Michigan were closer to the ideal. Socially, a poor position resulted for Ferris, primarily due to poor ratings on the variables dorm life, sports, active campus, and location. Ferris and

the ideal college were perceived as equal only on the size factor. Ferris and several competitors appeared close to the ideal on cost.

The clubs factor was unique, but not surprising since respondents were business students. Two variables, available clubs and business clubs, loaded moderately on the social factor, but highly as a separate factor, .6688 and .4953, respectively. Ferris was positioned close to the ideal, along with many of the large universities.

MANOVA on five factors and five geographic regions was not significant at the .05 level for Ferris. However, for practical purposes, positions were examined, as the probability level was .07. ANOVA on the size factor was significant at the .05 level. Respondents from the highly populated southeast region perceived Ferris as being smaller than did students from other regions.

Recommendations included improving the social image of Ferris, using the factor method for future positioning research, and analyzing more segments such as high school students and college juniors to determine changing images at different levels. The factor method was useful for disclosing specific strengths and weaknesses within the competitive marketplace. This attribute-based method compliments market-niche theory, since the goal of positioning is to find unique differences.

To the students of Ferris.

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CHAPTER I

INTRODUCTION

Institutions of higher education today are experiencing increasing economic pressures, declining enrollments, and increasing competition from various types of educational institutions and learning centers. The number of high school graduates peaked in 1977 at 3.2 million and declined to 2.8 million in 1983 (Kotler & Fox, 1985). The extent of enrollment decline is estimated to be 15% nationally between 1983 and the early 1990s (Breneman, 1983). However, after 1994, a new mini-bulge of 18 year olds will emerge, according to Wharton (1983).

The future of college enrollment may not be as gloomy as first supposed. One changing demographic trend that has softened the blow of fewer incoming students is that the average age of college students is increasing, indicating that more nontraditional students are now attending college. New markets such as foreign students and older adults are being tapped. However, the primary market of incoming students is still freshmen who enter college directly from high school.

To continue economic operation of their facilities, colleges are also branching out and offering off-campus courses in many communities. Thus, competition for students has increased not only

within traditional geographic boundaries, but also in distant communities. Furthermore, many businesses are now offering their own educational services.

In response to these pressures placed on higher education institutions, administrators have turned to the use of marketing techniques. Colleges have now reached the marketing stage corporations experienced from 1950 to 1965, whereby companies adopted a consumer orientation to survive fierce competitive environments (McCarthy, 1984). Effective marketing in higher education means designing and improving programs that match the target market's needs and wants. As Kotler and Fox (1985) explained, "these institutions analyze their environment, markets, and competition; assess their existing strengths and weaknesses; and develop a clear sense of mission, target markets and market positioning."

Statement of the Problem

Declining enrollments, emphasis on the information society, competition for new markets, consumerism, unemployment, uncertainties about state and federal financial support, the need for lifelong learning, and the need for program development are all reasons for using marketing in the institutional planning process. Nationally, potential enrollment may decrease by 20% between 1980 and 1990. But regional areas such as the Midwest may see up to a 30% to 40% decrease in enrollment (Zammuto & Krakower, 1983).

Many admissions personnel hold a pessimistic view of enrollment decline. This view has been referred to as the population ecology

model; as the number of students decreases, college enrollments will also decrease (Zammuto & Krakower, 1983). A more optimistic view involves the use of strategic management planning, which includes the application of marketing research. "In effect, organizations are able to manipulate the impact of changing environmental conditions by the way they position themselves within that environment" (Kotler & Murphy, 1981). Marketing involves selecting target markets, rather than being all things to all people. If an institution imposes a program not matched to client needs, that program will fail (Kotler & Fox, 1985).

Higher education used to be a homogeneous conglomerate, and positioning occurred by accident. Colleges and universities can no longer afford not to differentiate. Everything about an institution talks--its people and its activities. Images about an institution are even developed by people who have never seen the institution. By researching the competitive environment of a group of institutions, an institution can find a comparative differential advantage to distinctly position itself in today's competitive marketplace (Topor, 1986).

Purpose of the Study

The purpose of the study was to determine the position of Ferris State College within the competitive academic marketplace, as seen by first-time Ferris State College freshmen. The study was designed to reveal images held by freshmen enrolled in a business degree program during their first year of college.

The first objective was to determine the market position of a School of Business among its major competitors. The second objective of the study was to determine whether positioning differences existed in five geographic segments of the Michigan market of colleges offering business degrees. The third objective was to determine freshmen's ideal perceptions of a college and to compare that ideal to the actual perceived position of the college.

The market segment of first-time freshmen was chosen for study because of the decreasing pool of high school graduates. Also, first-time freshmen represented the largest incoming group of students accepted for enrollment in business at Ferris State College. By viewing the freshman segment of the market, the position of Ferris State College was examined at a level close to the transitional stage between high school and college.

The primary competitive environment included up to ten colleges according to the Ferris State College ACT Enrolled-Nonenrolled Report (1985) and student transfer data from the School of Business counselors. All ten colleges were located within Michigan. According to Kotler and Fox (1985), an institution should look at its position in relation to its relevant competitors, not every college.

In positioning analysis, key attributes that a public uses to compare institutions need to be found (Kotler & Fox, 1985). Twenty-three variables were identified: (a) through ACT reports of what students consider important in college choice, (b) from a comprehensive school-wide study on satisfaction level of college services (Dahlquist & Parker, 1986), and (c) from a content analysis

of other higher education positioning questionnaires (Abrahamson, 1984; Cook & Zallocco, 1983; Litten, 1979; Turner, 1982). The resulting 23 variables were arbitrarily categorized into the following six subgroups:

ACADEMIC (faculty)--quality and advising

ACADEMIC (programs)--selection, suitability, easy/hard, unique, and career oriented

PHYSICAL CAMPUS--size, safety, beauty, and location

FINANCIAL--cost of college and available financial aid

ADMINISTRATIVE SUPPORT--admissions, class size, business clubs, and job placement

SOCIAL--friendly campus, dorm life, active campus, available clubs, spectator sports, and participant sports

Research Questions

With the purpose of determining institutional positions in the educational marketplace, using the variables listed above, the following research questions were developed.

1. What was the institutional position of the Ferris State College School of Business among its competitors as perceived by first-time freshmen attending Ferris State College, according to factored variables?

2. What were the differences, if any, in the position of the Ferris State College School of Business among its competitors, according to geographic segments in Michigan, as perceived by first-time Ferris State College freshmen, according to factored variables?

3. What were the differences, if any, of an ideal college as perceived by first-time Ferris State College freshmen compared to the perceived position of the institution, according to factored variables?

Methodology of the study. The population was defined as first-time freshman School of Business students. There were 823 freshman business students enrolled winter term during the school year 1986-87. A sample of 503 was drawn from the population of freshman business students. Factor analysis was used to reduce the 23 variables to several constructs and to generate factor scores for perceptual mapping. The .05 level of significance was used in the study for factor analysis and MANOVA. MANOVA was used to determine differences in factored dimensions for competitors, geographic regions in Michigan, and ideal college perceptions.

Practical Value of the Research

The value of the research to the college being studied included the potential to make competitive gains in course offerings and enrollment within the state. Enrollment in the School of Business was approximately 4,000. The effect of a 15% reduction in enrollment (or even up to 30% to 40% according to Zammuto & Krakower, 1983) over the next seven years would be of serious consequence to the School of Business. The outcome of enrollment losses would be retrenchment of faculty and elimination of some programs. Since very few colleges were conducting formal research, the results could provide insights for improving the position of Ferris State College. Results could be

used in numerous administrative activities such as recruiting, retaining students, pricing, setting goals, or developing new programs. The instrument and research method could also be used for other programs with enrollment stress.

Theoretical Value of the Research

Factor analysis, semantic phrases, the freshman School of Business student segment, and geographic segments were combined to form a unique research design to further advance the area of positioning analysis in higher education. Earlier studies concentrated on multidimensional scaling (MDS), a nonattribute-based method (Litten, 1979; MacLachlan & Leister, 1975; Meyer, 1980; Sternberg & Davis, 1978; Terrell, 1981). Perceptual maps are difficult to interpret using MDS, since the researcher must determine the differentiating dimensions. More recently, attribute-based methods, using Likert or semantic differential scales, have been used to generate up to six dimensions for mapping. Factor analysis has been the main statistical method used for attribute-based studies (Maguire & Lay, 1981; Sternberg & Davis, 1978; Turner, 1982).

Factor analysis is a multivariate technique that provides mapping dimensions from predetermined rating scales. MDS appears to be more useful to large universities where academic prestige and size end up being the constructs used for perceptual mapping. If differentiation and market segmentation are to occur, dimensions other than academic prestige and size should be measured. By using

attribute methods, selected variables unique to an institution can be used to construct perceptual maps.

The use of semantic phrases allows the researcher to attach a unique adjective to each variable being measured. Using the Likert scale, variables are generally measured using a single rating scale, such as excellent to poor. Specific descriptors may more appropriately describe a variable, such as "exciting spectator sports" or "high-quality faculty." Only one study was found that used factor analysis with the semantic scale. Sternberg and Davis (1978) used factor analysis and simple bipolar adjectives (good-bad, strong-weak, and fast-slow, for example) following a study using the MDS method. Semantic phrases were used by Stuckman-Johnson and Kinsley (1985) and Huddleston (1982), but the statistical methods used were analysis of variance and t-tests, respectively. Perceptual maps were not used in either of these two studies.

No other studies were found that focused on students from a single curriculum, such as business. Positioning studies in the past in higher education have included students from all fields of study. Focusing on a specific market segment such as business students, and freshmen in particular, can offer insights for future strategic planning. Variables such as faculty, programs, social atmosphere, and career oriented are viewed by a homogeneous group. Promotional strategies can be targeted to a specific audience. Also, services can be adjusted as a result of the study.

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used geographic segmentation to view different perceptions of students from the East Coast to the Midwest (Litten, 1979).

In summary, surveying students from a specific school and analyzing various geographic segments provided a focused view of student perceptions within the educational marketplace. Specific marketing strategies can be developed from examining this target market. Factor analysis provided a method that allowed the researcher to use specific variables for eventual mapping. Using the attribute-based method of semantic phrases, as opposed to the attribute-based method of the Likert scale, permitted a refinement of each variable that was measured.

Definition of Terms

Competitive positioning. The art of developing and communicating meaningful differences between one's offerings and those of competitors serving the same target market (Kotler & Fox, 1985). A unique niche is identified to differentiate a college from the competition.

Educational marketplace. Colleges in Michigan that offer two-year or four-year degrees in business.

Factor analysis. A statistical method that attempts to find several sets of linear combinations from one large set of variables.

First-time freshmen. Students who are usually 18 or 19 years old and enter college directly or soon after high school.

Image. The aggregate, or sum, of feelings, beliefs, attitudes, impressions, thoughts, perceptions, ideas, recollections,

conclusions, and mind sets someone has about an institution, its components, or its products (Topor, 1986).

Institutional position. The position of a college among its relevant competitors as perceived by a specific public or submarket.

Market. A group of people who have an actual or potential interest in a product or service and the ability to pay for it (Kotler & Fox, 1985).

Marketing. The process by which organizations undertake activities to facilitate the identification, development, and exchange of products and services to satisfy customers. (It involves a major emphasis on the development of product, price, place, and promotion strategies.)

Marketing concept. A customer-oriented approach to determining the needs and wants of target customers and delivering the appropriate product or service.

Multidimensional scaling. Analysis using the proximity between objects to produce a geometric representation of their relationship. (Maps are generated from nonattribute-based data such as similarity-dissimilarity scales and preference rankings of all sets of colleges being studied.)

Perceptual map. A two-dimensional or three-dimensional grid that shows the perceptions held by a market segment of several competing colleges.

Position. Describes how a group perceives a college in relation to competing colleges.

Product. Anything that can be offered to a market for attention, acquisition, use, or consumption that might satisfy a want or need (Kotler & Fox, 1985). It includes the full range of services offered by colleges, such as programs, sports, dorm life, and ideas.

Segment. A homogeneous submarket, such as freshmen, a specific school, or geographic location.

Semantic differential. A five- or seven-point scale used in attitude measurement that uses bipolar adjectives or phrases.

Target market. A group of customers with similar characteristics or needs.

Delimitations

Several delimitations were established in this study of positioning in the educational marketplace. The target population was limited to the market segment of first-time freshmen. This segment of incoming students is extremely valuable when forecasting future enrollment in the School of Business. Other segments such as alumni, transfer students, upperclassmen, parents, politicians, and the community could be subjects of future research.

The study was limited to the segment of School of Business students. Although the School of Business is the largest school on the campus of Ferris State College, it is a more homogeneous segment than all students. Finally, the study was limited to the school year 1986-1987.

Limitations

When using the results from this study, two limitations need to be mentioned. The results reflect only the image of Ferris State College students, but measure images of other colleges. The results may have been different had freshman students from other colleges also been surveyed. The second limitation involves the short length of time freshmen had to form an image of Ferris State. Students were interviewed at the beginning of winter term of their freshman year. Students who attended Ferris for a longer time period may have had different images of Ferris State College.

Overview

This chapter introduced the problem area of positioning in higher education and the reason for the study. Chapter II contains a review of selected literature on marketing in higher education, market positioning, positioning research in higher education, and methods used in positioning research. Different approaches and options to positioning analysis are discussed in these subsections of methods used in positioning research: sample population and market segments, factor analysis and discriminant analysis, attitude scales, number of categories used for attitude scales, and semantic differential scales.

The methodology of the study is explained in Chapter III. The findings of the study were summarized primarily using two-dimensional maps and are presented in Chapter IV. Institutional positions of the educational marketplace for business freshmen were presented using

all combinations of dimensions generated from factor analysis. Also included in the findings were perceived positions by geographic segments of Michigan and positions of students' ideal college compared to actual college positions. Multivariate analysis of variance was used to test differences in competitors, geographic segments, and ideal college perceptions compared to actual perceptions. The final conclusions regarding current perceptions of School of Business first-time freshmen in the educational marketplace appear in Chapter V.

CHAPTER II

SELECTED LITERATURE REVIEW

Marketing in Higher Education

Many authors have agreed that marketing can be very beneficial to institutions of higher education (Hossler, 1984; Kemerer, 1982; Kotler & Fox, 1985; Muston, 1985). Hossler (1984) stated that the university is subject to the same principles of behavior as nonprofit organizations, even corporations. Many nonprofit and service organizations are now using marketing techniques to operate more effectively. The shift of a marketing emphasis toward service organizations such as higher education parallels the shift from an industrial society to an "information" society, as described by Naisbitt (1982). Drucker (1974) also commented on the shift in emphasis to service industries such as banks, hospitals, and universities.

Marketing has entered higher education through admissions offices and institutional planning services. Marketing in higher education has also been called enrollment management. Some of the marketing techniques being used include segmentation, marketing research, forecasting, image studies, positioning, and product development (Hossler, 1984). For example, ACT data are now being used by many colleges to locate and attract new markets.

Institutional research departments are providing colleges with specific information regarding such items as potential markets, demographics of market segments, program feedback, copy content analysis, and enrollment forecasts.

Colleges and universities have relied on quantitative growth for many years. Colleges are now being forced to examine programs, markets, and services to increase or maintain enrollments. Muston (1985) summed up the new line of thinking:

> No longer will institutions of higher education rely on quantitative growth as a measure of institutional quality. Growth will increasingly reflect qualitative dimensions related to the ability of institutions to adapt to changing economic, social, and client needs and expectations.

The level of marketing activity varies throughout higher education. Some institutions are applying only the selling and promotional functions of marketing. Examples include giving away frisbees during spring break, sending birthday cards to high school students, holding social gatherings for accepted but not yet enrolled students, increasing radio advertising, running ads in Seventeen magazine, and adding more recruiters.

A few colleges are making a full-fledged effort to make use of marketing tools. Marketing applications should include the use of pricing, developing products, aligning the mission and goals, segmenting, positioning, researching image, forecasting, and developing markets. According to Kotler and Fox (1985), a real marketing effort is not being accomplished without employing the marketing research function.

Application of the marketing research function to higher education is vital for locating, understanding, and servicing customers. However, many colleges are simply increasing their advertising and number of recruiters (Muston, 1985; Noble, 1986). According to a study of 1,463 institutions (AACRAO and the College Board, 1980), about 50% did not conduct any marketing research. Another 39% of colleges surveyed conducted some informal marketing research. In another study of 720 admissions officers, results showed that only 46% of colleges had developed a specific marketing plan (Blackburn, 1979).

Market Positioning

Institutional positioning is one marketing research tool that colleges are only beginning to use. Positioning involves carving out a unique niche to separate one brand or company from another. It involves understanding the strengths and weaknesses of one's own organization and the strengths and weaknesses of the competition. Positioning of a college is in the mind of the consumer and can be real or imagined (Gaither, 1979). Positions may be perceived differently by such diverse publics as high school students, college students, alumni, faculty, the community, parents, mass media, suppliers, trustees, foundations, and government officials.

Corporate examples of positioning show how a unique niche can be created. To position against major car companies, Volkswagen went after the small car market with the slogan, "Think small." Avis competed with Hertz by admitting they were number two and using the

campaign "We try harder." In the soft drink market, 7-Up carved out a niche in the "uncola" category (Ries & Trout, 1986).

According to Ries and Trout (1986), dominant positions are often held in the minds of consumers because a product (or college) was first to arrive on the market. Therefore, the older, larger, and well-established colleges often hold dominant positions by virtue of their longevity and ability to continue to satisfy the consumer.

Higher education institutions can carve out a unique market in many different ways. Possibilities include low price, high reputation, unique programs, vocational orientation, social atmosphere, small informal campus, strong sports program, research concentration, high job placement, or times and locations of courses. Examples of specific positioning studies in higher education are included in the following section.

Positioning Research in Higher Education

Specific Research

MacLachlan and Leister (1975) used nonmetric multidimensional scaling to determine the position of Pacific Lutheran University among 12 colleges in Washington. Similarity ratings using a nine-point scale resulted in students rating 66 pairs of colleges. Using the statistical package TORSCA-8, the researchers plotted 12 colleges in four quadrants on a two-dimensional map. Dimensions on the perceptual map were not labeled in this study. Using a second questionnaire with a nine-point scale, respondents rated each college

on six characteristics. The researchers used PREFMAP to generate and simultaneously portray six vectors on the two-dimensional map.

Two samples, 64 Pacific Lutheran University students and 30 members of the League of Women Voters, were used for this study. Resulting multidimensional scaling positions were very similar for both samples. However, vector variations revealed that Pacific Lutheran University students rated Pacific Lutheran University highest in academic quality, while the League of Women Voters rated the University of Washington highest in academic quality. Although the samples were small, repositioning proposals included suggestions such as opening a high school Early College and establishing quality cooperative programs in business, education, and nursing.

Sternberg and Davis (1978) also used nonmetric multidimensional scaling in a study of Yale's institutional position among 17 primary competitors. KRUSKAL and hierarchical clustering programs were used for the statistical analysis. The sample consisted of 382 high school students and 199 Yale undergraduates. Respondents rated all 17 colleges, which resulted in 136 pairs of colleges being rated on a seven-point similarity-dissimilarity scale.

Size and academic prestige were assigned as labeling dimensions for the resulting perceptual map of the 17 colleges, using nonmetric multidimensional scaling. A second method, hierarchical clustering, was applied to group colleges together that might have common characteristics. Colleges one might expect to be similar were clustered together: Yale and Harvard, Northwestern and the

University of Michigan, Stanford and the University of California at Berkeley, and Columbia University and the University of Pennsylvania.

A second study was conducted using attribute-based data to compare the results of the attribute-based method with the multidimensional scaling method. A total of 100 volunteer undergraduates participated in this portion of the study. Semantic differential scales such as fast-slow, beautiful-ugly, wide-narrow, strong-weak, and valuable-worthless were analyzed using factor analysis. Colleges factored into groups that were highly similar to the multidimensional scaling and clustering method. However, additional meaning was deduced from the use of adjectives. For example, adjectives such as loud, relaxed, wide, ferocious, brave, and strong suggest that Northwestern and the University of Michigan had a strong athletic emphasis, but were less rigorous and more relaxed than Yale. Yale was perceived as being high in academic prestige but paid a price for that prestige with a college atmosphere that was very unrelaxed. Harvard was seen as being even more unrelaxed than Yale.

A recommendation from the positioning research of Sternberg and Davis (1978) was that respondents need to be familiar with the subset of colleges being studied. Also, positioning studies should be limited in the range of students or subjects who are surveyed.

The research conducted by Sternberg and Davis (1978) contributed a great deal to the understanding of methods used for positioning analysis. Similar institutional positions were constructed using either multidimensional scaling or factor analysis (nonattribute and

attribute methods). The multidimensional scaling method produced a two-dimensional map of the overall perception of academic prestige and size. However, the attribute method of factor analysis provided a deeper understanding of how colleges were perceived through the use of three dimensions and the identification of specific attributes.

Litten (1979) also used nonmetric multidimensional scaling to study the market position of Carleton College in Minnesota. Geographic segmentation was added to this study in an attempt to determine unique differences by regions, since different segments may require different service-delivery arrangements. Kotler (1975) also recommended that segmentation be used to enhance positioning analysis. Litten remarked that the two concepts have not been integrated effectively and that "regional segmentation provides a pragmatic empirical basis for developing marketing strategies."

Litten's study provided a major advancement in institutional positioning analysis. No other study was found that published segmentation results along with the usual institutional positioning perceptual maps. Most researchers viewed various publics as segments (freshmen, alumni, parents, etc.) but did not examine other possible segmenting variables such as age, sex, geographic regions, or income levels.

In the Carleton study (Litten, 1979), 1,891 admitted students and 1,021 students who enrolled elsewhere were surveyed using similarity scales and multidimensional scaling. Instead of using all possible pairs, each student rated four colleges. The study showed

that regional differences did exist for Carleton. The market structure in the East was intensive when compared to the North Central region. In addition, a small segment of students in the East was found to be Midwest oriented.

In another section of Litten's (1979) study, respondents rated colleges on 23 characteristics using a three-point scale (very good, good, and poor). A graphic balance sheet showed the strengths and weaknesses of Carleton College compared to major competition in the North Central region and in the East. Carleton was perceived as similar in quality to many top Eastern colleges, but lower in cost. In addition, a need was seen to improve the social atmosphere and perception of the semirural location of Carleton. Changes were recommended with a caution not to alienate the current market of Carleton College.

Meyer (1980) conducted positioning research at Concordia College in St. Paul, Minnesota, for a specific market segment. The purpose of the study was to examine the market position of potential new student markets in lifelong learning within the competitive marketplace (11 institutions). The sample consisted of 197 faculty, students, continuing education persons, and community college students. Multidimensional scaling was used to analyze similarity scales using the KYST program. All possible pairs of colleges were rated by the sample on a 15-point similarity-dissimilarity continuum. Four dimensions were identified and labeled using multidimensional scaling: variety of course offerings, costs, academic quality, and type of institution.

In Part II of Meyer's study, subjects ranked the importance of specific attributes: academic quality, size, location, cost, religious atmosphere, variety of course offerings, and friendly atmosphere. In Part III, subjects used these variables to rank the 11 colleges. One large cluster of seven liberal arts colleges emerged, along with several subclusters of colleges. Differences in five variables (location, academic quality, cost, religious atmosphere, and friendly atmosphere) were found among the four sample groups studied (Meyer, 1980). The theory that images of various segments of an institution differ was supported in this study.

Terrell (1981) used nonmetric multidimensional scaling to determine the position of Temple Baptist College among 12 religious colleges. Oral Roberts University and two other colleges were perceived as being outside the relevant competitive environment and therefore were removed from the analysis. Former students, alumni, and faculty rated the nine competing colleges on eight preference attributes. The eight preference attributes--doctrinal position, facilities, nearness to home, quality of education, size, student environment, tuition costs, and variety of studies--were found to be significant within the competitive environment.

A second step of the study involved the use of multidimensional scaling to generate a two-dimensional grid of student and faculty perceptions of the competitive environment. Perceptions differed among students, former students, and faculty. When the preference attributes were combined with the multidimensional scaling grid,

generating preference vectors, the three segments differed in both preferences and image. As in Meyer's (1980) research, this study also supported marketing theory that various groups view an institution differently. In general, Temple was perceived as being in a desirable position regarding cost and doctrinal position (Terrell, 1981).

Many of the methods for positioning and perceptual mapping following 1980 veered from the traditional nonmetric multidimensional methods. The difficulty of interpreting the results of multidimensional scaling possibly led to greater use of attribute-based studies. Factor analysis and discriminant analysis have been the most commonly used multivariate methods used to analyze attribute-based data for perceptual mapping. Two other methods, each used in a single instance, were (a) a linear formula and (b) analysis of variance.

Maguire and Lay (1981) used both factor analysis and discriminant analysis to interpret 28 attributes using a five-point Likert scale. The 2,500 accepted applicants in the sample rated Boston College and one other college they considered attending. The 28 variables were reduced to six dimensions using factor analysis. The factored dimensions were labeled as follows: academic/religious, reputation, athletics, social/spatial relations, cost, and size/quality. Matriculants considered academics and reputation to be very important. Athletics was seen as being of secondary consideration at Boston College, while cost was seen as an isolated variable.

The first factor contained academic variables and the religious-opportunity variable. However, nonmatriculants factored differently than matriculants and showed no association with the religion variable. However, nonmatriculants did show a close association of academic and athletic variables. With the use of univariate analysis, the association of religion with academic variables for matriculants would not have surfaced. Religion was ranked twenty-first in importance out of 28 variables, but when used in the multivariate method of factor analysis, religion became an important component of the first construct. Variables were also factored for matriculants at Holy Cross College, one of Boston College's close competitors. Not surprisingly, academic and religious variables were also components of the first factor for Holy Cross (Maguire & Lay, 1981).

Discriminant analysis was used to speculate possible areas for improvement and to aid in predicting college choice. Seven major variables were shown to discriminate between Boston College and its competitors. The resulting top discriminating variables needing attention in strategic planning at Boston College were financial aid, parents' preference, and specific academic programs.

The research of Maguire and Lay (1981) offered the advantage of using specific variables in the research. The study allowed administrators to view the institution according to several predetermined dimensions, rather than the unlabeled maps generated from multidimensional scaling. However, the resulting perceptual map in the study

included only matriculants of Boston College. Positioning maps, by definition, need to include relevant competitors. The study was significant in that the two segments factored in the study, matriculants and nonmatriculants, differed in their perceptions of the institution.

Huddleston and Karr (1982) used the attribute-based method of semantic differential scales to research images of high school students visiting Bradley University. Rather than using just adjectives, Huddleston and Karr used phrases, for example, superior/inferior academic reputation. The researchers explained that the concept of image is not concrete and that the semantic differential scale has been used successfully in the past as a "method of observing and measuring the psychological meaning of things."

The methods used in the study, however, lacked two important components necessary for analyzing competitive positions. First, the analysis was univariate. A snake diagram was used to show how Bradley University compared to an ideal college. Means of Bradley and an ideal college were compared using t-tests, indicating 9 of 12 variables to be significantly different. Second, since the purpose of the study was to examine the image of Bradley University, no competitors were included in the study (Huddleston and Karr, 1982).

Turner (1982) performed factor analysis on 21 variables to study 6,892 admitted freshmen at Washington University, St. Louis. Forty colleges were compared in the final analysis, although each student rated up to three colleges, in addition to rating Washington

University. The 21 variables factored into six major dimensions. All possible combinations of the six dimensions were used on two-dimensional perceptual maps.

The six dimensions were labeled according to the variables contained in the factors. Academic-reputation variables were components of the first factor, which is consistent with the study conducted at Boston College by Maguire and Lay (1981). Other factored dimensions included social atmosphere, financial considerations, location, campus-student interface, and special educational programs. Turner also used the data base to produce perceptual maps using multidimensional scaling. However, as in all nonmetric multidimensional scaling, the definition of each axis (dimension) was unknown.

The findings of the study showed that Washington University needed attention in the areas of general reputation, social atmosphere, and its location image. The relevant competitive market was probably not as large as the number of colleges included in the study. Forty colleges throughout the nation represented a very broad market for study. However, the study provided excellent analysis of multiple perceptual mapping from the factored variables. Since the factor analysis method provides known dimensions for each axis, administrators can better prepare specific marketing strategies to correct deficiencies and strengthen the positive attributes of the institution.

In Ohio, Cook and Zallocco (1983) researched attitudes of 241 freshmen at five state universities. Eighteen variables and a

seven-point Likert scale were used to rate seven Ohio institutions. The purpose of the study was more in line with predicting college choice, rather than examining institutional positions. A formula was used for college-choice prediction--attitude was the result of the importance of a variable times the belief that it was offered at a particular university. The study is useful in that all the variables in the study are commonly used in positioning analysis, and perceptual maps could have been derived from the data. Also, as in positioning research, the resulting perceptions of students were used to help develop detailed marketing plans.

Abrahamson (1984) approached positioning from a completely different perspective. Trinity University sends out surveys on a continuing basis to accepted applicants. Students rated Trinity University and two other colleges on 37 attributes using a three-point scale. Rather than using the data in a perceptual map format, linear formulas were used to assess positioning opportunities. For example, an attribute of high importance, plus an attribute unique to Trinity, plus an attribute of low awareness of Trinity and a competitor, plus radical enhancement of awareness level for the Trinity attribute equaled a positioning breakthrough opportunity.

The study was unique in its use of linear formulas to examine institutional positioning. Although the data could be used to construct perceptual maps, only linear formulas were used. Also, competitors were included in the study but were not used to determine mapping positions.

Struckman-Johnson and Kinsley (1985) used the semantic differential scale to examine college perceptions at the University of South Dakota. The sample contained several segments: 557 high school students, 425 university students, and 907 alumni. Analysis of variance was used in the study to compare differences in segments, rather than competing colleges. As in all studies reviewed in this section, segments differed in their perception of the college being studied. High school students had the most positive image of the University of South Dakota. Current students were concerned with the aesthetic appearance and interpersonal atmosphere of the college. Finally, alumni perceived the University of South Dakota to be smaller and less well-known.

The study is valuable because of its use of semantic phrases and comparisons of different segments. But since the study was designed to be primarily an image study of a single institution, no other competitors were included in the research. Regardless of the purpose, the study was weak in its method due to the use of univariate analysis. Image is a complex matter and requires the use of multivariate analysis for a more thorough understanding of subjects' perceptions.

Summary of Methods Used in Institutional Positioning

Positioning research as applied to higher education is in an early stage of development. Variables used in individual studies have ranged from two constructs (Sternberg & Davis, 1978) to up to 37

specific characteristics (Abrahamson, 1984). Construction of institutional positioning maps using two constructs usually results from the use of nonmetric multidimensional scaling, while the use of multiple dimensions for mapping results from attribute-based methods such as factor analysis. The usual result of positioning analysis is perceptual mapping, primarily constructed using either nonmetric multidimensional scaling, factor analysis, or discriminant analysis.

One advantage of multidimensional scaling is that no a priori scales are used, which means attributes are not predetermined. All possible pairs of competing colleges are compared on similarity-dissimilarity scales, and special multidimensional scaling programs are used to plot the resulting data on perceptual maps. A major problem with this method is that the dimensions have to be interpreted by the researcher. Academic prestige and size have been common interpretations of resulting dimensions. The method is difficult to administer since it assumes that the respondents will be familiar with all colleges being studied. Comparing all possible pairs of colleges can become very tedious. One study using paired comparisons on similarity-dissimilarity scales resulted in students comparing 136 pairs of colleges (Sternberg & Davis, 1978).

Factor analysis requires the use of predetermined attributes. The Likert and semantic differential scales are the two attribute-based scales most frequently used to measure student perceptions. Attributes such as academic reputation, quality of faculty, size, social atmosphere, and athletic programs are commonly rated on scales from one to five or from one to seven. Using factor analysis, many

variables are reduced to several dimensions (usually four to six). Using factor scores, all possible combinations of dimensions can be plotted on several two- or three-dimensional perceptual maps. Dimension labels are easy to determine using factor analysis.

Multidimensional scaling has been a popular method for institutional positioning research. This method was used by MacLachlan and Leister (1975), Sternberg and Davis (1978), Litten (1979), Meyer (1980), and Terrell (1981). Factor analysis was used by Sternberg and Davis (1978), Turner (1982), and as a secondary method by Maguire and Lay (1981). Four other researchers mentioned in the review of specific studies used either a linear formula or univariate analysis.

Summary of Sample Populations and Market Segments

Market segmentation studies seek to find homogeneous markets with similar needs. Unique products and services have been developed as a result of both segmentation and positioning. Market segmentation is a logical step for inclusion in positioning studies because most positioning studies are inherently segmentation studies as one or several submarkets become the sample (freshman orientation students, high school students, alumni, community citizens, and so forth). Turner (1982) studied admitted freshmen, while Terrell (1981) researched several segments: students, former students, alumni, and faculty.

Litten (1979) studied perceptions of 1,891 admitted students at Carleton College. Geographic segments were further analyzed to

determine regional variations in market structure. Litten (1979) found perceptions of the geographic segment in the East to differ from the perceptions of the North Central segment. Litten's study was unique in that it was the only research found that included geographic segmentation in the discussion of the study. However, Sternberg and Davis (1978) did examine many segments but did not publish the results. Segments examined by Sternberg and Davis were male/female, freshmen through seniors, financial aid/no financial aid, income, geographic regions, major, and rural/urban segments. Litten (1983) and Kotler and Fox (1985) have commented on the importance of including segmentation in positioning research.

In all studies reviewed in this chapter, sample segments such as high school students, alumni, undergraduates, and faculty differed in their image of the institution being studied. In Litten's (1979) study, geographic segments differed in their perception of the competitive environment.

Research on Statistical Analysis and Scales

Factor Analysis, Discriminant Analysis, and Multidimensional Scaling

Attribute-based studies can be analyzed for perceptual mapping using factor analysis or discriminant analysis (Churchill, 1987). Factor analysis assumes there are really a few basic perceptual dimensions. Factor analysis looks at the correlations among attributes to identify dimensions or constructs. Discriminant analysis also begins with the attribute ratings, but instead of

looking at the structure of attribute correlations, it groups attributes together that best discriminate between objects (colleges). Some attributes may be eliminated from the study when discriminant analysis is used (Hauser & Koppelman, 1979). Hauser (1979) summarized:

> Factor analysis is based on the correlations across consumers and products. Discriminant analysis is limited to dimensions that, on average, distinguish among products. Thus factor analysis should use more attributes than discriminant analysis in the dimensions and therefore produce richer solutions.

Perceptual mapping is a valuable management tool and can be used to locate new opportunities and direct successful marketing plans across the entire institution. Most of the emphasis on mapping has been with similarity scales (multidimensional scaling); however, this method is often more difficult to use. Hauser and Koppelman's (1979) research on perceptual mapping techniques indicated that factor analysis is superior to both discriminant analysis and nonattribute methods such as similarity scaling (multidimensional scaling). The authors reported that factor analysis is superior in theory, goodness of fit, predictive ability, managerial interpretability, and ease of use. Hauser and Koppelman (1979) concluded that "factor analysis is better for strategy development because it separates the dimensions in such a way that ambiguous interpretations are avoided." When using similarity scaling, dimensions need to be interpreted by the researcher, but in attribute-based studies, specific variables are being tested.

Research by Simmie (1978) on alternative perceptual models supported the findings of Hauser and Koppelman (1979). Simmie used

management schools to test various perceptual mapping techniques. Simmie remarked that "factor analysis provides preference recovery superior to both discriminant analysis and multidimensional scaling."

Several sets of conditions exist for deciding which statistical method to use. If the number of products (institutions) in a consumer's mind set is small, if there are variations in the way consumers perceive products, and if attributes can be identified, factor analysis should be used (Hauser & Koppelman, 1979). In higher education positioning research, students are likely to be familiar with only a few colleges. Second, research has shown that different segments such as undergraduates, high school students, and alumni view the institution differently (MacLaughlan & Leister, 1975; Maquire & Lay, 1981; Meyer, 1980; Sternberg & Davis, 1978; Struckman-Johnson & Kinsley, 1985; Terrell, 1981). Finally, the body of attitude and image research from higher education has revealed many variables common to most institutions. Variables unique to an area or institution could be added with ease. According to the research by Hauser and Koppelman (1979), institutional positioning research in higher education would be best served by using factor analysis.

Semantic Differential and Likert Scales

Corporate researchers have frequently used the Likert and semantic differential scales in positioning research. Researchers have indicated that the semantic scale is very useful for assessing organizational images (Aaker & Day, 1980; Green & Tull, 1978; Mindak,

1961). Using the semantic differential scale, General Motors found its connotative image to be very close to its intended image (Clevenger, Lazier, & Clark, 1965). Coca-Cola Company uses the semantic differential to match product images or concepts to actual products (Bloom, 1977).

Both the Likert and semantic differential scales have been used in higher education positioning research. A five-point Likert scale was used by Abrahamson (1984), Cook and Zallocco (1983), Litten (1979), and Turner (1982). Struckman-Johnson and Kinsley (1985) used semantic differential phrases in a positioning study of university students, high school students, and alumni in South Dakota and Iowa. Huddleston and Karr (1982) used 12 semantic differential phrases in an image study at Bradley University. In a cross-validation study, Sternberg and Davis (1978) used 24 adjective pairs in a higher education positioning study of Yale and 16 competitors.

Osgood's (1957) original semantic differential scale consisted of single bipolar adjectives. These scales were used in many attitude and image studies by corporations in the 1960s. Researchers in higher education have only begun to use the semantic scale for attitude research. The semantic scale was expanded to include descriptive phrases. Dickson and Albaum (1977) researched store images using phrases such as slow check-out, high-pressure salespeople, dull store, and well-organized layout.

When adjectives and nouns are used together, semantic meaning is not the only thing being measured. The scale functions similarly to the Likert scale, which usually rates objects on a scale from

excellent to poor. Some researchers maintain that the semantic differential and Likert scales are functionally equivalent (Kassarjian & Nakanishi, 1967; Menezes & Elbert, 1979).

Number of Categories for Attitude Scales

The semantic differential scale normally contains five or seven categories, whereas the Likert scale commonly contains five categories (Aaker & Day, 1980). The most common number of categories used in research with the semantic differential has been seven. Much has been written and researched regarding the number of categories needed for reliable results. According to Cox (1980), five-point scales seem adequate in subject-centered scales such as the Likert scale. In stimulus-centered scales, as many as nine alternatives may be appropriate if stimuli (scales) are heterogeneous and respondents are sophisticated as to the stimuli and committed to answering the questions. Many researchers have agreed that two or three categories are not appropriate (Cox, 1980; Green & Rao, 1970). However, Jacoby (1972) indicated that three categories may be sufficient.

Green and Rao (1970) reported that little information is gained by increasing the categories beyond six. Cox (1980) recommended that an odd number of categories be used to include a neutral position. With these two premises in mind, the researcher has to decide if five or seven categories are needed.

Osgood (1957) developed the semantic differential scale of bipolar adjectives. According to Osgood, most college students were

frustrated with a five-point scale, but grade school children were comfortable with five categories. The discrimination ability of respondents needs to be considered when choosing the number of categories. Green and Rao (1970) emphasized that respondents need to be able to "reply knowledgeably to finer levels of discrimination." According to Cox (1980), when the stimuli are heterogeneous, more categories are needed.

Gable (1986) remarked that the number of categories used for scaling is both a practical and an empirical decision. If the respondent becomes annoyed, the results will be unreliable. According to Nunnally (1978), reliability levels off at about a seven-point scale. McKelvie (1985) found the five-point and the six-point scales most reliable to use. After reviewing a large body of research on response categories, Gable concluded, "The reliability and validity issues seem to be best served through the use of from five to seven response categories."

Summary

Marketing research techniques such as institutional positioning are now being used in institutions of higher education. Although the level of use is currently relatively infrequent (Kotler & Fox, 1985), several colleges have successfully examined perceived images of their competitive environment. The two major techniques that have been employed in higher education positioning research are nonmetric multidimensional scaling (nonattribute method) and factor analysis (attribute method).

Multidimensional scaling has been a popular method in both corporate and higher education research. However, major drawbacks exist with this method. First, respondents rate all possible pairs of colleges, which becomes a tedious task. Second, the resulting unknown dimensions require an attempt at labeling by the researcher. Often the researcher is uncertain regarding the actual constructs obtained or simply leaves the dimensions unlabeled.

The attribute method of factor analysis has been the other most commonly used method for positioning research and the construction of perceptual maps. As variables are reduced to several dimensions, mapping can occur with known labels attached to dimensions. Factor analysis has been shown to be a superior method to both multidimensional scaling and discriminant analysis for use in construction of perceptual positioning maps (Hauser & Koppelman, 1979; Simmie, 1978). Factor analysis is highly suitable for higher education positioning research because of the small number of colleges with which students are familiar, the variation in image by various segments, and the variables available for use in image surveys from previous studies.

Specific studies reviewed in this chapter revealed a wide variety of methods and sample types. Multidimensional scaling was used in five of the studies, while factor analysis was used in three studies. Several researchers compared various subsamples such as high school students, faculty, or freshmen (MacLachlan & Leister, 1974; Maguire & Lay, 1981; Meyer, 1980; Sternberg & Davis, 1978; Struckman-Johnson & Kinsley, 1985; Terrell, 1981). Matriculants and

nonmatriculants were compared in the research of both Litten (1979) and Maguire and Lay (1981). Litten also made a major contribution by providing an analysis of geographic segments. Other researchers sampled a single subgroup: (a) Huddleston and Karr (1982) surveyed high school students, (b) Turner (1982) surveyed admitted freshmen, (c) Cook and Zallocco (1983) surveyed freshmen, and (d) Abrahamson (1984) surveyed accepted applicants.

The two common scales used in the attribute-based research reviewed in this chapter were the semantic differential and Likert scales. The semantic scale was used by Huddleston and Karr (1982), Sternberg and Davis (1978), and Struckman-Johnson and Kinsley (1985). The Likert scale was used by Abrahamson (1984), Cook and Zallocco (1983), Maguire and Lay (1981), and Turner (1982). Both scales were adequate for data collection and use in construction of positioning maps.

The number of categories used with either the Likert or semantic differential scale varied from a three-point scale (Abrahamson, 1984) to a five-point scale (Maguire & Lay, 1980) to a seven-point scale (Cook and Zallocco, 1983). However, maps were not constructed with the research using the three-point scale. Regarding reliability and validity, research suggests that the ideal number of categories to use in positioning research is either five or seven (Cox, 1980; Gable, 1986; Green & Rao, 1970; McKelvie, 1978; Nunnally, 1978). Gable (1986) also suggested that the researcher should consider the

practical and logical aspects of choosing the number of categories for a particular group of respondents.

CHAPTER III

METHOD

The goal of this study was to uncover similarities and differences in freshman students' images of competing colleges offering business degrees. The control college and focus of the study was Ferris State College. Institutional positioning of the competing colleges was demonstrated through the use of many two-dimensional perceptual maps, using five constructs created through factor analysis.

The method section provides a framework for analyzing positions of the Michigan educational marketplace. Topics discussed in this section include design, population and sample, measurement and variables, and analysis.

Design of the Study

The study was designed to reveal the institutional position of the Ferris State College School of Business among its competitors. The design was descriptive and involved a cross-sectional survey taken during the school year 1986-1987 of first-time freshmen enrolled in the School of Business. Convenience sampling resulted in a sample of 503 freshman business students. The methods used were consistent with various marketing research techniques that have been

used in corporate institutional positioning studies discussed in Chapter II (Churchill, 1987; Clevenger, Lazier, & Clark, 1965; Green & Tull, 1978; Hauser & Koppelman, 1979).

Perceptual mapping can result from the use of nonattribute-based data (similarity-dissimilarity paired comparisons or preference rankings) or from the use of attribute-based data. In Hauser's (1979) research on alternative perceptual mapping techniques, attribute-based techniques were favored when "the number of products in the consumer's evoked set is small." In this study, institutional positioning of colleges was substituted for "product" positioning. Students rated Ferris State College, one other college, and an ideal college. Freshmen are not likely to have a defined image of all competing colleges in Michigan. However, most students have considered attending more than one college and usually have an image of at least a few colleges other than Ferris State College. The set of actual colleges was only two--Ferris State and a college the respondent had strongly considered attending. Because of the small number of colleges with which students were familiar, the design of this study included the use of an attribute-based method and, in particular, the semantic differential scale.

Semantic differential phrases were used to measure 23 variables commonly used in higher education image studies. Using factor analysis, the 23 variables were reduced to five constructs. The variables were standardized by individual to minimize scale bias as recommended by Hauser and Koppelman (1979). Factor scores were used to plot competing college images and an ideal college image on

two-dimensional perceptual maps. Multivariate analysis of variance (MANOVA) was used to assess positioning differences of factors between Ferris and competing colleges.

Using MANOVA, five Michigan geographic segments were analyzed for possible positioning variations. Michigan is a very large state, with a large population concentration in the southeast (Detroit) region and a sparse population in the Upper Peninsula region. Admissions work that uses ACT data is geographically based and is useful for showing how market segments respond differently to product and service characteristics. MANOVA was also used to determine positioning differences between Ferris State College and students' perceived ideal college.

Population and Sample

Population

The population was defined as first-time freshmen enrolled at Ferris State College as business majors. The population chosen for the study was consistent with many other positioning studies in higher education. Freshmen and admitted applicants have been the focus of recent higher education positioning studies (Abrahamson, 1984; Cook & Zallocco, 1983; Litten, 1979; Maguire & Lay, 1981; Turner, 1982).

Sample Size and Collection

The sample was drawn from the population of 823 currently enrolled (1986-1987) first-time freshmen who were business majors at

Ferris State College. At least five subjects are needed per variable when using multivariate analysis; however, up to 20 per variable may be needed when results are used to predict behavior (Terenzini, 1982). A sample of at least 115 was needed with the 23 variables used in this study. The sample of 503 drawn for the study was very large compared to the minimum sample needed.

Sample response. The total number of students surveyed was 503. However, 19 surveys were discarded as these students were older and did not fit the definition of first-time freshmen. Twelve surveys were unusable and contained incohesive responses. For example, items were marked down a single column, even though the items were alternated on the questionnaire to prevent students from not reading the items. The actual total number of usable surveys was 472.

Convenience sampling. The sample was collected using convenience sampling in classrooms during the school year 1986-1987. Previous convenience sampling by classrooms at Ferris State College has been shown to contain proportionately representative subsamples by sex, school, and class standing (Dahlquist & Parker, 1986). In this study an even more homogeneous group of students was surveyed--freshman business students. See the following sections on geographic, male/female, and degree program representation.

Only business students were surveyed in 60 sections of English 113, the most frequently enrolled course of freshman business students during spring term. However, about 100 additional surveys were needed after surveying English 113 classes. Other classrooms in

which freshman business students were surveyed were Principles of Advertising, Introduction to Business, English 112, and Business Math.

Instrument administration. The questionnaire was administered primarily in English 113 classrooms and took approximately 12 minutes to complete. Faculty were contacted with a letter stating support from the President of Ferris State College, Dr. William Wenrich, and the department head of Languages and Literature, Dr. John Alexander. All faculty cooperated in the effort, resulting in students being surveyed at the beginning or end of the class period. See Appendices A and B for English 113 classroom schedule and letter of request.

Geographic representation. The usable sample of 472 students collected for this research was more than adequate. However, a large sample was needed for adequate representation of subsamples from each of five geographic regions of Michigan (students' home towns). The five geographic segments studied and resulting percentages of each segment surveyed are shown in Table 3.1. Representation by geographic region of the sample was consistent with actual population percentages. For example, the southeast population percentage was 44.8% and the sample was 43.2%. The Upper Peninsula region was the smallest region; however, a sample of 27 students was collected. Nine students were from another state, resulting in a usable total of 472 surveys. See Appendix C for a list of counties and regions.

Table 3.1.--Geographic response rates of sample.

Region of Michigan	Population Percent[a]	Sample Percent	Number
Southeast region	44.8	43.2	202
Southwest region	21.4	22.1	108
Northwest region	18.4	15.0	71
Northeast region	11.0	11.9	55
Upper Peninsula	4.4	5.8	27
Total	100.0	100.0	463

[a]Source: Fall enrollment, 1986-87, Admissions Office, Ferris State College.

Male/female representation. The actual female representation in the population was 44.4% for the school year 1986-1987. However, female representation in the sample was 48%. Several reasons existed for the high female representation: (a) sampling error, (b) more males than females were absent on days when classes were surveyed, (c) seven males elected not to complete the survey, and (d) 53 male professional golf management freshmen were absent (on internship) spring term.

Representation by degree program. Numbers of students in several degree programs were compared to students surveyed in the sample. As seen in Table 3.2, sample representation by several degree program areas was very close to the actual population percentage. For example, computer information system majors were 6.3% of the actual business population and 5.5% were sampled. Food service/hospitality management majors comprised 4.3% of the

population and the percentage surveyed was 4.4%. Professional golf management majors were low because many of these students were on internship.

Table 3.2.--Population and sample representation by selected degree programs.

Major Program Area	Population Percent	Sample Percent
Office Administration	11.2	9.7
Accounting	7.9	10.2
Commercial Art	5.1	7.0
Professional Golf Management	4.7	2.3
International Business	1.5	1.9
Computer Information Systems	6.3	5.5
Food Service/Hospitality Management	4.3	4.4
Diversified Business	2.6	2.3

Source: Dean's Office, School of Business, Ferris State College.

Measurement and Variables

Instrument Development

Semantic differential scale. Semantic phrases were used in this study, and appropriate adjectives were assigned to various aspects (the variables) of the collegiate environment. For example, dorm life was described as great or boring, and bipolar adjectives used with faculty advising were strong and weak. The semantic scale is the most widely used attitude scale in marketing research according to Greenburn, Bellenger, and Goldstucker (1977).

Item source. A list of 39 variables was developed through a content analysis of previous research on positioning in higher

education (Abrahamson, 1984; Cook & Zallocco, 1983; Litten, 1979; Meyer, 1980; Terrell, 1981; Turner, 1982). The resulting variables included:

distance from home
financial aid
job placement
general reputation
social activities
teaching reputation
average class size
intercollegiates
the application process
parent's preference
quality of students
appearance of campus
programs offered
advance placement
clubs and organizations
variety of courses
library facilities
surrounding city
personal attention
size of college
quality of faculty
availability of scholarships
career guidance and advising
dorm facilities
quality of graduates
prospective student treatment
intramurals
spectator sports
geographic location
cost
contact with admissions
friend attended college
high school recommendation
variety of courses
extracurricular opportunities
fraternities/sororities
attitudes of students
events/lectures/entertainment
equipment/facilities/computers

Content balance. The variables listed above were reduced to 23 using two methods. First, some variables were repetitive or too general. For example, contact with admissions and prospective student treatment were seen as repetitive. Second, variables were chosen that were appropriate to the Ferris State College environment. For example, in the Dahlquist and Parker (1986) study, fraternities and sororities were seen as playing only a minor role in student life. Faculty, programs of study, sports, dorm life, and extracurricular activities were viewed as a major part of the collegiate experience. Also, ACT summary reports (1985-1986) revealed the following as being important factors: specific academic programs, desire for small to medium college, and participation in

sports and extracurricular activities. The resulting 23 variables included:

ease of getting a degree	career oriented
job placement	beauty of campus
admissions	friendly atmosphere
size of college	safety of campus
faculty advising	quality of faculty
business clubs	class size
financial aid	cost of college
spectator sports	participation in sports
available clubs	active campus life
suitable degree programs	unique degree programs
convenient location	selection of degree programs
dorm life	

Degree program variables. Four degree- or program-related variables were used because of the importance of this product variable. One of the major objectives of marketing higher education, according to Kotler and Fox (1985), is to keep programs current and evolving to fit the needs of the clientele. Topor (1986) also stressed academic program as being one of the most important variables to measure when researching institutional image. The degree program variables used were (a) easy/hard to get a degree, (b) suitable/unsuitable degree programs, (c) wide/narrow selection of degree programs, and (d) unique/general degree programs. Career oriented was also included in the study because it is strongly linked to the mission of Ferris State College. The first sentence in the Ferris State College statement of mission is, "Ferris State College, as a public college, is dedicated to providing a broad range of career-oriented and professional programs and public services to the people of the State of Michigan and beyond."

Adjective development. Bipolar adjectives were developed through two methods: (a) content analysis of other studies and (b) an exploratory study of 42 students using word association, as recommended by Dickson and Albaum (1977). Resulting adjectives from the word association exploratory study are seen in Appendix D. Common adjectives surfacing from word association were fun/boring, exciting/dull, weak/strong, and good/bad. The resulting questionnaire contained 23 semantic phrases. See questionnaire in Appendix E. For comparative purposes, Clevenger et al. (1965) used ten semantic differential scales in a corporate image positioning study. Five sets of adjectives were identical to those used in this study: good/bad, beautiful/ugly, large/small, strong/ weak, and slow/fast. Active and dull were also used in both studies, but with different opposing adjectives.

Questionnaire layout. The first of four sections of the questionnaire included demographic and classification data. Male/female, age, degree program, city, county, state, and term enrolled as a freshman helped to identify and screen the targeted sample. The remaining three sections included identical sets of rating scales using the 23 semantic differential phrases. First, students rated Ferris State College on the 23 characteristics. To obtain the competitive environment, students checked or wrote in a college they had strongly considered attending and then rated that college on the 23 items. Finally, the student rated an ideal college using the same 23 semantic phrases. Refer to the questionnaire in Appendix E.

Attribute order. Positive and negative attributes were alternated on the questionnaire to prevent respondents from checking answers without reading the item. The first item on the survey was randomly selected to reduce a potential bias called the anchoring effect. According to Landon (1971), "the first concept measured tends to act as an anchor and become the concept with which subsequent evaluations are made." The problem of order bias was reduced by randomly selecting the semantic phrases.

Pretesting the Instrument

Change in variables. The pretest contained the 20 variables listed in Table 3.3. The variable computers/equipment was removed as it was seen as ambiguous in the factor analysis pretest. Factor variables were added to the final questionnaire, increasing the total number of variables to 23. Convenient location was added because of the rural location of Ferris and the need to determine its relationship to the image of Ferris. Career oriented was added because of its importance in the statement of mission of Ferris. Because of some of the specialized programs in business, such as professional golf management, professional tennis management, international business, commercial art, and court reporting, unique degree programs was added to the final questionnaire. Finally, easy/hard to get a degree was added to the questionnaire because Ferris has an open-enrollment policy.

Number of categories. A pretest was given to 41 upperclassmen using a semantic scale with five category spaces. Another pretest

was given to 68 students using seven category spaces. Table 3.3 shows a comparison of neutral responses using five and seven categories.

Table 3.3.--Five- and seven-point scale neutral responses.

Variable Measured	Answer #3 5-Point n = 41	Answer #4 7-Point n = 68	Sig. at .05	Net Change
Cost of college	22.5%	27.9%		+
Size of college	29.3	38.2		+
Active campus life	27.5	19.4		-
Friendly/snobbish atmosphere	12.2	10.3		minor
Wide selection of programs	31.7	19.1		-
Dorm life	31.7	27.3		minor
Fast admissions process	30.0	25.4		-
Quality of faculty	22.0	22.1		minor
Spectator sports	19.5	35.3	yes	+
Beautiful campus	26.8	19.1		-
Available financial aid	31.7	20.9		-
Job placement	36.6	32.4		minor
Faculty advising	29.3	13.2	yes	-
Participation sports	27.5	32.4		+
Safety of campus	14.6	13.2		minor
Suitable degree programs	22.5	not used		
Class size	24.4	32.4		+
Business clubs	22.0	32.8		+
Computers/equipment	17.0	23.5		+
Availability of clubs	12.2	23.5	yes	+

The sample size of each set of proportions was too small for statistical tests in most cases. When a proportion is less than .25, normality is not achieved since (np) > 10 is necessary for each set of proportions. Even where an 8.9% difference occurred, as in size of college, no statistical difference was found. The pretests were

intended to be small and suggestive of an alternative scale size. In general, Table 3.3 indicates that the percentage of neutral responses increased for eight variables and decreased for only five variables when the seven-point scale was used.

The five-point scale was used in the final questionnaire not only because the pretests favor the use of the five-point scale, but also because first-time freshmen can be considered a fairly homogeneous group and because Ferris students have low verbal skills (Ferris ACT scores averaged 15.2 for 1986-87, the lowest in the state). According to Cox (1980), "what is apparent from the extensive body of research is that there is no single number of response alternatives for a scale which is appropriate under all circumstances."

Factor analysis pretest. The pretest factor analysis of 41 students using a five-point scale was inadequate for analysis in the method section. At least five respondents per variable are needed for meaningful interpretation when using multivariate techniques.

Instrument Reliability

Reliabilities were calculated to determine internal consistency of the instrument, using Cronbach's coefficient alpha, for each of the three sets of 23 variables. The pretest of 41 students had a reliability coefficient of .66 when rating Ferris State College, .66 when rating competitors, and .79 when rating an ideal college. For the final questionnaire, reliability coefficients were .76 for ratings of Ferris, .66 for competing college ratings,

and .78 for ideal college ratings. The reliability of the scale was fairly high considering that when measuring images, there is no correct answer. Reliabilities for competitors were lower because of the diversity in types of institutions that were rated. Reliabilities for an ideal college were higher because of the tendency to rate most items high. The study was designed to measure perceptions of institutions and was subjective by design. For example, some students will perceive dorm life as being great, while others will perceive it as being boring.

Analysis

Overview

Analysis of the 23 variables among Ferris competitors and an ideal college included the use of means, standard deviations, factor analysis using principal axis factoring with varimax rotation, and multivariate analysis of variance (MANOVA). Ten two-dimensional positioning maps were developed using five constructs determined through factor analysis. Resulting maps included institutional positions of these 12 competing colleges, along with an ideal college: Ferris State College, Michigan State University, Central Michigan University, Western Michigan University, Grand Valley State College, Eastern Michigan University, University of Michigan, Northern Michigan University, Saginaw Valley State College, Lake Superior State College, Oakland University, and Davenport College. The Statistical Package for the Social Sciences (SPSS) package was used for the statistical analysis.

Treatment as Interval Data

The semantic differential scale has spaces between adjectives or phrases, rather than numbers. Numbers were later assigned to the spaces for analysis, with low numbers assigned to the positive ends of the scales. The resulting data were treated as interval, which is common practice when using Likert or semantic differential scales for multivariate techniques such as factor analysis and discriminant analysis (Churchill, 1987; Hauser & Koppelman, 1979; Huber & Holbrook, 1979; Osgood, 1957; Rummel, 1970). The semantic differential scale shows direction and intensity of attitudes (Green & Tull, 1978).

Multivariate Methods

Students base their decision to attend a particular college on multiple factors. Because of this complex decision-making process, multivariate methods were used to analyze students' perceptions of colleges. Univariate analysis would fail to take into consideration the interrelatedness of the numerous variables involved in students' perceptions of colleges.

Attribute-based data are analyzed in positioning studies to create perceptual maps by using factor analysis or discriminant analysis (Churchill, 1987). Factor analysis was chosen over discriminant analysis for this study because it identifies both attributes and colleges, rather than simply attributes that differentiate colleges. With discriminant analysis, some attributes may be eliminated from the study (Hauser & Koppelman, 1979). Factor

analysis was used in higher education positioning analyses by Turner (1982), Sternberg and Davis (1978), and Maguire and Lay (1981).

Research Question 1

The first research question involved determining the institutional positions of competing colleges offering business degrees according to 23 factored variables. The null hypothesis was:

> Hypothesis 1: There is no significant difference in the institutional position of Ferris State College and each competitor offering business degrees as perceived by first-time Ferris freshmen.

An initial snake diagram of means of colleges was developed. The diagram showed the strengths and weaknesses of the various competitors and was useful for comparative purposes. However, the analysis was univariate and did not consider the interrelatedness of the variables.

To determine how the variables interrelate, the 23 variables were reduced to five dimensions using factor analysis. A correlation matrix using factor analysis and varimax rotation revealed variables that factored into similar groupings. Using factor scores, ten perceptual maps were constructed to show the resulting institutional positions, including the ideal college. MANOVA was used to test for significant differences in positions of Ferris with each competing college, using an alpha of .05.

Research Question 2

The second research question involved determination of geographic variations in competing college positions. The null hypothesis was:

> Hypothesis 2: There is no significant difference in the institutional position of five Michigan geographic regions of Ferris State College or competing colleges as perceived by first-time Ferris freshmen.

MANOVA was used to determine differences in five Michigan geographic areas using the five factored dimensions and an alpha level of .05. First, Ferris was analyzed to determine if geographic differences existed for the five factors. Then, each college was tested for geographic perceptual differences when geographic subsamples were five or greater. Where differences existed, perceptual maps were constructed to show position variations.

Research Question 3

The final research question involved students' perceptions of an ideal college. Freshmen's perceptions of an ideal college were compared to their image of Ferris State College. The null hypothesis was:

> Hypothesis 3: There is no significant difference in the perceived position of an ideal college and the institutional position of Ferris State College, as perceived by first-time Ferris School of Business freshmen.

MANOVA was used to test for differences in ideal perceptions and Ferris perceptions according to the five constructs developed through factor analysis, using an alpha level of .05. Ideal images were

compared to Ferris State College and other competing colleges on perceptual maps constructed in Research Question 1.

CHAPTER IV

FINDINGS

The results from surveying 472 first-time freshman School of Business students revealed the institutional positions of 12 colleges along with an ideal college. Five constructs resulted from the reduction of 23 variables using principal axis factoring with varimax rotation. Analysis of the findings includes an initial overview of the competitive marketplace and a univariate analysis using snake diagrams of major competitors. Three research questions were then answered. The first question involved constructing positioning grids using mean factor scores of institutions using five factors. The study was designed to provide a fairly simple framework for institutional positioning using multivariate analysis with known variables. The second research question dealt with possible geographic differences in the position of Ferris and geographic differences of several competitors. For the third research question, an ideal college position was compared to Ferris State College for analysis of significant differences on the five factors.

Competitive Marketplace

Twelve competitors emerged in varying proportions from the questionnaire responses. Students marked one of the nine colleges on

the survey or wrote in a response. Table 4.1 shows the resulting subsamples for each competitor. Three major competitors of Ferris in the market of educating business students were Central Michigan University, Michigan State University, and Western Michigan University with 128, 99, and 50 responses, respectively. Other important competitors were Eastern Michigan University, the University of Michigan, Northern Michigan University, and Grand Valley State College with responses from students of 24, 22, 21, and 17, respectively. Saginaw Valley State College, Lake Superior State College, Oakland University, and Davenport College (a private business college) each had responses (subsamples) of 15 or less.

Table 4.1.--Ferris State's competitive market in business higher education in Michigan.

College	Number
Central Michigan University	128
Michigan State University	99
Western Michigan University	50
Eastern Michigan University	24
University of Michigan	22
Northern Michigan University	21
Grand Valley State College	17
Saginaw Valley State College	12
Lake Superior State College	9
Oakland University	6
Davenport College	6
No college considered except Ferris	12
Other colleges	66
Total	472

Twelve students considered no other college except Ferris State College, while 66 students considered other institutions. Write-ins included 7 community or junior colleges, 3 state institutions, 8 private Michigan colleges, and 19 out-of-state institutions. Frequent write-ins were Northwood Institute (5) and Kendall School of Design (4). See complete list in Appendix F.

Univariate Analysis

Many image studies have ended after completion of univariate analyses of means on a snake diagram. The analysis of the 23 individual variables was only the beginning of the method employed in this positioning study. Initially, however, the snake diagrams along with the tables of means and standard deviations that follow were examined for two reasons: (a) to preview the 23 variables with Ferris, each competitor, and the ideal college; and (b) as a basis for establishing the specific variables associated with a factor that caused Ferris to be in a significantly good or significantly poor position.

Competitors with a sample response of 15 or above were used in the snake diagrams. The top seven colleges with high response rates from Table 4.1 were plotted and are seen on Figure 4.1. The univariate discussion was not exhaustive because the emphasis of this research was on multivariate analysis of the variables.

Ferris and the ideal college were also plotted on the snake diagrams. Figure 4.1 shows plots of mean scores for six of the 23 variables for the various competitors: beautiful/ugly campus,

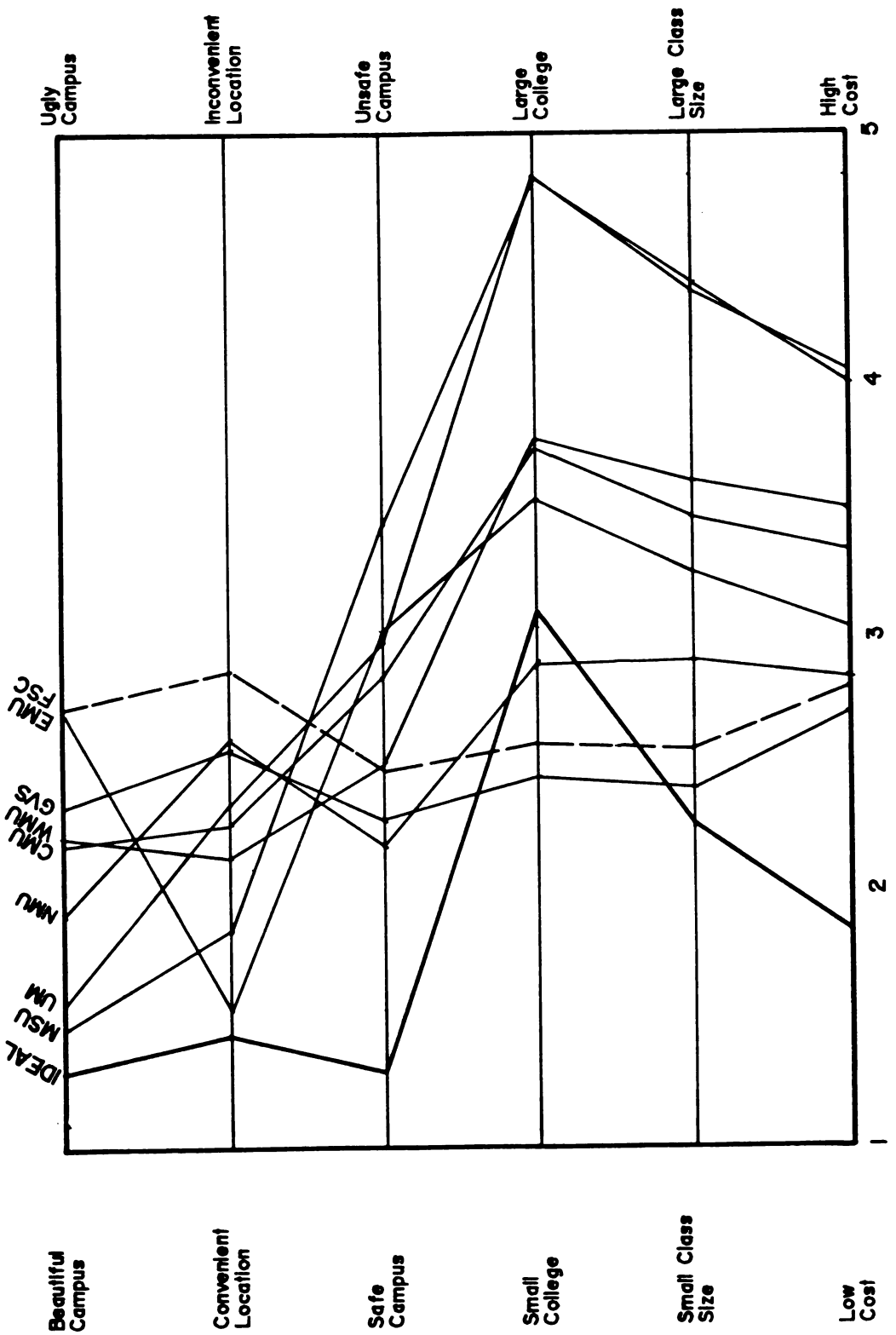

Figure 4.1.--Mean ratings of variables and institutions.

convenient/inconvenient location, safe/unsafe campus, small/large college, small/large class size, and low/high cost. The ideal college had a mean score of less than 2 on four variables. However, size of campus and class size appeared in the center of the diagram. Students who attend Ferris preferred a medium-size college. The University of Michigan and Michigan State University were seen by students as large colleges with large classes and high in cost. Means and standard deviations for each institution are listed in Table 4.2.

The fact that only Ferris students rated the college needs to be emphasized when analyzing the diagrams. Students had a "closer to reality" perception of Ferris than when rating other colleges. Ratings of other colleges may be more idealistic as students were not attending these colleges. Conversely, it is possible that students from another college may perceive Ferris more positively than Ferris students.

Ferris was rated lowest on beauty of campus and convenient location. However, the low rating of Ferris on convenient location was understandable as Ferris is located in rural northern Michigan. Lansing is approximately two hours southeast of Big Rapids, and Detroit is about four hours from Big Rapids.

Ferris State's closest competitors on the variables size of college and cost were Grand Valley and Northern. Actually, these two colleges have less enrollment than Ferris, as seen in Table 4.3. To determine how close perceptions were to reality, the two variables were correlated. Correlation was measured at .94, indicating that

Table 4.2.--Means and standard deviations of variables of major competitors.

College (Valid n)	Beautiful Campus		Convenient Location		Safe Campus		Small College		Small Class Size		Low Cost	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Ideal (466)	1.30	.64	1.44	.74	1.30	.61	3.07	1.19	2.28	1.14	1.85	.98
Ferris State (470)	2.74	1.07	2.88	1.28	2.49	1.04	2.60	1.00	2.57	.95	2.81	1.03
Central Mich. (126)	2.20	.89	2.28	1.03	2.86	.86	3.73	.87	3.48	.91	3.34	.88
Mich. State (97)	1.49	.60	1.86	1.11	3.46	1.02	4.81	.50	4.40	.86	4.00	.84
Western Mich. (50)	2.22	.91	2.14	1.13	2.52	.74	3.78	.98	3.62	.83	3.50	.75
Eastern Mich. (24)	3.21	.66	2.54	.72	2.46	.66	2.42	1.10	2.88	1.04	2.54	.88
Univ. of Mich. (22)	1.59	.73	2.36	1.22	3.00	1.02	4.82	.40	4.36	.66	4.05	1.17
Northern Mich. (21)	1.91	.94	2.62	1.66	2.19	.98	2.91	1.09	2.91	.94	2.86	1.12
Grand Valley (17)	2.35	1.06	2.59	1.18	2.29	.69	2.47	1.01	2.41	.80	2.71	1.16

perceptions of size of college were very close to actual enrollment figures. Lake Superior State and Northern Michigan were perceived as being slightly larger than the enrollment data indicate, whereas Eastern Michigan and Oakland University were perceived as being slightly smaller than actual enrollments. The University of Michigan was perceived as being as large as Michigan State University probably because of its off-campus locations such as the University of Michigan, Flint, and University of Michigan, Dearborn.

Table 4.3.--Actual enrollment and perceived enrollment.

Institution	Actual Enrollment[a]	Mean Enrollment for Variable Small/Large College
Michigan State University	41,897	4.81
University of Michigan	34,847	4.82
Eastern Michigan University	22,213	3.54
Western Michigan University	21,747	3.78
Central Michigan University	16,743	3.73
Oakland University	12,707	2.50
Ferris State College	11,310	2.60
Grand Valley State College	8,410	2.47
Northern Michigan University	7,774	2.91
Saginaw Valley State College	5,377	1.92
Davenport College	2,800	1.50
Lake Superior State College	2,692	2.22
Correlation of perceived and actual enrollment: .94		

[a]Source: Detroit Free Press, "Michigan College Guide," November 16, 1986.

Overall, standard deviations for ratings of Ferris were high on most variables, indicating a wider variety of images within the

actual living environment. The standard deviation for convenient location (1.28) was high because Ferris has a rural, northern location; students attend Ferris from all areas of Michigan; and many students leave on weekends.

Standard deviations for size of college (1.00) and class size (.95) were comparatively low, indicating that size perceptions of Ferris were fairly consistent. However, ideal standard deviations for these variables were fairly high (1.19 and 1.14, respectively), when compared to most ideal standard deviations. For example, the standard deviation was .61 for safe campus and .64 for beautiful campus. Students' ideal image of size had more variation than their actual image of Ferris, indicating some students preferred a larger or smaller college. However, the means of the ideal and actual perceptions were close. For size of college, the means were 3.07 for an ideal college and 2.60 for Ferris, indicating Ferris was within close range of the ideal college. Grand Valley was perceived as being smaller than Ferris and further from the ideal college, whereas Northern was perceived as being larger than Ferris and closer to the ideal college in size. Northern, however, is smaller than Ferris in actual population. Figure 4.1 shows that Ferris was closer to the ideal in size of class than size of college.

Figure 4.2 shows mean plots for the variables great/boring dorm life, active/inactive campus life, friendly/snobbish atmosphere, exciting/dull spectator sports, and many/few participation sports. These variables were social and sports related and tended to cluster toward the positive end of the diagram. Dorm life had the widest

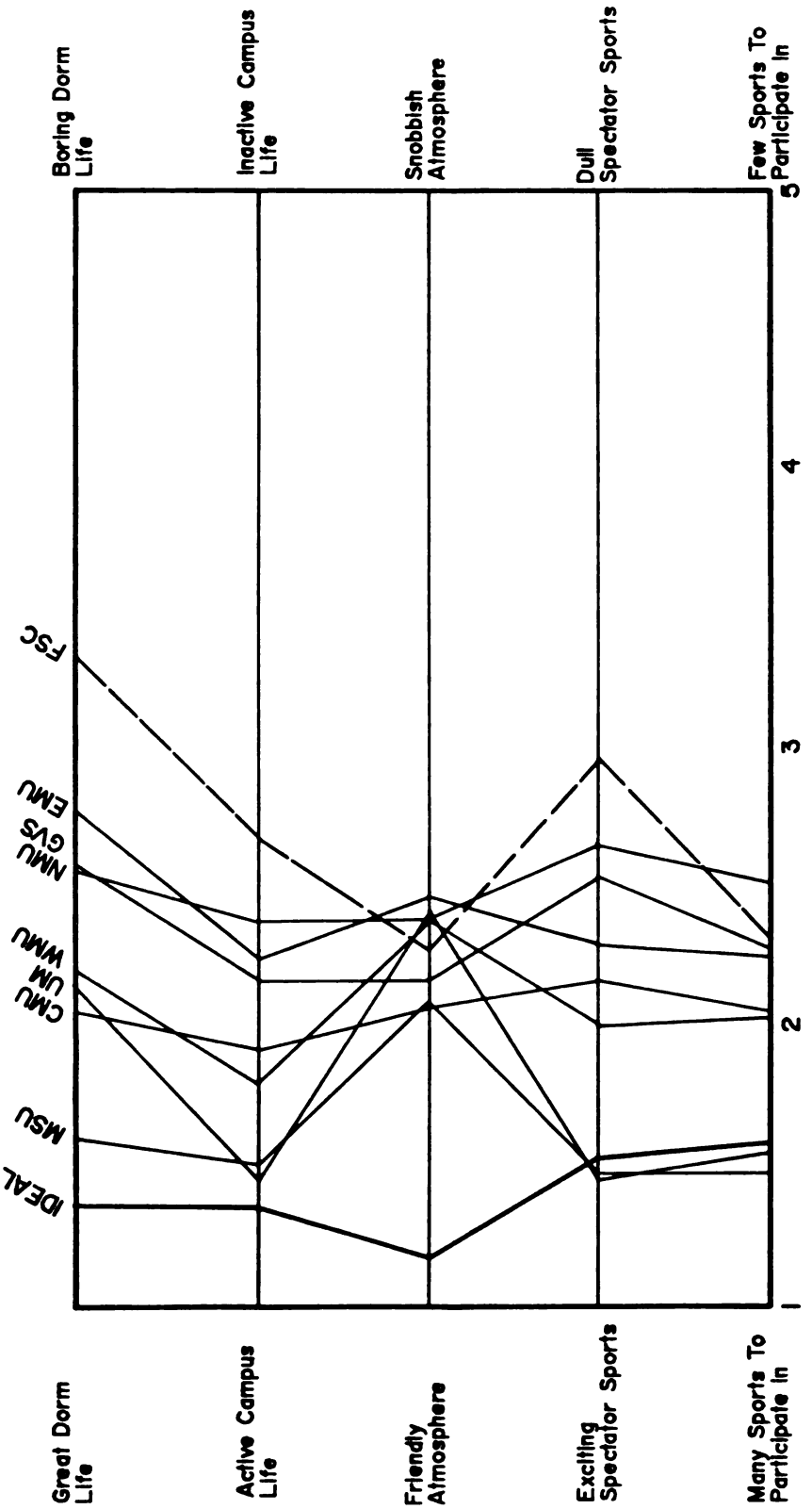

Figure 4.2.--Mean ratings of variables and institutions.

spread for mean values, and Ferris had the worst image with a mean of 3.31. The low dorm image was consistent with the Dahlquist and Parker (1986) study of level of satisfaction with student services on campus. See Table 4.4 for means and standard deviations pertaining to plots seen in Figure 4.2.

Active campus and spectator sports also received low ratings for Ferris. The mean values were 2.69 and 2.95, respectively. Ferris was rated more favorably on the variable friendly atmosphere and was perceived as being in the center of its competitors. The ideal college mean for friendly atmosphere (1.19) was the lowest ideal mean in Figure 4.2.

Interestingly, for the variable spectator sports, the two schools in the Big Ten Conference, Michigan State and the University of Michigan, surrounded the ideal rating of 1.53. The next cluster of means consisted of Central Michigan, Eastern Michigan, and Western Michigan, all members of the Mid-American Conference. Also grouped together, with means closer to the neutral area, were Grand Valley, Ferris, and Northern, all members of the Great Lakes Intercollegiate Athletic Conference. In participation sports, Michigan and Michigan State were again close to the ideal, whereas the remaining six colleges moved closer together, losing the division seen in the spectator sports variable.

Variables in Figure 4.2 having larger standard deviations were active campus life with a standard deviation of 1.17 and spectator sports with a standard deviation of 1.16. The wider range of student images regarding these variables reflects the wide range of student

Table 4.4.--Means and standard deviations of variables of major competitors.

College (Valid n)	Great Dorm Life		Active Campus Life		Friendly Atmosphere		Exciting Spectator Sports		Many Sports to Participate In	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Ideal (466)	1.37	.68	1.35	.67	1.19	.47	1.53	.88	1.59	.81
Ferris State (470)	3.31	1.16	2.69	1.17	2.28	.98	2.95	1.16	2.31	1.02
Central Mich. (126)	2.05	.99	1.91	.87	2.06	.91	2.16	.95	2.04	.88
Mich. State (97)	1.60	.80	1.51	.74	2.07	1.03	1.49	1.00	1.48	.71
Western Mich. (50)	2.20	.78	1.80	.78	2.38	.90	2.00	.86	2.02	.77
Eastern Mich. (24)	2.79	.83	2.25	.74	2.46	.93	2.29	.91	2.25	.79
Univ. of Mich. (22)	2.14	.83	1.46	.60	2.41	.96	1.46	.91	1.55	.80
Northern Mich. (21)	2.57	1.12	2.38	.87	2.39	.89	2.67	1.24	2.52	1.03
Grand Valley (17)	2.59	.87	2.18	.81	2.18	.73	2.53	.94	2.29	.92

interests reported in ACT documents. Students come from a wide range of environments, from rural to city, for example. Examples of student interest areas include drama, student government, music, debate, ski club, fraternities, and so forth. A significant number of students are interested in participating in either intramural athletics or varsity athletics during their college years.

The sports and social variables of Figure 4.2 indicated that Ferris rated low on the variables dorm life and active campus life. However, Ferris was perceived as being in the middle of competitors regarding friendliness. Ferris State's spectator sports were perceived as being the least favorable of the three colleges in the Great Lakes Intercollegiate Athletic Conference.

Career, program, and club variables in Figure 4.3 demonstrated an even closer cluster of mean plots than the previous diagrams. The ideal image was consistently seen as separate from the competitive environment. Michigan State and the University of Michigan, for the most part, dominated the center of the plots, with Michigan State having many available clubs (1.70) and more suitable degree programs (1.70). The University of Michigan was perceived as having good job placement, with a mean of 1.86. Ferris State's image was fairly close to the rest of the competition on all variables. Ferris occupied a central position on suitable degree programs, unique degree programs, active business clubs, and good job placement. As seen in Figure 4.3, Ferris State was next to last on the variable many clubs available. However, Northern was rated extremely low on

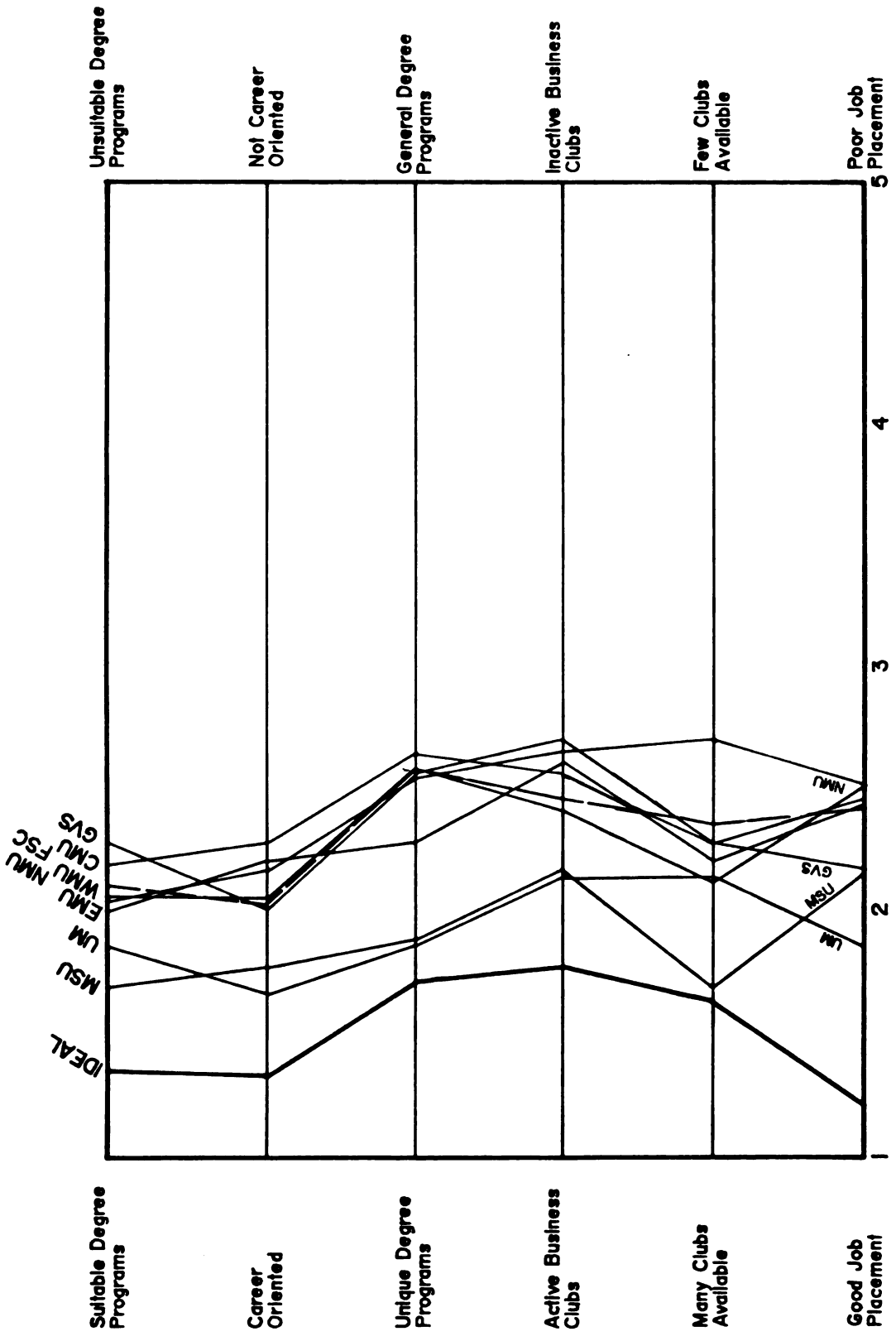

Figure 4.3.--Mean ratings of variables and institutions.

this variable, while Ferris was seen as being fairly close to Michigan, Grand Valley, Eastern, Central, and Western.

Career oriented is part of the statement of mission of Ferris, but Ferris was not seen as being distinct. Michigan State's mean value of 1.78 and the University of Michigan's mean value of 1.68 far exceeded Ferris State's mean value of 2.02. See Table 4.5 for means and standard deviations. Students' perception of career oriented for those who rated Grand Valley was very close to Ferris with a mean value of 2.00. Ferris was perceived as being more career oriented than Western (2.06), Northern Michigan (2.19), Eastern Michigan (2.21), and Central Michigan (2.29). The University of Michigan and Michigan State were perceived as being considerably more career oriented than Ferris State and the rest of the competition.

Grand Valley was perceived favorably on job placement and was close to Michigan State, but not quite as high as the University of Michigan. As seen in Figure 4.3, Ferris was perceived as being close to the remaining four competitors on job placement.

Figure 4.4 displays the remaining variables: easy/hard to get a degree, high/low quality faculty, strong/weak faculty advising, wide/narrow selection of degree programs, and available/no financial aid. All ideal means were very close to the end of the diagram except easy/hard to get a degree. Ferris was centered in a group of colleges, including the ideal on easy to get a degree. Michigan State and University of Michigan were seen as hard to get a degree. As seen in Table 4.6, the University of Michigan's mean was 4.00 compared to Ferris State's mean of 3.00, which was close to the ideal

Table 4.5.--Means and standard deviations of variables of major competitors.

College (Valid n)	Suitable Degree Programs		Career Oriented		Unique Degree Programs		Active Business Clubs		Many Clubs Available		Good Job Placement	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Ideal (466)	1.34	.59	1.32	.65	1.71	.94	1.78	.90	1.64	.86	1.21	.66
Ferris State (470)	2.12	.81	2.02	.92	2.60	1.01	2.48	.81	2.37	1.00	2.42	.87
Central Mich. (126)	2.20	.80	2.29	.82	2.66	.92	2.58	.68	2.29	.77	2.48	.76
Mich. State (97)	1.70	.78	1.78	.89	1.89	1.03	2.18	.85	1.70	.75	2.16	.93
Western Mich. (50)	2.06	.79	2.06	.68	2.60	.90	2.42	.70	2.12	.72	2.52	.76
Eastern Mich. (24)	2.00	.59	2.21	.83	2.29	.69	2.63	.65	2.21	.66	2.46	.72
Univ. of Mich. (22)	1.86	.77	1.68	.78	1.86	.89	2.14	.99	2.14	.77	1.86	1.04
Northern Mich. (21)	2.05	.67	2.19	.75	2.57	.87	2.67	.58	2.71	.85	2.52	.75
Grand Valley (17)	2.29	.77	2.00	.79	2.59	.87	2.71	.69	2.29	.77	2.18	.64

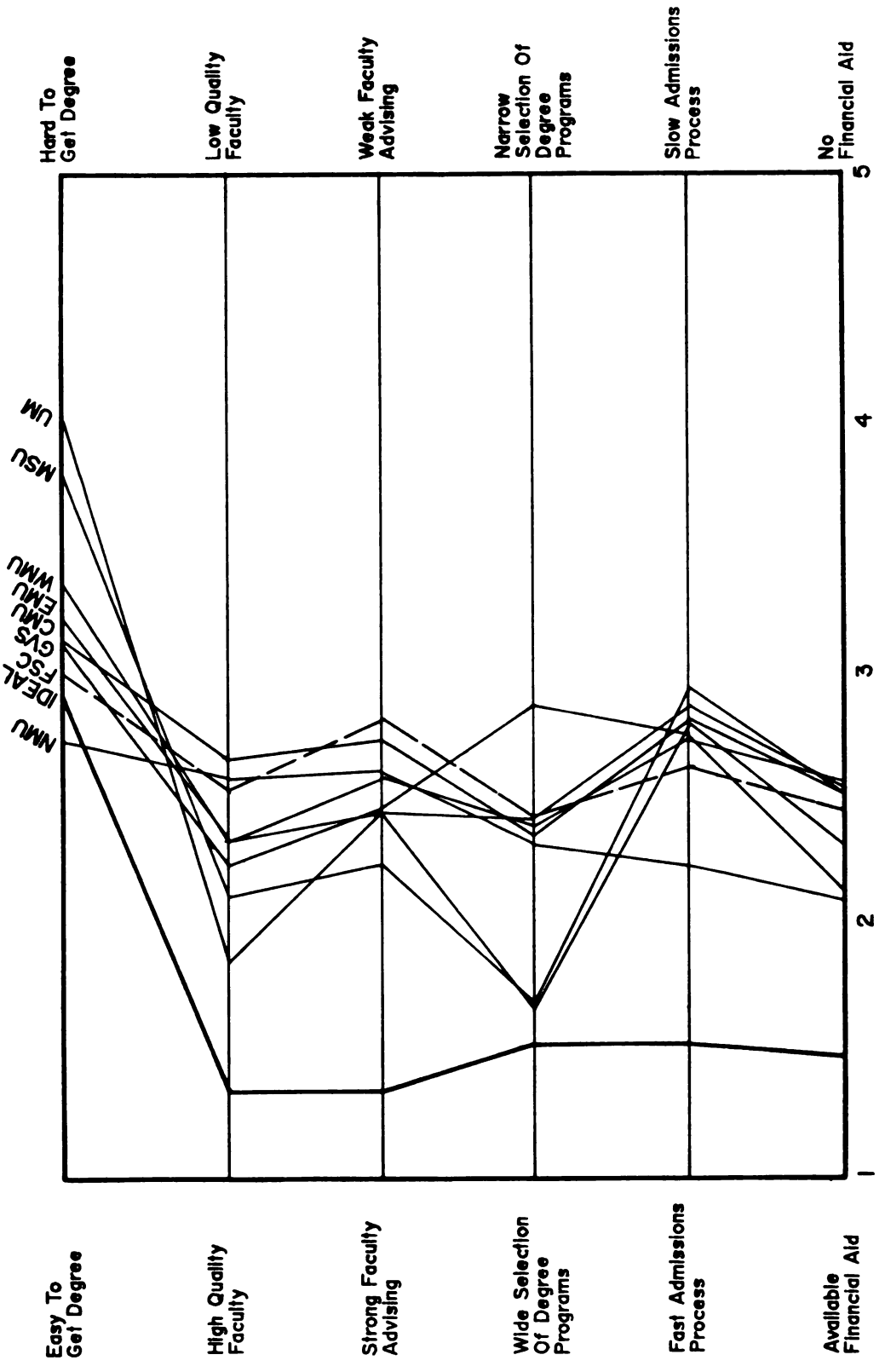

Figure 4.4.--Mean ratings of variables and institutions.

Table 4.6.--Means and standard deviations of variables of major competitors.

College (Valid n)	Easy to Get a Degree		High Quality Faculty		Strong Faculty Advising		Wide Selection Degree Programs		Fast Admissions Process		Available Financial Aid	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Ideal (466)	2.94	1.15	1.34	.66	1.34	.62	1.53	.88	1.53	.80	1.48	.88
Ferris State (470)	3.00	.86	2.54	.89	2.83	1.17	2.43	1.01	2.64	1.08	2.46	1.20
Central Mich. (126)	3.13	.75	2.68	.70	2.75	.70	2.37	.89	2.83	.93	2.53	.84
Mich. State (97)	3.79	.94	2.11	.91	2.44	1.02	1.70	1.00	2.94	1.05	2.53	1.02
Western Mich. (50)	3.34	.56	2.34	.77	2.60	.67	2.40	.86	2.76	.96	2.58	.99
Eastern Mich. (24)	3.21	.66	2.54	.72	2.46	.66	2.42	1.10	2.88	1.04	2.54	.88
Univ. of Mich. (22)	4.00	.93	1.86	.89	2.46	1.10	1.68	1.04	2.82	1.01	2.32	1.09
Northern Mich. (21)	2.76	.77	2.60	.88	2.62	.74	2.33	.80	2.24	.70	2.10	1.04
Grand Valley (17)	3.12	.78	2.24	.66	2.47	.62	2.88	1.11	2.77	.97	2.24	.83

mean of 2.94. The standard deviation for the ideal image on this variable was 1.15, indicating a fairly wide dispersion of answers.

Regarding quality of faculty, Northern Michigan and Central Michigan were perceived less favorably than Ferris State, whose mean was 2.54. The University of Michigan was closest to the ideal with a mean of 1.86. However, Ferris was perceived as lowest within the competitive environment for the variable faculty advising, resulting in a mean of 2.83. The relatively low image of faculty advising could reflect the School of Business policy of students not having to see advisors to register once students reach sophomore status. Interestingly, the standard deviation for quality of faculty was .89, one of the smaller standard deviations among the 23 variables. However, faculty advising had a standard deviation of 1.17. Students' images of faculty advising were more dispersed than their images of quality of faculty.

For the variable wide selection of degree programs, as seen in Figure 4.4, the University of Michigan and Michigan State were close to the ideal college. The rest of the competitors were grouped fairly closely, with the exception of Grand Valley, which was perceived as having a much narrower selection of degree programs. As seen in Table 4.6, the mean on this attribute was 1.53 for the ideal, 1.68 for the University of Michigan, and 2.43 for Ferris State.

Regarding fast admissions process, Northern Michigan was closest to the ideal, having a mean of 2.24. Ferris was next with a mean of 2.64. The remaining competition was perceived as slower, but not far behind Ferris. In other words, students perceived the admissions

process at Ferris to be much slower than their ideal, but better than most of the competition.

Financial aid was another attribute that found Ferris once again in the center of its competition. The ideal college mean was 1.53, with the next closest college being Northern Michigan (2.10). The University of Michigan and Grand Valley were perceived as having better financial aid than Ferris. Michigan State, Central Michigan, Eastern, and Western were slightly below Ferris. The standard deviation of 1.20 was the second largest of all 23 variables for Ferris, indicating that those students who did receive financial aid probably rated Ferris higher on this trait.

Table 4.7 shows means and standard deviations of colleges included in the study but not in the snake diagrams. The subsamples were fairly small for these institutions. However, Saginaw Valley, Lake Superior, Oakland University, and Davenport were included in the factor analysis so that their positions could be examined.

Saginaw Valley was rated lower than all 12 colleges on unique degree programs, clubs available, and active campus life. However, it was rated as very convenient by the 12 respondents in the subsample. The college was perceived as small, friendly, safe, low in cost, and strong in faculty advising.

Lake Superior's strengths included beauty of campus, small size, low cost, safety, friendly atmosphere, unique degree programs, and available financial aid. Weaknesses included dorm life, active campus life, sports variables, and location.

Table 4.7.--Means and standard deviations of variables of institutions with small subsamples.

Variable	Saginaw Valley (n=12)		Lake Superior (n=9)		Oakland University (n=6)		Davenport College (n=6)	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Beautiful campus	2.75	1.36	1.78	.83	2.00	.89	2.50	.84
Conven. location	1.33	1.16	3.44	1.59	1.50	.84	2.33	1.03
Safe campus	2.08	.90	2.11	.78	2.83	.75	2.33	.82
Small college	1.92	1.24	2.22	1.20	2.50	1.38	1.50	.84
Small classes	2.17	.94	1.89	1.17	2.40	1.34	1.83	.75
Low cost	2.75	.87	2.33	.87	3.17	.98	4.67	.82
Great dorm life	2.75	1.42	2.78	1.20	2.33	1.03	3.40	.55
Active campus life	3.01	1.08	2.67	1.12	2.33	.52	3.00	.63
Friendly	2.00	.85	2.00	.87	2.50	1.23	2.00	.89
Spectator sports	2.92	1.00	2.33	1.41	3.17	.41	3.50	1.05
Sports-participate	2.58	1.17	2.33	1.00	2.83	.41	3.83	.98
Degree programs	2.50	.79	2.33	.71	2.00	.63	1.50	.84
Career oriented	2.25	1.14	2.22	.67	1.83	.75	1.33	.52
Unique programs	3.58	.90	2.11	1.05	2.50	.55	2.33	1.51
Business clubs	3.00	.74	2.67	.71	2.67	1.03	2.00	1.10
Clubs available	3.42	1.24	2.56	.88	2.50	.84	2.67	1.03
Job placement	2.42	.74	2.78	.67	2.33	.82	1.17	.41
Easy degree	3.17	.72	3.00	.87	3.50	.55	3.50	1.05
Quality faculty	2.42	.67	2.78	.44	2.33	.52	1.50	.84
Faculty advising	2.00	.95	2.33	.87	2.17	.75	1.50	.84
Selection programs	3.00	1.28	2.89	1.36	3.17	.75	3.33	1.21
Fast admissions	2.58	1.08	2.33	.71	2.33	.52	2.83	.75
Financial aid	2.33	1.07	2.00	.87	2.67	.82	2.67	.82

Oakland University had a relatively positive image in the areas of location, career oriented, unique degree programs, faculty advising, and quality of faculty. Oakland's weak areas included cost, financial aid, sports, ease of getting a degree, and wide selection of programs.

Davenport, a private business college, as might be expected, had a high-cost image. In relation to the ideal, it was rated poorly regarding easy to get a degree and on many of the social variables such as sports and clubs. However, career oriented, business clubs, and job placement were closer to the ideal than any other competitor. Other strengths were faculty, small size, and unique degree programs.

Multivariate Analysis

Factored Variables

The 23 variables were reduced to five factors or dimensions through principal axis factoring using varimax rotation. The variables were standardized by individual to minimize scale bias. The variables were factored across variables and institutions as recommended by Hauser and Koppelman (1979).

The resulting number of factors, using an eigenvalue of one or greater, was actually four. Size and cost variables factored together as one factor. However, when a scree test (eigenvalue plot) was done, the number of factors leveled out at six, indicating that five factors were acceptable. When five factors were used, the size and cost variables split into two separate factors. Eigenvalues of .94 or greater were used for the five-factor solution.

When ideal ratings were omitted, a five-factor solution resulted with cost and size dividing into separate factors. Hair (1987) recommended including ideal ratings of variables in the factor analysis, providing the ideal ratings are usable (not too extreme

from the institutional ratings). The final five-factor solution used in the study included ratings of Ferris, all competitors, and an ideal college.

Independence of responses was assumed for this analysis in order to factor variables across colleges and variables. As explained by Hauser (1987), there is no other way to get a common map, or view of the overall picture. Several hundred positioning studies are done each year by major research firms for large corporations using this method.

A benefit of factor analysis, according to Rummel (1970), is that it reduces a large set of correlated variables to a smaller set of uncorrelated variables. When using orthogonal rotation such as varimax, factors are independent of each other. The correlation between factors is zero, and positive or negative signs only relate to the variable on the corresponding factor. According to Hair, Anderson, and Tatham (1987), collinearity is eliminated when factors are orthogonal.

Factor correlations were examined to determine factor labels. The correlations, as seen in Table 4.8, show relationships between variables and factors. Those variables that were highly correlated on a factor are underlined. Significant variables, but less correlated with a factor, are designated with an asterisk. Hair et al. (1987) explained significance of the positive and negative loadings as follows: .3 is significant, .4 is important, and .5 and above is very significant.

Table 4.8.--Factor correlations for the 23 variables, using principal axis factoring and varimax rotation.

Variable	Factors and Loadings				
	1 Academic	2 Social	3 Size	4 Clubs	5 Cost
Quality of faculty	.6592	.3026*	.0252	.0870	.0325
Suitable degree programs	.5925	.2004	-.0007	.3562*	-.0034
Strong faculty advising	.5870	.4056*	.2006	.0509	.0352
Good job placement	.5833	.2978	.1246	.1811	.0708
Career oriented	.5815	.1329	.0503	.2823	-.0185
Safe campus	.4759	.2322	.2513	.0862	.3325*
Fast admissions	.4689	.1676	.0633	.0352	.3092*
Wide selection-programs	.4670	.2489	-.2516	.1428	.0876
Financial aid	.4607	.1938	.0220	.0414	.2074
Unique degree programs	.4517	.1254	-.0523	.2623	-.0727
Great dorm life	.2822	.7470	-.0904	.1607	.0398
Active campus	.2021	.6920	-.1644	.2832	.0691
Exciting spectator sports	.2552	.5711	-.2128	.1246	-.0274
Beautiful campus	.4237*	.5254	-.0963	.1089	-.0383
Friendly atmosphere	.3615*	.5077	.1441	.2211	.1812
Many sports-participate	.1666	.4618	-.2205	.3013*	.0980
Convenient location	.3792*	.3937	-.0466	.0770	.0746
Small college	-.0081	-.2640	.7045	-.0480	.1738
Small class size	.2176	-.0832	.6752	.0007	.2385
Many clubs available	.2089	.3784*	-.0646	.6688	.0657
Active business clubs	.3419*	.2696	.0272	.4953	.0377
Low cost	.3494*	.0482	.1007	.0181	.6558
Easy to get a degree	-.0909	.0059	.1539	.0189	.3380

Note: Primary factor loadings are underlined.

*Nonprimary loading of .3 or more, significant at .05.

The factor solution resulted in academic, social, size, clubs, and cost dimensions. The variables with the highest loadings were used to name factors. As seen in Table 4.8, variables loading on

Factor 1 from high to low were quality of faculty, suitable degree programs, faculty advising, job placement, career oriented, safe campus, fast admissions, wide selection of degree programs, financial aid, and unique degree programs. The Factor 1 variables were predominantly academic variables. However, safety of campus, admissions, and financial aid were not directly academic, but were seen as being of primary importance by students since their highest correlations were associated with Factor 1. The top five academic-related variables correlated very highly on Factor 1, beginning with quality of faculty at .6592.

Other variables with a .3 correlation and above were also significantly correlated with Factor 1. These variables were beauty of campus, friendly atmosphere, convenient location, business clubs, and cost. These five variables were more strongly correlated with other factors but still related to Factor 1. These nonprimary variables were seen as important attributes by students in relation to the academic factor.

From the factor analysis correlation matrix in Table 4.8, it becomes clear that students did not perceive easy to get a degree as an academic variable. The correlation of this variable with Factor 1 (academic) was -.0909. However, easy to get a degree was correlated with cost on Factor 5. Students interpreted easy to get a degree to be cost related, and therefore the variable was also time related. In addition, 27.1% of the students surveyed were enrolled in a two-year degree program.

Items with high correlations on Factor 2 were primarily social variables. The top three items were dorm life, with a correlation of .7470, active campus at .6920, and spectator sports at .5711. Other social variables with primary loadings on this factor were beauty of campus, friendly atmosphere, participation sports, and convenient location. Secondary variables with significant correlations of .3 or above were quality of faculty (.3026), faculty advising (.4056), and available clubs (.3784). These variables all have strong social implications, especially faculty advising and clubs. However, these nonprimary variables loaded higher on other factors.

Convenient location was perceived as being correlated with the social variables. Since they vary together, there appears to be a connection between the rural location of Ferris and the low ratings (from the univariate analysis) of Ferris regarding some of the social variables such as active campus and exciting spectator sports. In other words, the more metropolitan colleges had better locations with more exciting sports and activities.

For Factor 3, the only two significant and highly correlated variables were size, with a loading of .7045, and class size, with a loading of .6752. Interestingly, the size factor was positively correlated with most variables and negatively correlated (below .3) with many social variables. The means of these variables from Table 4.2 indicate that medium-size college (3.07) and medium-size classes (2.28) represent students' ideal image of size.

Factor 4 also only had two primary variables loading with high values. From Table 4.8, available clubs at .6688 and active business

clubs at .4953 became Factor 4. Two other variables that loaded at .3 or above were suitable degree programs and many participation sports. Suitable degree programs had a correlation of .3562 on Factor 4. Although this variable was highly significant on Factor 1, it was also moderately significant with clubs. An explanation of why the variable was correlated with Factor 4 could be that membership in certain clubs was perceived as being connected to their degree program. This conclusion was supported by examining the numerous clubs available at Ferris that are associated with degree programs. Some examples of business clubs include the Ferris Accounting Club, Professional Golf Management Association, Advertising Society, Society for the Advancement of Management, Hotel Sales Management Association, International Business Association, and Data Processing Association. It was not surprising that business clubs also correlated significantly with the academic variables of Factor 1.

Many participation sports correlated with clubs at .3013. Certain sports can take on club-like characteristics. Ferris has three club sports: soccer, racquetball, and ice hockey. In addition, fraternity, sorority, dorm, and other special groups are involved in intramural activities that have the behavioral traits of club activities.

Cost and easy to get a degree correlated together, representing the fifth factor. Cost was very significant, with a correlation of .6558. However, the correlation of easy to get a degree on this factor was only .3380. As noted, easy to get a degree was not seen as an academic variable but was related to cost.

Also correlating moderately on Factor 5 were safety of campus at .3325 and fast admissions at .3092. The correlations were positive, indicating that the lower-cost institutions were perceived as having a safer campus and faster admissions.

In summary, all significant correlations within each factor were positive. A cutoff of .3 or above was used to designate significant correlations. The resulting five dimensions were interpreted to be academic, social, size, clubs, and cost.

Factor Scores and MANOVA

Using the regression method, factor scores were calculated from the weighted factor correlations in Table 4.8. Mean scores of all competitors and an ideal college were determined. Since the variables were standardized, means were set equal to zero. Therefore, negative factor scores were actually the most desirable values. All ideal college mean factor scores were negative, as seen in Table 4.9. Colleges with negative mean factor scores were perceived as having a better image on that particular factor. The mean scores became coordinates for two-dimensional positioning maps.

The first research question involved determining the position of Ferris among competitors. The hypothesis stated that there was no difference in the position of Ferris and its competitors. MANOVA on five factors was used to determine positioning differences between Ferris and each competitor. Each combination of two factors was then presented on ten positioning maps.

Table 4.9.--Mean factor score coordinates of institutions.

Institution	Factor 1 Academic	Factor 2 Social	Factor 3 Size	Factor 4 Clubs	Factor 5 Cost
Michigan State	.253	-.507	1.207	-.285	1.005
Central	.721	-.280	.431	.182	.256
Western	.533	-.178	.507	.049	.394
Grand Valley	.421	.111	-.410	.208	-.055
Eastern	.432	.246	.380	.080	.236
Michigan	.006	-.263	1.240	-.020	1.045
Northern	.371	.238	.042	.470	-.084
Saginaw Valley	.326	.199	-.824	1.210	-.124
Lake Superior	.426	.238	-.610	.378	-.334
Oakland	.301	.220	-.619	.493	.493
Davenport	-.386	.867	-1.550	.234	1.439
Ideal	-.775	-.560	-.162	-.134	-.397
Ferris State	.408	.681	-.176	-.006	-.090

Table 4.10 shows the results of MANOVA tests of significance between Ferris and each competitor using all five factors as dependent variables. Positioning differences existed between Ferris and every competitor except Oakland University. However, using a probability level of .05, Oakland was close at .068. Assuming a possible Type II error because of a small subsample, Oakland was included in the following discussion as having possible positioning differences with Ferris.

Since the MANOVA analyses were all significant with the possible exception of Oakland University, a univariate analysis was done to examine specific factor variations within the competitive environment. Probability levels for each factor and competitor appear in Table 4.10.

Table 4.10.--MANOVA of five factors and Ferris with each competitor.

Institution	Wilks' Lambda Value	Exact F	Prob. Level	Univariate Prob. Level 1 Aca.	2 Soc.	3 Size	4 Club	5 Cost
Mich. State	.4049	160.47	.000	.053	.000	.000	.002	.000
Central	.6625	58.69	.000	.000	.000	.000	.018	.000
Western	.7905	26.50	.000	.247	.000	.000	.641	.000
Grand Valley	.9732	2.57	.026	.943	.004	.136	.287	.826
Eastern	.9403	6.02	.000	.874	.009	.000	.608	.015
U. of Mich.	.7002	40.41	.000	.012	.000	.000	.938	.000
Northern	.9679	3.11	.009	.583	.016	.136	.010	.969
Saginaw	.9051	9.69	.000	.699	.042	.001	.000	.855
Lk. Superior	.9747	2.38	.038	.942	.103	.044	.161	.253
Oakland	.9773	2.07	.068	.743	.201	.127	.174	.042
Davenport	.8916	11.06	.000	.016	.607	.000	.514	.000

As seen in Table 4.10, Ferris did not differ significantly on academic variables from most of its competitors. Ferris State did, however, differ academically from three colleges. These were the University of Michigan, Central Michigan, and Davenport College. The difference in competitive positions was shown in Table 4.9 (mean factor scores) and the positioning maps that follow.

Ferris differed significantly from all competitors except three on the social factor. Ferris did not differ from Lake Superior State College, Oakland University, or Davenport College. However, all three colleges had small subsamples. The positioning maps show that a possible Type II error may have occurred in this case.

On Factor 3 (size), Ferris showed significant differences from all colleges except Grand Valley State College, Northern Michigan University, and Oakland University. Referring back to actual

enrollment as shown in Table 4.3, Ferris is close in size to Northern, Grand Valley, and Oakland.

The factor clubs (Factor 4) resulted in a fairly positive outcome for Ferris. The image of clubs at Ferris was similar to the image of clubs at many larger institutions. Clubs at Ferris were seen as not being different from clubs at Western Michigan University, Grand Valley State College, Eastern Michigan University, the University of Michigan, Lake Superior State College, Oakland University, and Davenport College (see Table 4.10). Four colleges differed either favorably or unfavorably in relation to Ferris. These colleges were Michigan State University, Central Michigan University, Northern Michigan University, and Saginaw Valley State College.

Ferris differed significantly on cost from most competing colleges. The maps that follow show the relative position of Ferris regarding cost. According to the MANOVA test, colleges that were perceived as being equal to Ferris in cost were Grand Valley, Northern, Saginaw Valley, and Lake Superior. Davenport and large universities were perceived as costing more.

Ferris was perceived as being very similar to its competitors on the academic variables and club variables. However, Ferris was perceived as being very different from most competitors regarding size, social, and cost variables.

A more in-depth analysis follows as positioning maps, using mean factor scores, reveal the exact location of Ferris State's image

among the 12 competitors along with an ideal college rating. Where significant differences existed, Ferris was in an excellent competitive situation regarding some factors, but it was in a poor position on other factors. The ten positioning maps that follow show the competitive environment, two dimensions (or factors) at a time.

Positioning Maps

The positioning maps that follow were constructed from the mean factor score coordinates of colleges (Table 4.9). Factor scores for each college and the ideal college on each of the five factors were plotted. When variables are standardized, the mean is set equal to zero; i.e., each factor as a whole has a mean of zero. The rating scales used on the survey ranged from 1 to 5, with a 1 being favorable. Since the mean is zero, negative ratings will occur, particularly in the case of the ideal college.

Four quadrants result when factor scores of competing colleges are plotted using two factors simultaneously. The center of the horizontal and vertical axis is zero. As an example to see how the data were factored and transformed, the ideal mean for the cost variable from Table 4.2 was 1.85. Cost as a factor for the ideal college resulted in a factor score coordinate of -.397.

The lower left quadrant contains two sets of negative coordinates and in this study contained the ideal college for every factor. The upper right quadrant contains two sets of positive coordinates and represents positions far from the ideal. The remaining two quadrants contain a positive and negative value,

representing average positions. However, since the position of the ideal college on the size factor was closer to a medium-size college and therefore closer to zero, the interpretation of the quadrants changed somewhat when size was used. Excellent positions were those appearing close to the ideal in any quadrant.

Figure 4.5 shows the position of institutions on academic and social factors. Since negative coordinates are most desirable, the lower left quadrant is the best quadrant. This quadrant contained the ideal rating in the far corner. The upper right quadrant, representing a poor position, contained a set of positive coordinates. The remaining two quadrants contained a positive and negative coordinate for the two factors, representing an average position. See Table 4.9 for the exact coordinates used in the following ten positioning maps.

In Figure 4.5, Ferris was seen as being in the poor quadrant (upper right) regarding academic and social factors. The poor position was even more emphasized by the fact that Factors 1 and 2 contained 17 of the 23 variables in the study. The academic variables were top explanatory variables in most of the collegiate positioning studies reviewed in Chapter II.

On a more positive note, Ferris was not seen as statistically different on the academic factor from most of its competitors. Ferris was seen as being equal academically to Michigan State, Western, Grand Valley, Eastern, Northern, Saginaw Valley, Lake Superior, and Oakland. It should be noted that Michigan State was

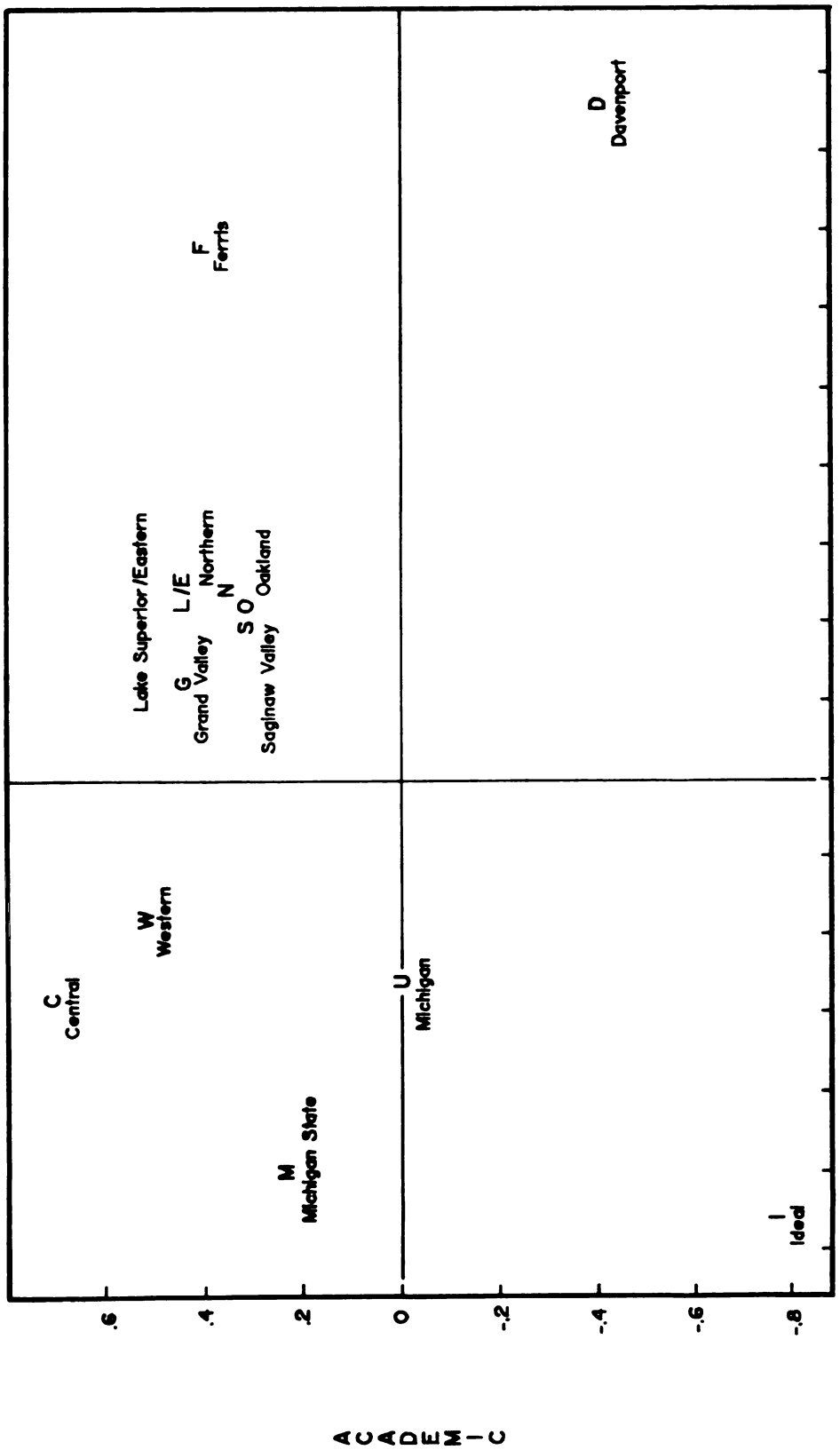

Figure 4.5.--Institutional positions with academic and social factors.

very close to being significantly different from Ferris. Although the ANOVA probability level on Factor 1 between Ferris and Michigan State was .053 (see Table 4.10), the subsample was fairly large (97). Therefore, Michigan State was perceived as being similar to Ferris State at the .05 level regarding the academic factor.

From the MANOVA analysis shown in Table 4.10, Central Michigan was seen as being significantly less academic than Ferris. The University of Michigan and Davenport College were seen as being significantly more academic. ANOVA probability levels were .000, .012, and .016 for Central Michigan, the University of Michigan, and Davenport College, respectively.

Highly significant academic variables (a loading of .5 or above) for Factor 1 were quality of faculty, suitable degree programs, strong faculty advising, job placement, and career oriented. Ferris State's image was seen as being located in the middle of its competition on these variables (refer to snake diagram, Figure 4.3). Michigan State was seen as being far better than Ferris regarding unique degree programs. Michigan State was closest to Ferris regarding job placement and career oriented. Mean values, for example, from the snake diagram for career oriented, were 2.02 for Ferris and 1.78 for Michigan State.

Central Michigan, with a subsample of 126, received the worst ratings of all competitors on the variables career oriented, unique degree programs, and high-quality faculty (Figures 4.3 and 4.4). Its academic coordinate was .721. Also significant, but in the opposite direction, was the University of Michigan with a mean academic factor

score of .006. The University of Michigan was positioned very close to the ideal. This institution received high ratings on all five highly correlated academic variables. Davenport's academic coordinate was -.386, even stronger than Michigan's. Not surprisingly, Davenport (a private business college) rated extremely well on these academic variables: career oriented with a mean of 1.33, job placement with a mean of 1.17, and both faculty advising and quality of faculty with means of 1.50 (Table 4.7).

The social factor in Figure 4.5 was the main contributor to Ferris State's poor position. Ferris was significantly different from most of the competition on the social factor. Statistically, Ferris did not differ from Lake Superior, Oakland, or Davenport. However, Lake Superior and Oakland were positioned in a cluster with Eastern, Northern, Saginaw Valley, and Grand Valley. Larger subsamples may have resulted in a significant difference on the social factor. Davenport was not seen as being significantly lower than Ferris (alpha of .607). Since Davenport is a commuter college located in metropolitan Grand Rapids, it would be expected to be positioned low socially. Socially, both Ferris and Davenport were positioned furthest from the ideal.

Social variables with highly significant loadings on Factor 2 were dorm life, active campus life, spectator sports, beauty of campus, and friendly atmosphere. Ferris received some of its poorest ratings on these variables. From the analysis of means of variables (Table 4.4), Ferris State's image was the furthest institution from

the ideal on four variables. These poor mean ratings were dorm life (3.31), active campus (2.69), spectator sports (2.95), and beauty of campus (2.74). Together the variables explain why the social image of Ferris was in the upper right quadrant of Figure 4.5. According to the previously discussed snake diagrams, Ferris was located near the center of competitors for the variable friendly atmosphere. In addition, all colleges were more clustered on this variable.

The colleges with the best positions were the University of Michigan, Michigan State, Western, and Central, located in the upper left quadrant, and Davenport, located in the lower right quadrant. These colleges had at least one negative coordinate. The four in the upper left quadrant excelled socially, while Davenport's strength was the academic factor. The remaining colleges were poor on both academic and social factors. All academic coordinates were positive except Davenport and the ideal college. Although Ferris was significantly the same academically as all but three of its competitors, it social image pulled it into the upper right quadrant.

Figure 4.6 discloses the positions of institutions for academic and size factors. The detail from Figure 4.5 regarding the academic factor was not repeated here. However, a general analysis of relative positions follows.

The size factor contained the variables size of college and class size. Both variables had highly significant correlations (loadings) in the factor analysis. Regarding size, Ferris was

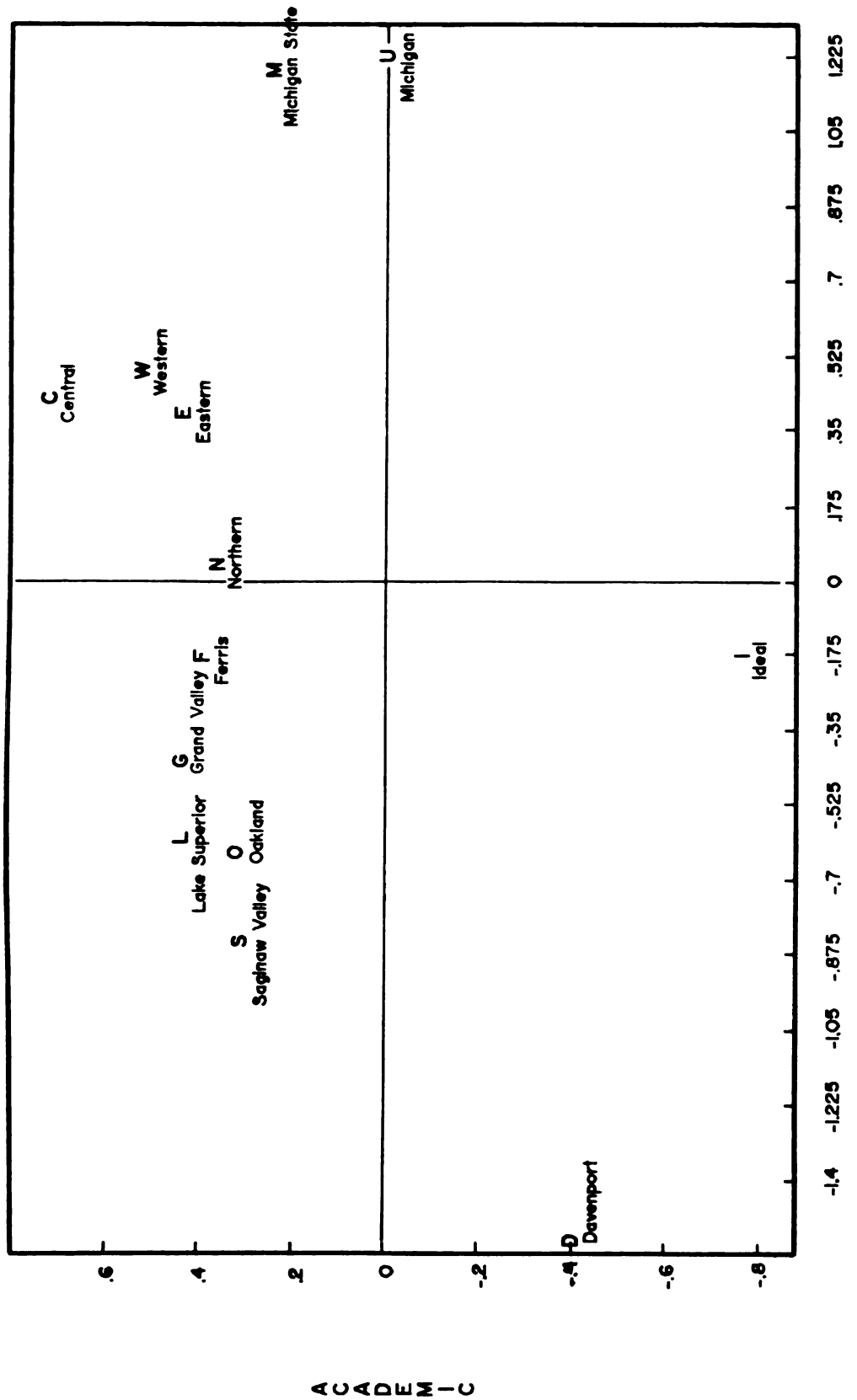

Figure 4.6.--Institutional positions with academic and size factors.

perceived as being statistically the same as Grand Valley, Northern, and Oakland. These colleges were also the closest to Ferris in actual enrollment. Davenport College, Saginaw Valley, and Lake Superior were seen as smaller than Ferris, whereas Central, Western, Eastern, Michigan, and Michigan State were seen as larger colleges.

As noted, the interpretation of the quadrants changed somewhat when the size factor was plotted. A medium-size college was preferred by respondents in the survey, resulting in a shift of the ideal college toward the zero point on the horizontal axis in Figure 4.6. Colleges positioned close to the ideal in any of the quadrants hold an advantageous position. However, in Figure 4.6, all colleges in the competitive marketplace were positioned far from the ideal.

The ideal college and Davenport were positioned in the lower left quadrant. However, Davenport was perceived as very small in relation to the ideal college. The ideal rating on the size factor was closer to zero (-.162) and also closer to Ferris (-.176) than any other institution. However, the academic image of Ferris resulted in Ferris achieving a position far from the ideal on this combination of factors.

There were no colleges in the lower right quadrant. Ferris, Grand Valley, Lake Superior, Oakland, Northern, and Saginaw Valley were close to the ideal in size. All these colleges except Northern were in the upper left quadrant. Once again, the University of Michigan and Davenport were closer to the ideal college on the academic factor, but positioned on the extreme ends, far from the ideal on size. The business students who attended Ferris had a

perception of Ferris very close to the ideal regarding size. Considering the variables comprising the size factor (refer to Figure 4.1), students actually desired a slightly larger college with slightly smaller class sizes than Ferris State College offers.

Overall, Central Michigan, Western Michigan, Eastern Michigan, the University of Michigan, and Michigan State had the poorest images on the two factors. Central Michigan was perceived as large in size and poor academically. Michigan State, Western, and Eastern were perceived as large but equal academically to Ferris. The University of Michigan was strategically located academically, but perceived as very large, far from the ideal. Ferris State's closest competitors on the academic and size factors (see Figure 4.6) were Northern Michigan and Grand Valley.

Figure 4.7 exposes the positions of institutions on the factors academic and clubs. The clubs factor included the variables many clubs available and active business clubs. Both variables loaded very significantly and had correlations of .6688 and .4953, respectively. Again, regarding the academic factor, the University of Michigan and Davenport College were significantly closer to the ideal than Ferris. Michigan State followed, but appeared closer to the remaining competition.

Regarding clubs, Ferris was perceived as being in a significantly better position (see MANOVA, Table 4.10) than Central, Northern, and Saginaw Valley. However, since Ferris was significantly better positioned than Central, significant differences

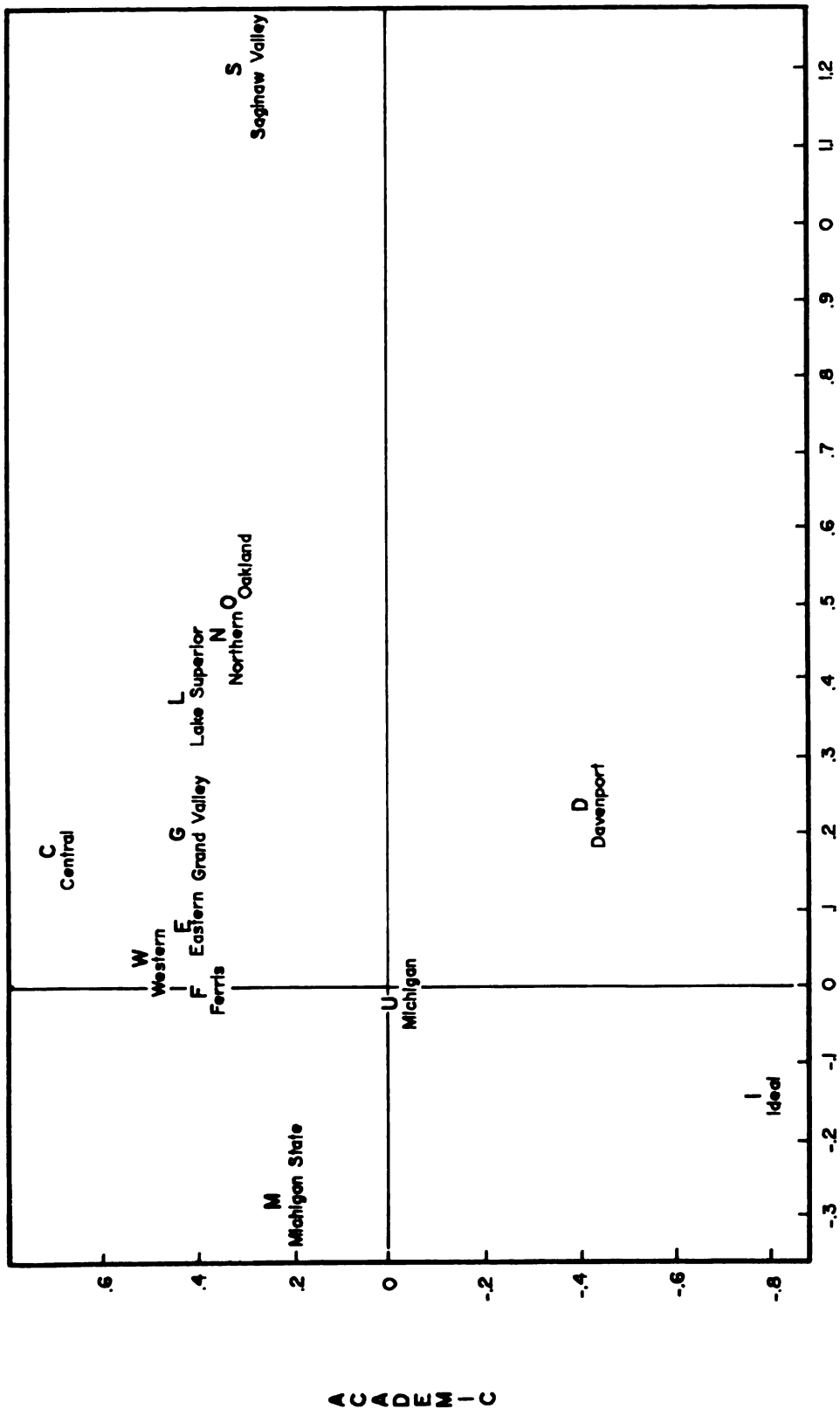

Figure 4.7.--Institutional positions with academic and clubs factors.

may have also occurred with Grand Valley, Lake Superior, Oakland, and Davenport, with larger subsamples. For example, in Figure 4.7, Grand Valley appears to the right of Central on the clubs factor. Michigan State was perceived as being in a significantly better position than Ferris. Ferris State was closest to the University of Michigan, Western, and Eastern regarding its clubs image.

Ferris achieved an edge on the clubs factor by being positioned closer to the Big Ten colleges than other competitors. Ferris State's clubs coordinate in Figure 4.7 was -.006, while the University of Michigan's was -.020. Ferris, the University of Michigan, and Michigan State were the only colleges in the upper left quadrant. Davenport was closest to the ideal rating in this map and was positioned in the lower right quadrant by itself.

Overall, Davenport, the University of Michigan, and Michigan State occupied the best position on the two factors, academic and clubs. The University of Michigan was close to being in the same quadrant as the ideal. Davenport's strength was the academic factor, while Michigan State's strength was the clubs factor.

Ferris State's image on clubs was fairly positive, as it was seen by its own students as being close to or equal to much larger institutions (Western, Eastern, and the University of Michigan).

Figure 4.8 shows the fifth factor, cost, along with the academic factor. Unlike other factor loadings, cost correlated highly at .6558, while easy to get a degree correlated moderately at .3380.

The academic factor once again found most colleges positioned in the upper half of the map. However, along the horizontal axis of the

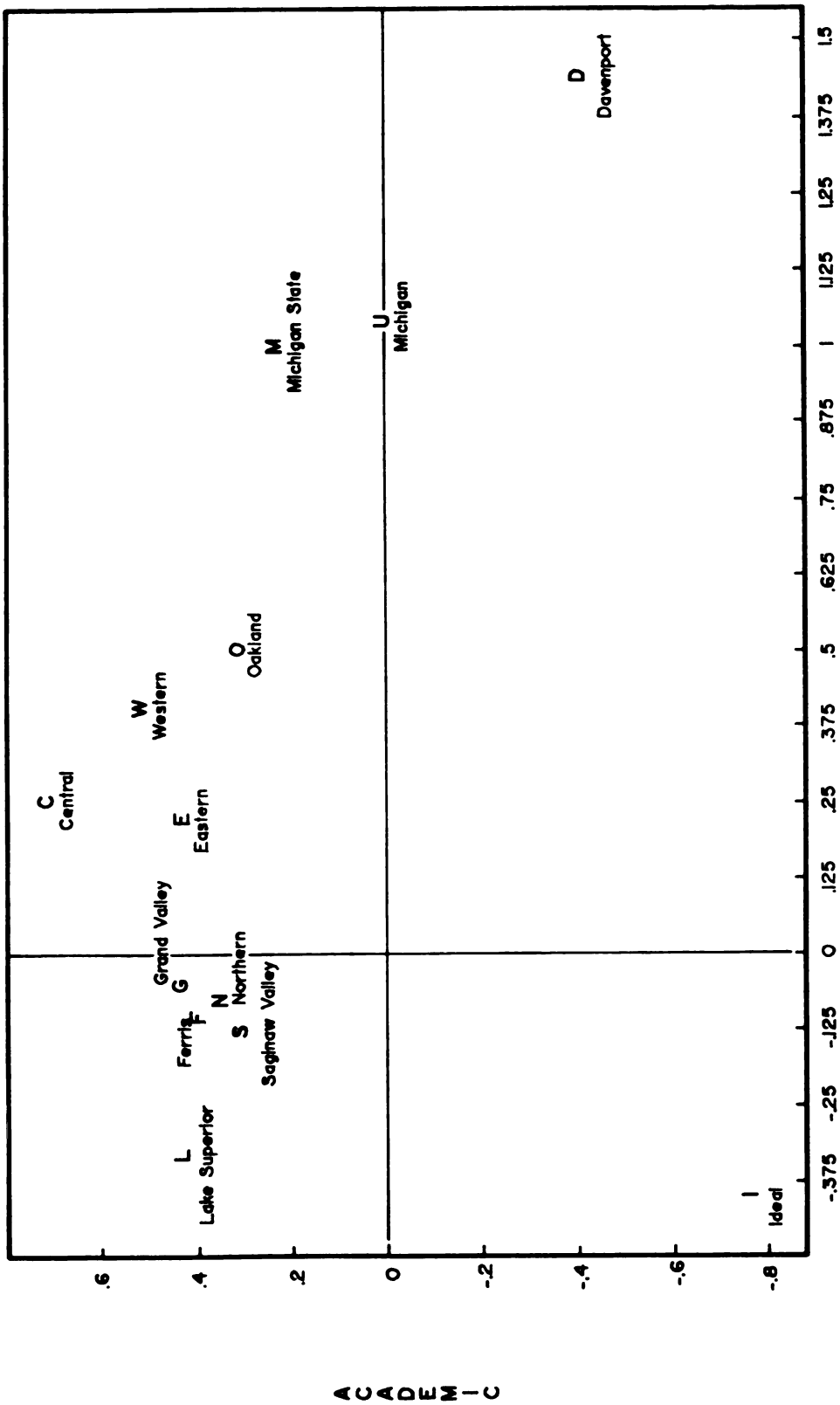

Figure 4.8.--Institutional positions with academic and cost factors.

cost factor, the institutions became more dispersed. The ideal rating on these factors was in the far left lower quadrant and distant from all competitors. There appears to be a logical relationship between the two factors. The higher the academic rating, the more expensive the image was of an institution.

Ferris was seen as statistically equal in cost to Grand Valley, Northern, Saginaw, and Lake Superior. However, Lake Superior may have been perceived as being significantly lower in cost had the subsample been larger. Lake Superior was positioned very close to the ideal on the cost factor.

The larger institutions appeared in the upper right quadrant, far from the ideal. These colleges were Eastern, Central, Western, Oakland, the University of Michigan, and Michigan State. Not surprisingly, the only private college in the study, Davenport, was seen as very high in cost.

Ferris occupied a fairly competitive position on this map. Colleges with lower enrollments were perceived as being equal to Ferris State in cost. Similarly, on the cost variable from the snake diagram (Figure 4.1), Ferris was between Grand Valley and Northern. On easy to get a degree, Ferris appeared within a close cluster of colleges. In order, these were Northern, the ideal, Ferris, Central, Grand Valley, and Eastern. The high number of students enrolled in a two-year program may have also contributed to Ferris State's cost position.

Overall, Ferris occupied a fairly competitive position on this map. Cost is a major factor for students attending college. Ferris

was perceived as being less expensive than Central, Eastern, Western, Oakland, Michigan State, the University of Michigan, and Davenport.

All five factors have been discussed in detail as the factors were combined in sets of two, using four positioning maps. The following discussion includes six positioning maps of the remaining combinations of factors, two at a time.

Figure 4.9 exposes the positions of colleges on social and size factors. This map shows that the position of many colleges moved closer to the ideal. The worst position on the size factor would not be the upper right quadrant, but would be colleges in distant positions from the ideal in any quadrant, since ideal size was near zero.

Ferris State's social image was seen as distinctly inferior to most of its competitors. Davenport College was also poorly perceived by students on the social factor. Although the University of Michigan and Michigan State had excellent social images, they were positioned far from the ideal on size.

Both Western and Central were close to the ideal but were perceived as moderately large. Northern and Grand Valley were closer to the ideal on size but had lower social ratings. Lake Superior, Oakland, and Saginaw were seen as smaller colleges with social ratings close to Northern and Eastern.

Overall, many colleges gained a positioning improvement on these two factors. However, Ferris State's low social rating did nothing

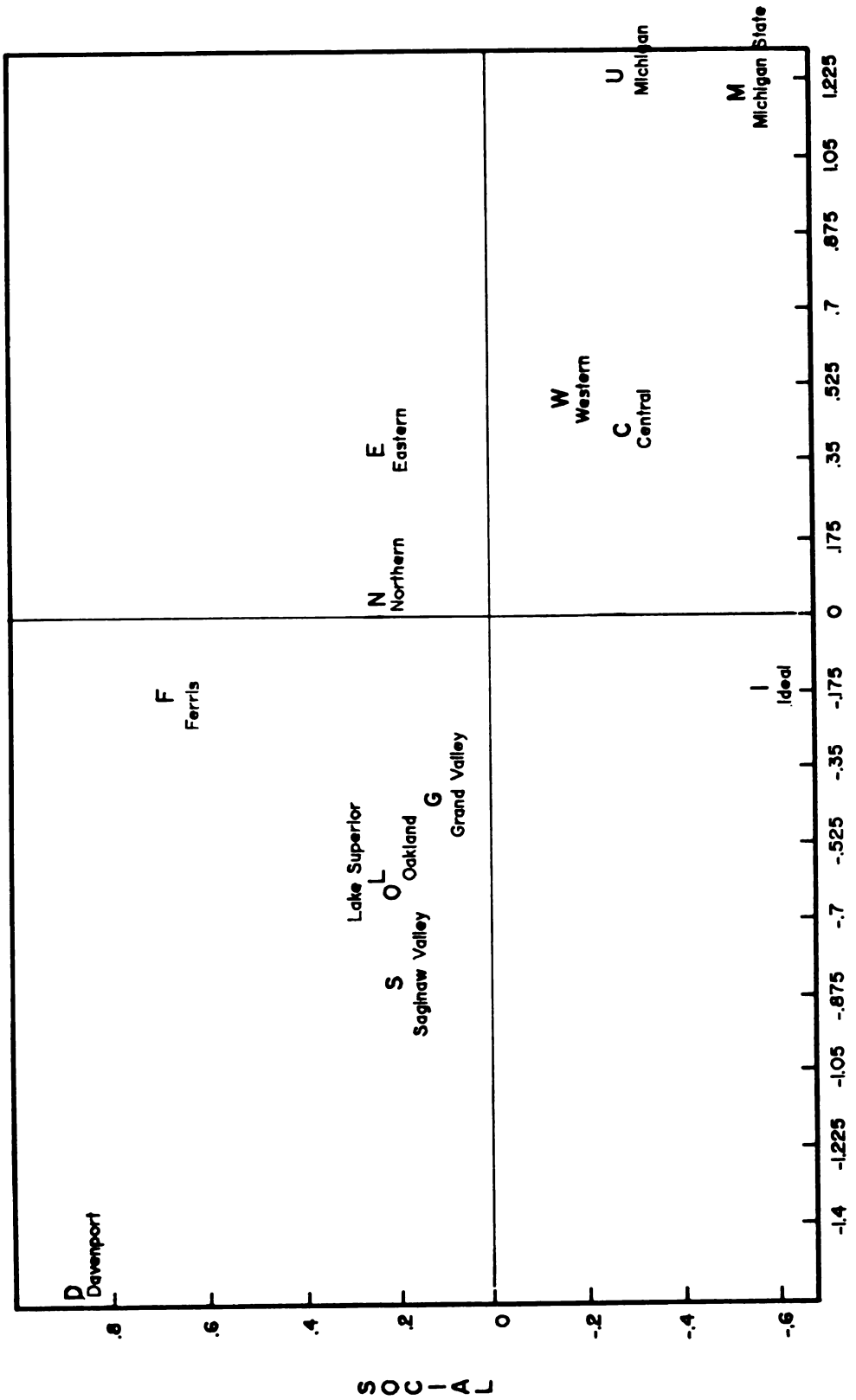

Figure 4.9.--Institutional positions with social and size factors.

to enhance the excellent size rating. Size is a difficult variable to change, even over a long period of time.

Social and club factors are disclosed in Figure 4.10. Two colleges were positioned in the same quadrant with the ideal college. The University of Michigan and Michigan State had strong images regarding clubs and social attributes. Located in the lower right quadrant, Western and Central were also not far from the ideal. These two colleges had better images on the social factor (negative coordinate) than the clubs factor (positive coordinate).

Eastern, Grand Valley, Lake Superior, Northern, and Oakland were the next group of colleges positioned from the ideal. However, this group was positioned in the upper right quadrant and all had positive coordinates. Saginaw was positioned far from the ideal, having a very poor clubs image. Davenport's poor social image moved it far from the ideal, although Davenport's image was similar to Grand Valley and Central regarding clubs.

Ferris barely made it into the upper left quadrant with a clubs coordinate of -.066. The clubs image of Ferris was very competitive; however, once again the social factor moved Ferris out not only from the ideal, but the majority of the competition. Although the social image was poor, Ferris was slightly closer to the ideal than Northern and Oakland and much closer than Davenport and Saginaw Valley.

Figure 4.11 contains positions of institutions' social and cost factors. The ideal college image appeared in the lower left quadrant by itself. The competition was fairly dispersed throughout the map in the remaining three quadrants.

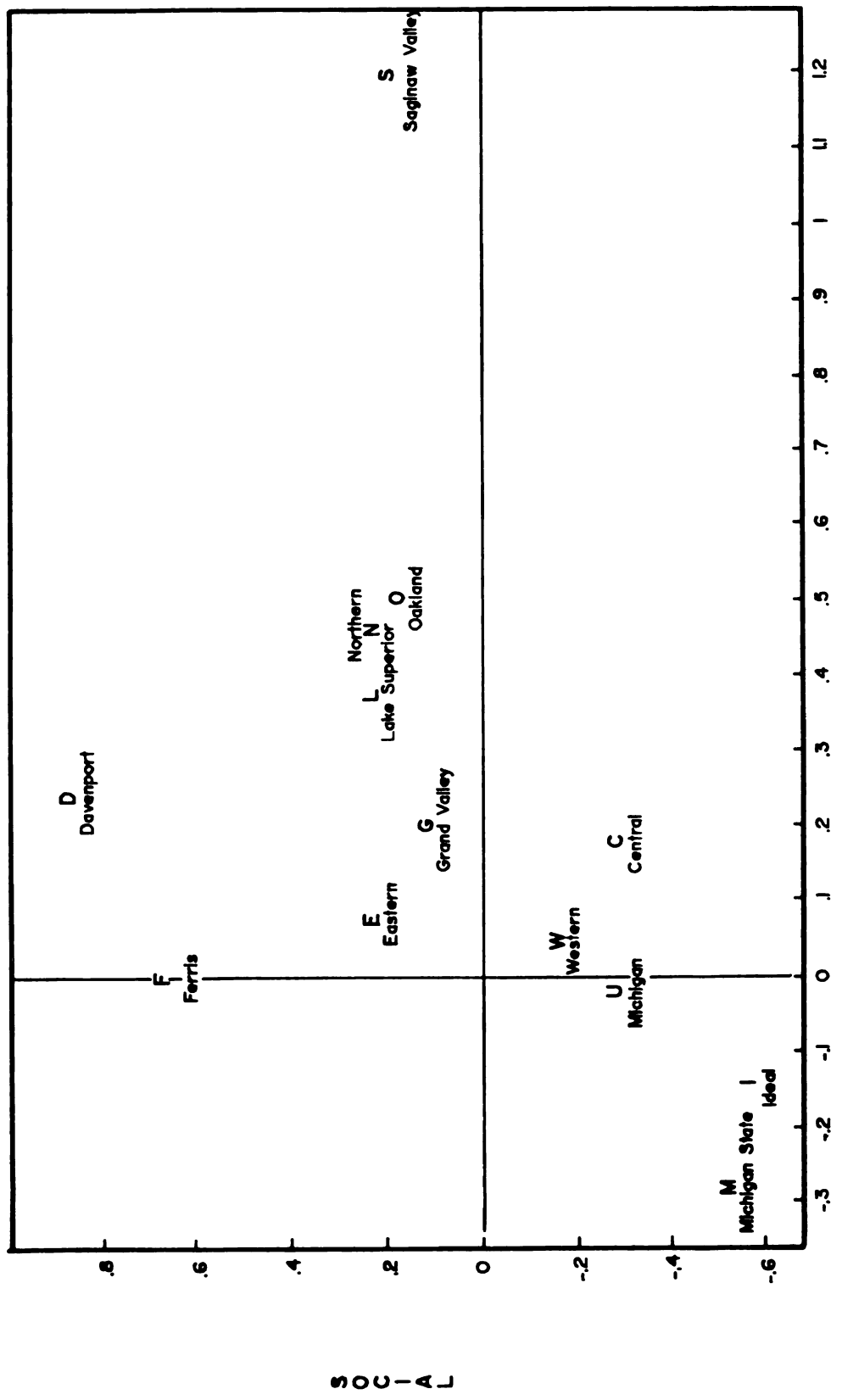

Figure 4.10.--Institutional positions with social and clubs factors.

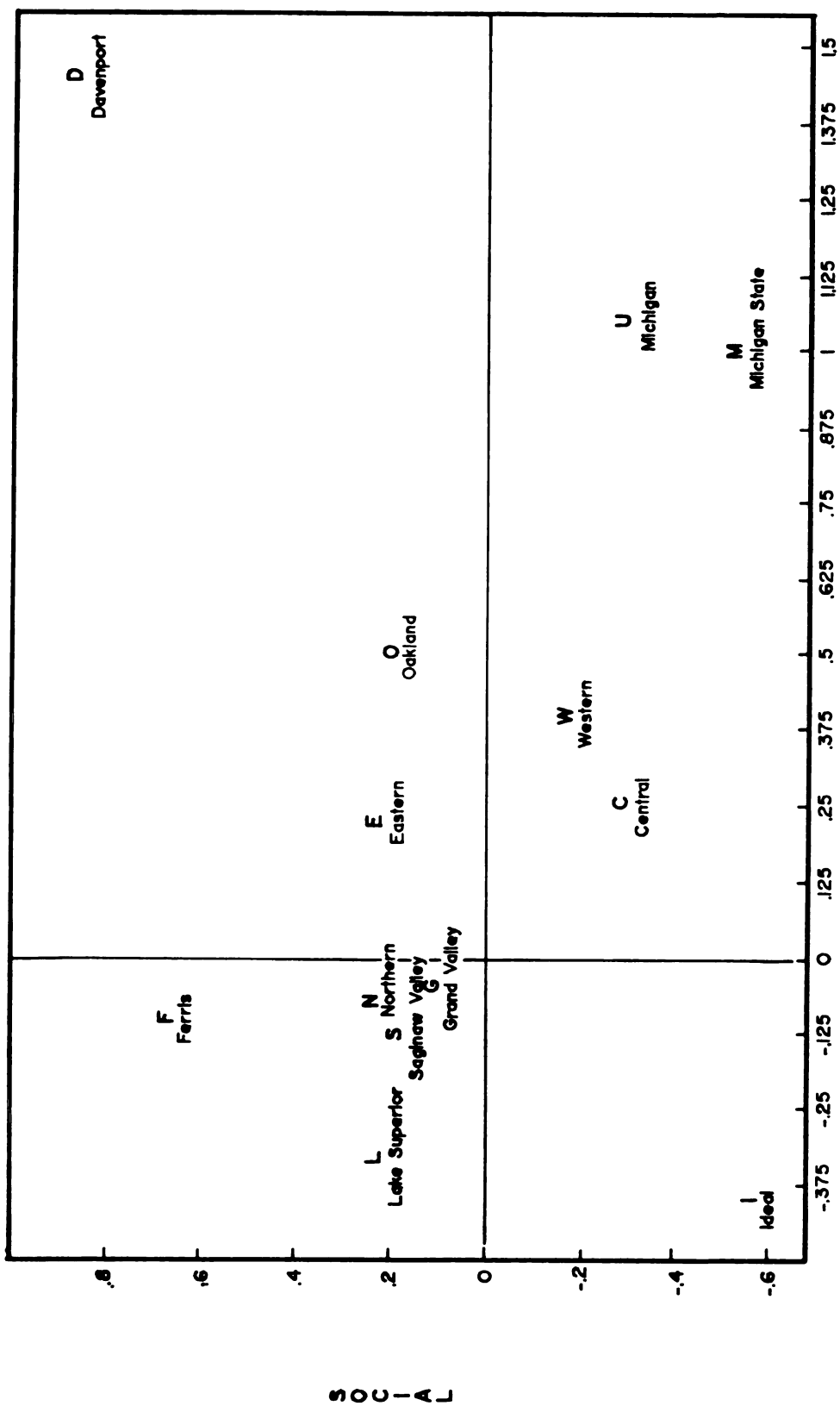

Figure 4.11.--Institutional positions with social and cost factors.

The upper right quadrant was the most distant from the ideal rating. Eastern, Oakland, and Davenport were positioned here, with Davenport receiving its worst image. Davenport was seen as very poor on both the cost and social factors. It was not surprising that only six respondents in the study stated a second-choice preference for Davenport.

The lower right quadrant contained Central, Western, the University of Michigan, and Michigan State. These institutions had strong social images but were seen as more expensive.

Finally, the upper left quadrant exposed positions of Ferris, Lake Superior, Saginaw Valley, Northern, and Grand Valley. These colleges were also colleges with lower enrollment than Ferris. However, they held a better social position than Ferris. Although Ferris had strength regarding the cost factor, the social factor again separated Ferris from all competitors. Lake Superior was seen as statistically equal to Ferris on the social factor; however, the Lake Superior subsample was very small.

Since the ideal cost rating was positioned to the far left, colleges to the right of zero become less affordable to Ferris students. A tradeoff situation could occur as students accept a less favorably positioned college, socially, rather than pay a higher price to attend college.

Two sets of colleges were positioned the most favorably on this map. Central and Western excelled socially but were seen as being more expensive to attend. Lake Superior, Saginaw Valley, Northern,

and Grand Valley, however, were seen as being closer to the ideal regarding price. Compared to Central and Western, however, these colleges were seen as being less social.

The eighth map constructed exposes size and clubs positions (Figure 4.12). Again, the ideal size was seen as being closer to zero, and Ferris was positioned in the same quadrant as the ideal. All remaining colleges were dispersed throughout three quadrants.

Ferris occupied one of its best positions on this map. Ferris was the only college with negative coordinates on both factors. The distinct position Ferris held reflects the available business clubs previously noted. In addition, for the 1986-87 school year, the Ferris chapter of the Society for the Advancement of Management received the highest international award available.

Close competitors on this map were Western Michigan, Eastern Michigan, Central Michigan, and Grand Valley. However, as noted in the MANOVA test regarding clubs, Western, Eastern, and Grand Valley were not seen as being different from Ferris. Grand Valley's size image was closer to the ideal than Western, Eastern, and Central, whereas Western and Eastern were positioned closer to the ideal on the clubs factor.

Figure 4.13 shows institutional positions on size and cost factors. Ideal size is located near zero as before. Many colleges moved into the quadrant containing the ideal college on this map.

Northern, Ferris, Grand Valley, Saginaw Valley, and Lake Superior appeared closest to the ideal rating. These five colleges held the best positions on both cost and size factors. Fifteen of

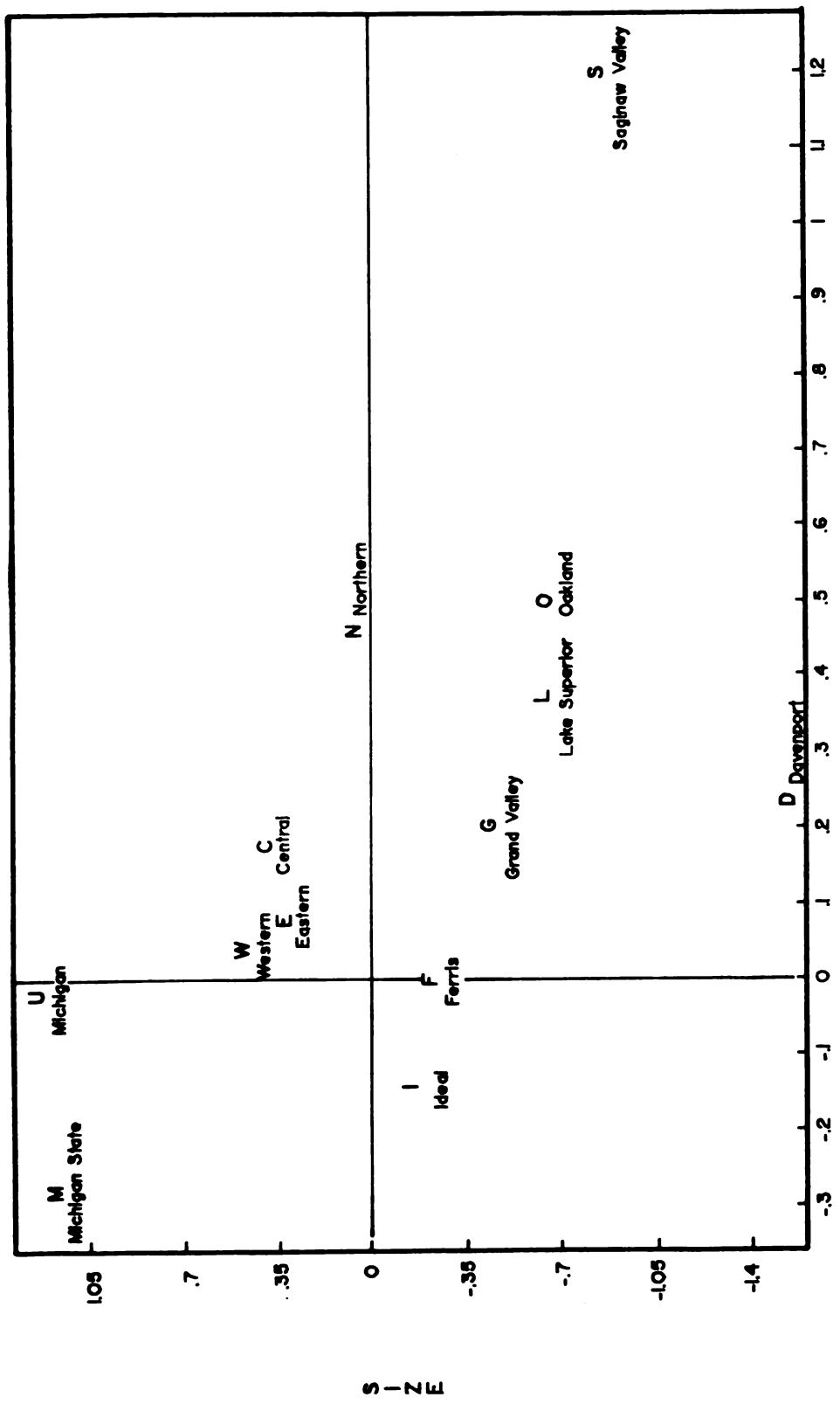

Figure 4.12.--Institutional positions with size and clubs factors.

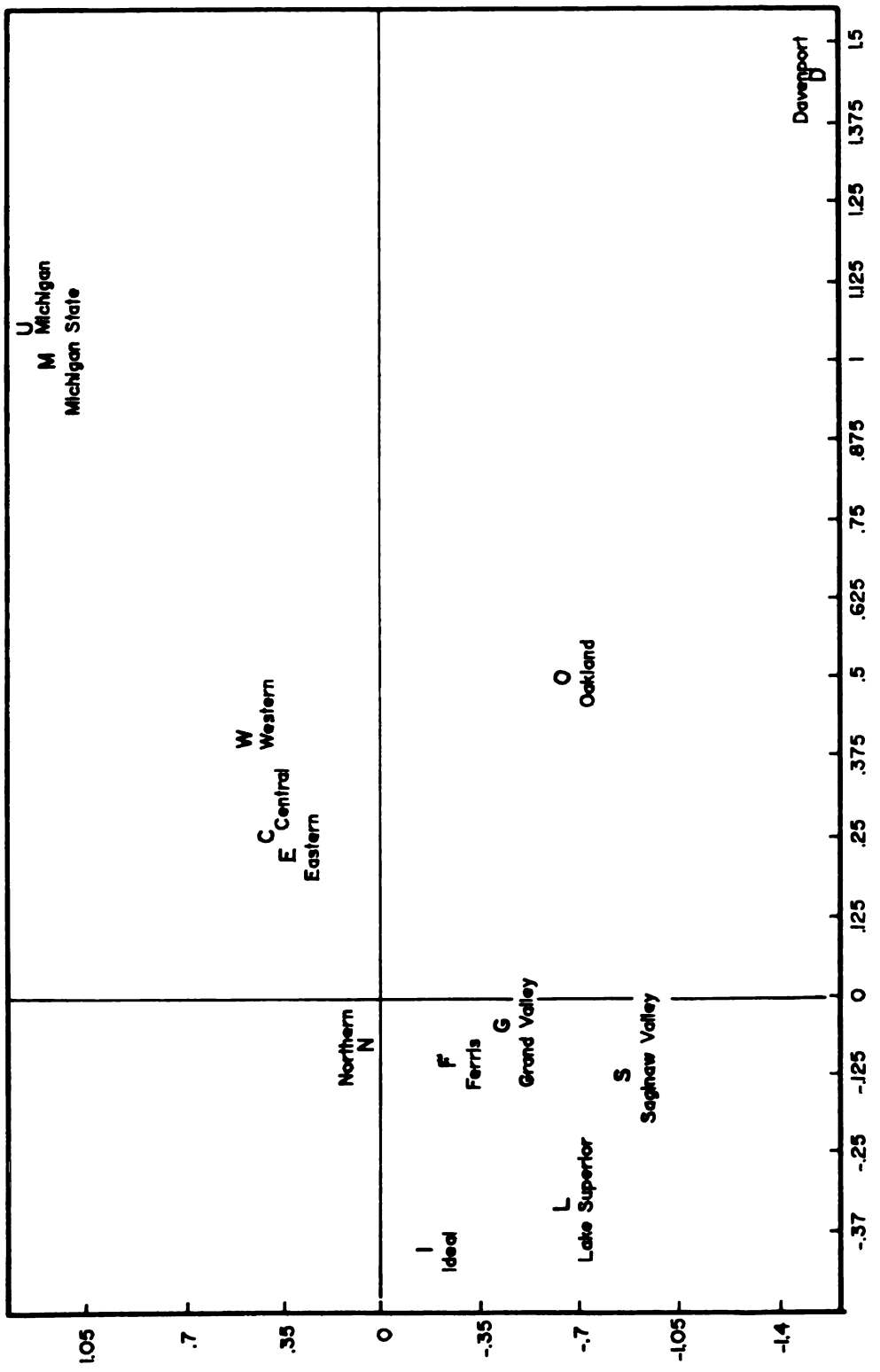

Figure 4.13.--Institutional positions with size and cost factors.

the 27 students responding to Lake Superior and Northern were from the Upper Peninsula, resulting in lower travel expenses and, therefore, less cost to attend college.

Eastern, Central, and Western were clustered together and were seen as more expensive and larger than the five colleges just noted. The University of Michigan and Michigan State were seen as even higher in cost and larger in size. Oakland University was seen as more expensive than Eastern, Central, and Western, but average in size, although the actual enrollment of Oakland was slightly greater than Ferris. Davenport's image was that of a small, expensive college.

Improvement in institutional image may not always involve actual product improvements, but further emphasis of the attributes it already possesses. The image of size by Ferris freshman students was close to the ideal, and the cost of attending Ferris was very competitive within a small circle of competing colleges (Northern Michigan, Grand Valley, Lake Superior, and Saginaw Valley).

Figure 4.14 contains the final set of factor combinations. Clubs and cost factors formed a smaller lower left quadrant that contained both the ideal and Ferris. This map was the second of the ten maps in which Ferris occupied a distinct position.

Only two colleges were perceived as significantly equivalent to Ferris on both factors. These were Lake Superior and Grand Valley; however, Lake Superior's would possibly have been significantly different had the subsample been larger. Grand Valley was perceived as one of Ferris State's closest competitors on most factors. Its

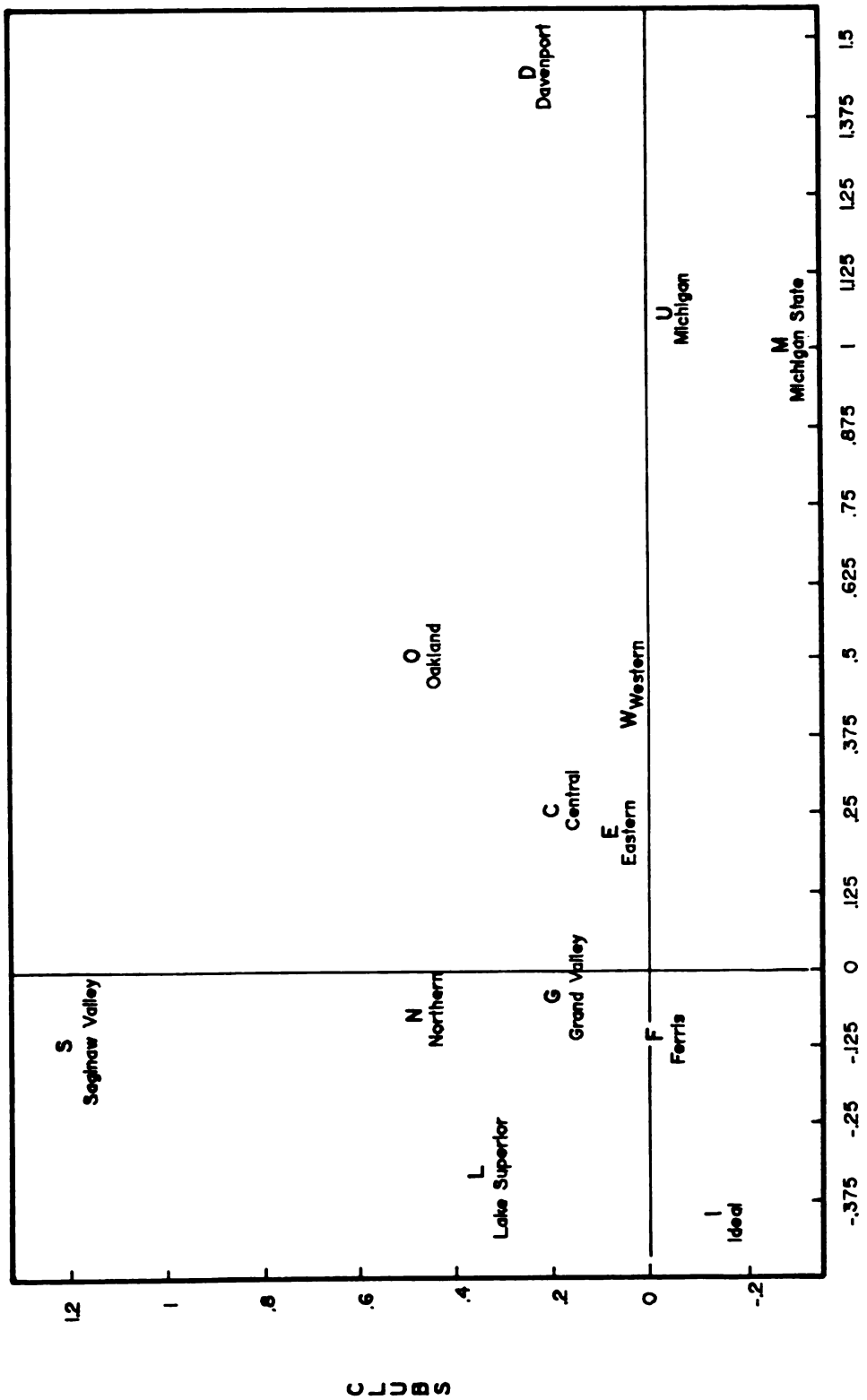

Figure 4.14.--Institutional positions with clubs and cost factors.

image was no different from Ferris regarding the cost, clubs, size, and academic factors. In addition, Grand Valley was perceived as having a better social position.

Saginaw Valley and Northern were in a poor position regarding clubs, whereas Michigan and Michigan State were seen as being high-cost colleges. Eastern, Central, and Western appeared in the upper right quadrant and had good images regarding clubs, but were more costly than Ferris and Grand Valley. Oakland was not perceived as having good clubs and was a bit more expensive than the Western and Central cluster. Finally, Davenport's expensive image was slightly offset by a fairly good rating on clubs. As a business college, appropriate organizations exist at Davenport to accommodate the degree programs. If clubs had factored in with social variables, Davenport's very poor social rating would have been less dramatic.

Positioning of Geographic Segments

The second research question dealt with possible geographic positioning differences. The five geographic segments of Michigan used for analyses were the southeast, southwest, northwest, northeast, and Upper Peninsula. The regions represent Ferris freshman students' permanent residence. The hypothesis was: There is no significant difference in the institutional position of five Michigan geographic regions of Ferris State College or competing colleges as perceived by first-time Ferris freshmen.

Excluding Ferris, only Michigan State, Central Michigan, and Western had subsamples adequate for further division by the five

geographic segments. A MANOVA test of significance was done for each college to determine whether image variations existed in the five geographic regions of Michigan according to the five factors (dependent variables). As seen in Table 4.11, all probability levels were greater than .05; i.e., no positioning differences were found to exist among geographic regions for Michigan State, Central, or Western.

Table 4.11.--MANOVA of geographic positions of colleges using five factors.

College	Wilks' Lambda	Approx. F	Probability Level
Michigan State	.7668	1.19	.259
Central Michigan	.8204	1.19	.262
Western Michigan	.6361	1.00	.465

For Ferris, a MANOVA test of the five factors over the five geographic regions resulted in a probability level of .071. Because the geographic area of the Upper Peninsula was represented with 27 students, a Type II error could have occurred. Also, for the purpose of demonstrating geographic mapping, the univariate analyses were examined. As Table 4.12 shows, size was the only significant factor causing differences in students' image of Ferris by geographic segments. The most consistent image from region to region was the academic factor.

Table 4.12.--MANOVA of five factors and five geographic segments of Ferris State College.

MANOVA of Factors and Geographic Segments	Wilks' Lambda	Approx. F	Probability Level
Ferris State College	.9344	1.50	.071
Univariate Analysis			
Factor 1--Academic		.01	1.000
Factor 2--Social		1.41	.230
Factor 3--Size		3.38	.010
Factor 4--Clubs		1.17	.325
Factor 5--Cost		1.31	.264

Three positioning maps were constructed to demonstrate image variations by geographic areas. Since size was the only factor with significant geographic image differences, size was positioned with the social, clubs, and cost factors. The academic factor was not used because almost no variation existed between the five segments. Table 4.13 shows the five geographic areas and the mean factor score coordinates used to plot segments on the three positioning maps.

Table 4.13.--Mean factor score coordinates of five geographic segments of Ferris State College.

	Geographic Region (n)	1 Academic	2 Social	3 Size	4 Clubs	5 Cost
1	Southeast (192)	.413	.778	-.297	.023	-.140
2	Southwest (108)	.406	.658	-.120	.060	-.101
3	Northwest (66)	.401	.560	.050	.026	-.093
4	Northeast (54)	.430	.559	-.058	-.108	.002
5	Upper Peninsula (27)	.417	.642	-.052	-.271	.118

Figure 4.15 shows that students from the southeast (Region 1) perceived Ferris as being smaller than did students from the other four regions. The position of clubs was more favorable with Region 5 students and decreased toward Regions 3, 2, and 1. However, statistically, no difference existed on the clubs factor.

A post hoc analysis of the five geographic regions showed that at the .05 level, Regions 1 and 2 differed on their perceptions of size of Ferris. Region 1 also differed from both Regions 3 and 4 and might have differed from Region 5 (Upper Peninsula) had the subsample been larger. The probability level of Regions 1 and 5 differing was .07. Region 2 did not differ from Regions 3, 4, or 5. By examining Figure 4.15, it becomes obvious why Regions 3, 4, and 5 did not differ on size perceptions of Ferris. The coordinates (Table 4.13) were minutely different. Areas 3, 4, and 5 represent the northern areas of Michigan, which have sparser populations. The size of Ferris appeared larger to these students compared to those from the more populated areas. Region 1 contains the larger institutions of Michigan, such as the University of Michigan, Michigan State University, and Eastern Michigan University.

The same geographic coordinates were used in Figures 4.16 and 4.17. In Figure 4.16, size and cost factors were used and geographic positions plotted. The order of Regions 1 to 5 was reversed on this map along the horizontal axis, as compared to the order on the preceding map (clubs). Students from more northern and southwestern regions perceived Ferris as costing more than did students from Region 1. However, no statistical difference was concluded for the

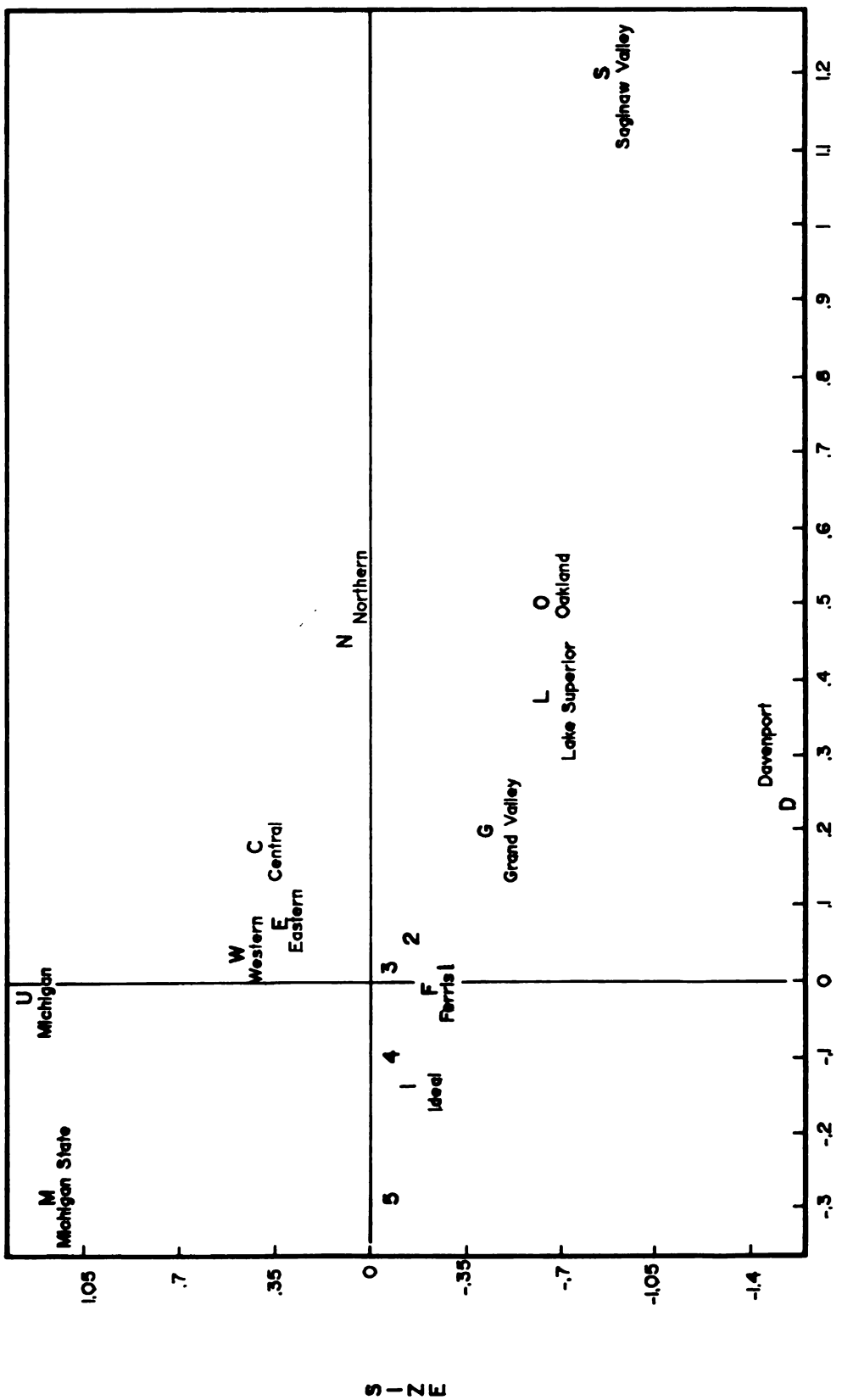

Figure 4.15.--Geographic positions of Ferris with size and clubs factors.

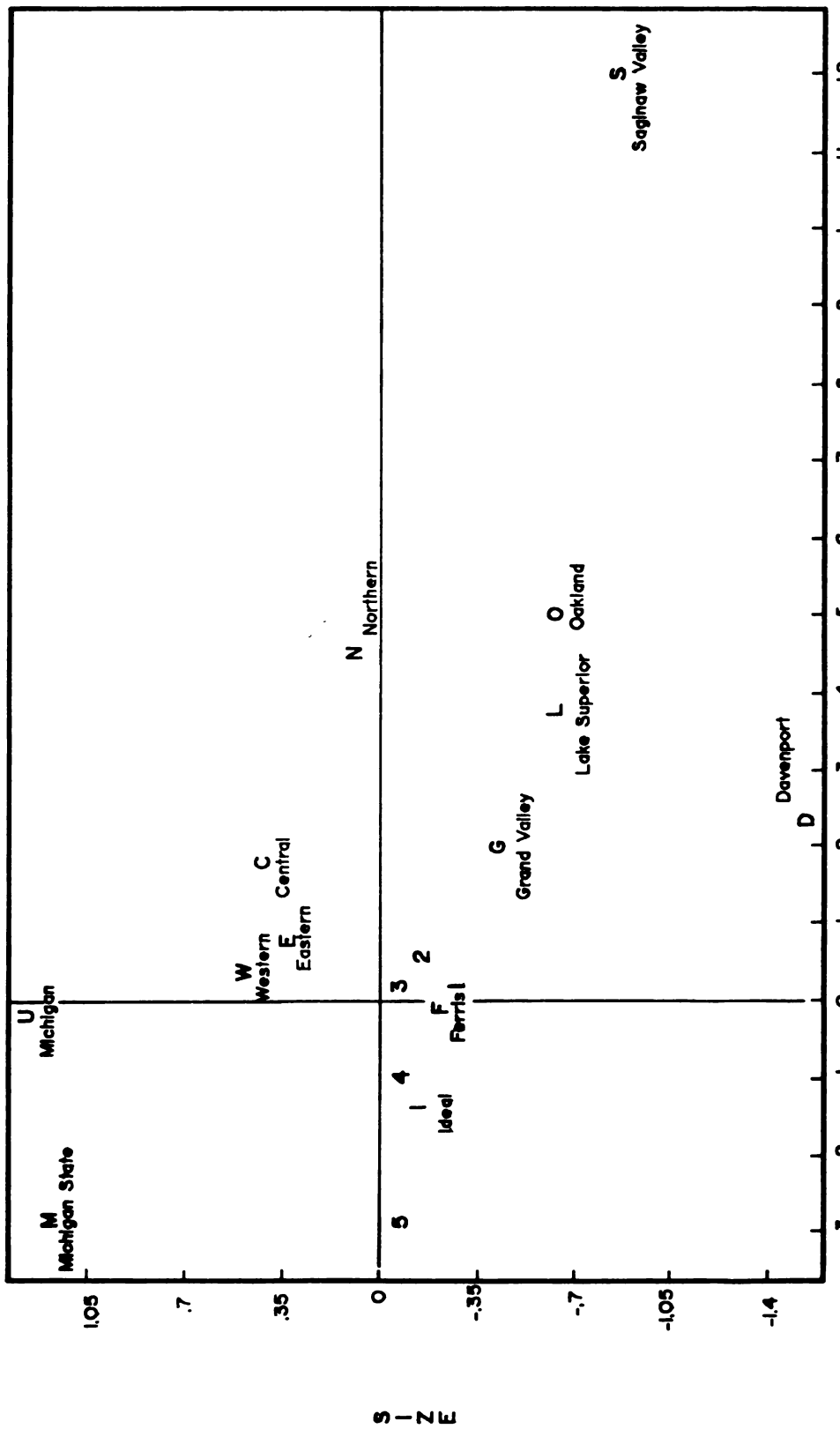

Figure 4.15.--Geographic positions of Ferris with size and clubs factors.

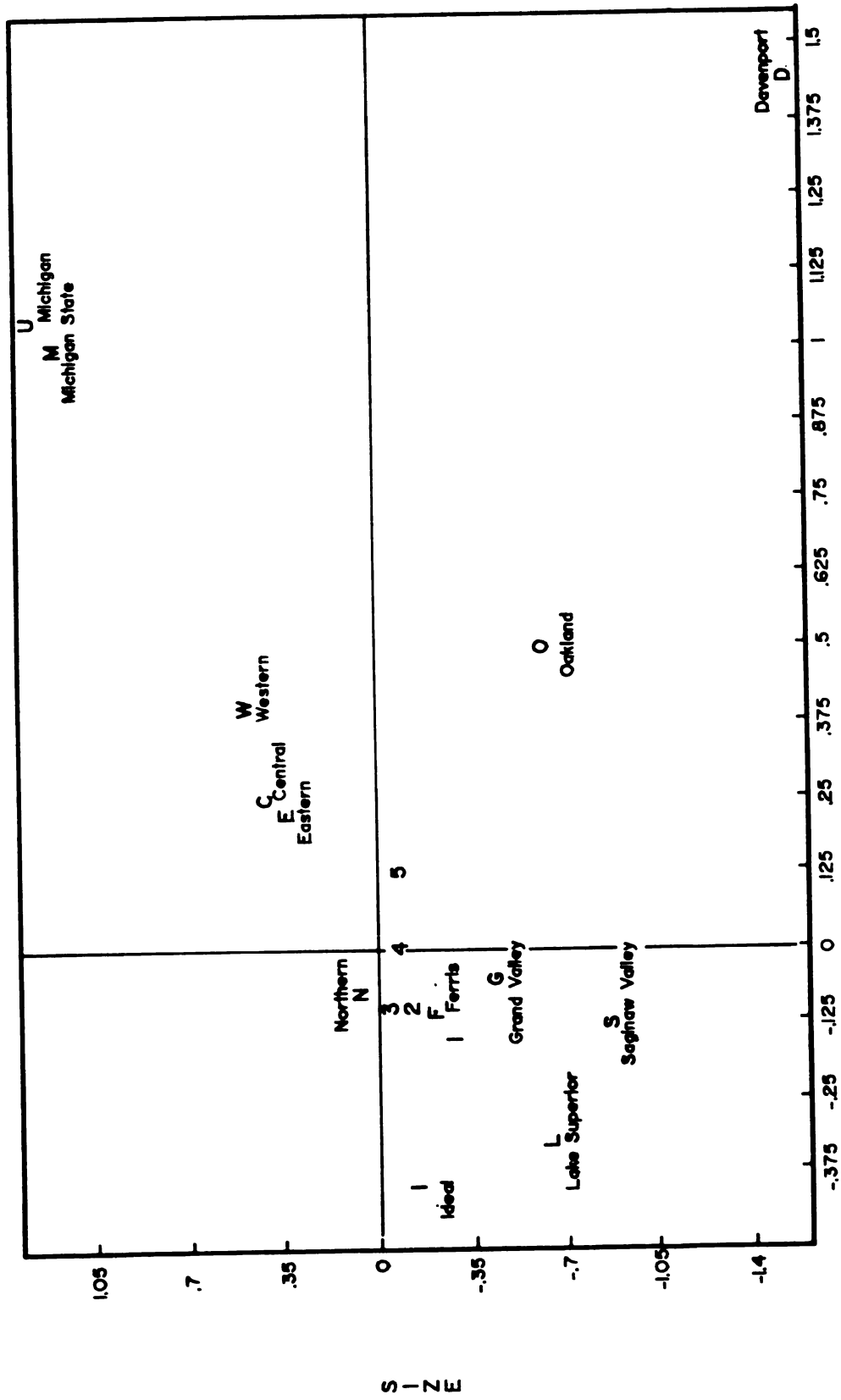

Figure 4.16.--Geographic positions of Ferris with size and cost factors.

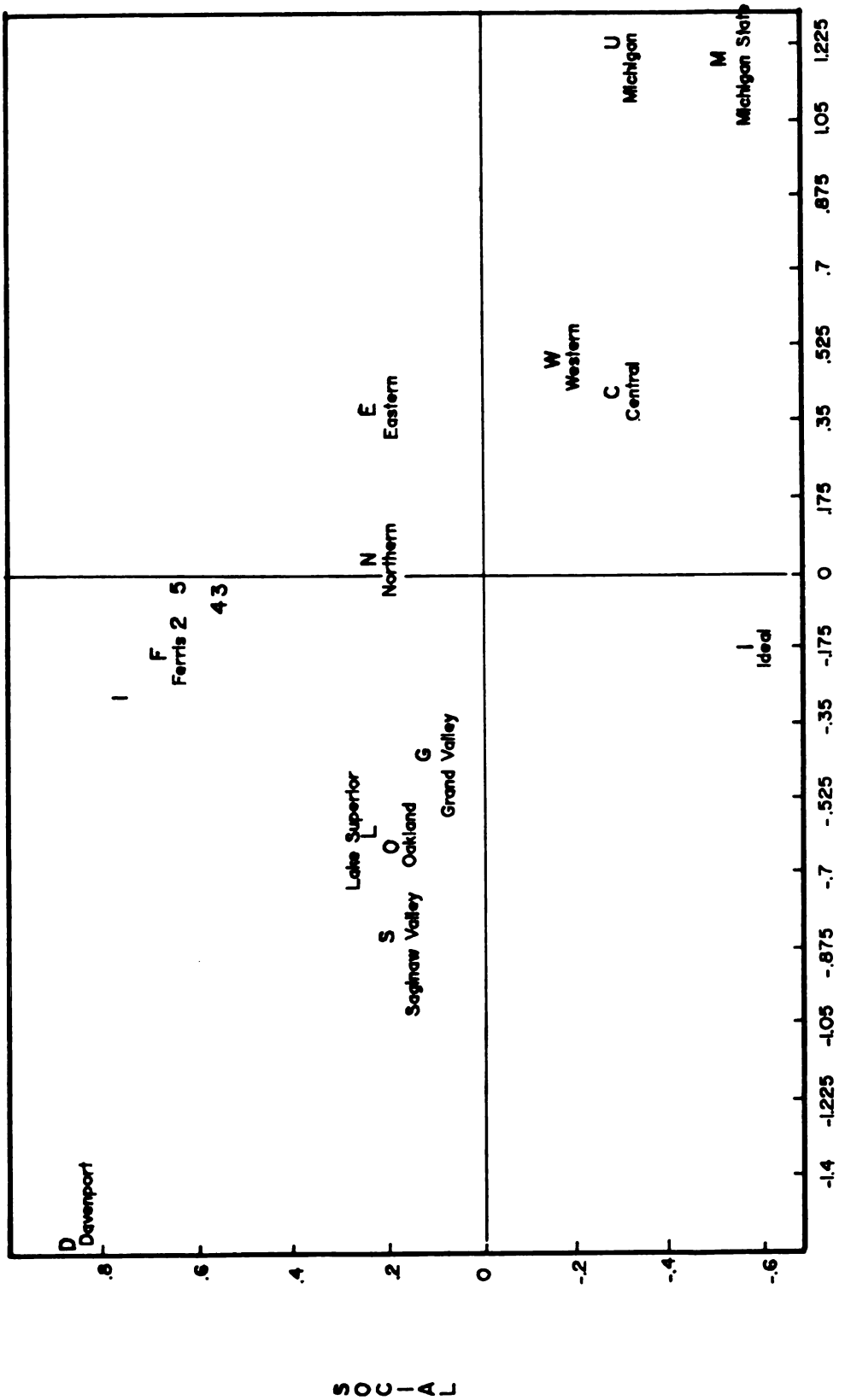

Figure 4.17.--Geographic positions of Ferris with social and size factors.

cost factor. The positions regarding cost were not surprising since the larger colleges located in Region 1 are more expensive to attend. Once again, the size factor indicated that Region 1 students perceived Ferris as being smaller than did students from other regions.

Figure 4.17 shows that Region 1 students considered Ferris to be less social than did other students. Although the difference was not statistically supported, the position was logical and worth noting. For example, the Big Ten schools (Michigan and Michigan State) are both located in Region 1, and the major metropolitan areas of Lansing and Detroit, also in Region 1, offer many more activities than the small community of Big Rapids.

Since larger subsamples may have produced statistical differences, examining the positions of clubs, cost, and social factors was worthwhile. The conclusions were logical, based on populations and offerings of different geographic areas of Michigan. Also, because many students come to Ferris from Region 1 (43% of the sample), some factors may need more attention than originally suspected. The social factor as perceived by Region 1 students was particularly low. The lower perceived cost of attending Ferris, on the other hand, may be a factor that attracts students away from the numerous competing southeastern colleges.

Positioning of Ferris State and the Ideal College

The third research question involved determining whether Ferris and the ideal college differed. MANOVA was used to determine the

existence of factor differences. Using the five factors as the dependent variables and Ferris and the ideal college as the independent variables, the two images were perceived as being significantly different (.000 level). (See Table 4.14.)

Table 4.14.--MANOVA of Ferris and the ideal college.

Factors	Wilks' Lambda	Exact F	Probability Level
All Factors	.3187	387.42	.000
Univariate Analysis			
Factor 3--Size		.09	.758
Factor 4--Clubs		6.13	.013
Factor 1--Academic		734.04	.000
Factor 2--Social		795.28	.000
Factor 5--Cost		57.81	.000

Ferris differed from the ideal on all factors except size. See Table 4.14 for univariate analyses of factors. For the clubs factor, Ferris differed from the ideal at the .013 level. Academic, social, and cost factors differed at the .000 level.

The positioning maps previously discussed showed the ideal college position on each combination of pairs of factors (Figures 4.5 to 4.14). Ferris State's main strength when compared to the ideal college was the size factor. The results strongly indicate that a medium-size college such as Ferris was preferred by the Ferris freshman business students.

Although Ferris differed from the ideal on the four remaining factors, the clubs variable was a fairly strong point for Ferris.

Only the University of Michigan, Michigan State, and Ferris had negative coordinates. Ferris was seen as being equal to the University of Michigan on the clubs factor. When size and clubs were positioned together, Ferris was seen as holding a dominant position, closer to the ideal than any other college.

Ferris also was positioned fairly competitively on cost. Although distinct from the ideal, Ferris and four other small to medium colleges had negative coordinates. Clubs and cost together exposed Ferris as being in an excellent position in relation to the ideal, as Ferris State was seen as being closer to the ideal than any other college on this positioning map. However, size and cost together resulted in an average to good position for Ferris as five colleges were clustered close to the ideal.

Ferris was positioned fairly competitively, but not distinctly different regarding the academic factor. Most colleges were seen as equal, but all were fairly distant from the ideal. The University of Michigan and Davenport College held positions closer to the ideal.

The weakest position held by Ferris in relation to the ideal rating was the social factor. Several colleges were close to the ideal, particularly Michigan State. Central Michigan, another major competitor, had an excellent social image. Ferris was seen as being very far from the ideal socially. In fact, as seen very clearly in Figure 4.11, Ferris State was positioned on the opposite section of the map from the ideal.

Summary of Positioning Maps

On the academic factor, the image of Ferris was similar to most competitors. However, Davenport and the University of Michigan were positioned much closer to the ideal, while Central Michigan had the poorest academic image. The majority of colleges were positioned quite distant from the ideal college image on the academic factor.

Socially, Ferris State's image was distinctly unfavorable. Dorm life and sports variables were primary contributors to the poor social image of Ferris. Several competitors, however, had favorable social images. In order, from a position closest to the ideal were Michigan State, Central, the University of Michigan, and Western Michigan.

The best position on any one factor for Ferris was the position resulting from the size factor. Ferris was closer to the ideal than any other college. Colleges also positioned fairly closely to the ideal were Northern, Grand Valley, Lake Superior, and Oakland. Davenport College was perceived as being very small, while Michigan State and the University of Michigan had an image of being very large.

The clubs factor was also favorable for Ferris. However, Michigan State was rated more favorably than even the ideal college on the clubs factor. Both Ferris and the University of Michigan were positioned close to the ideal college. Eastern and Western were positioned just behind Ferris on clubs.

Ferris was perceived as being competitive on the cost factor. Lake Superior was very close to the ideal on the cost factor, followed by a group of institutions. The group included Saginaw Valley, Ferris, Northern, and Grand Valley.

Geographic differences occurred regarding the size factor for Ferris. A MANOVA test revealed that students from Region 1, southeastern Michigan, perceived Ferris as being smaller than did students from the other four regions. Although not statistically significant at the .05 level, the social, cost, and clubs factors varied in their geographic position on the maps (Figures 4.15 to 4.17). Ranging in a pattern from southeastern Michigan to northern Michigan, Ferris students from the southeastern region perceived the clubs and social factors to be less favorable, but perceived cost to be less expensive.

In conclusion, Ferris was distinctly positioned on the size factor and perceived as not being different from the ideal college. Ferris was competitive on the cost factor with colleges similar in size to Ferris. However, Ferris was competitive on the clubs factor with the larger institutions of the University of Michigan, Western, Eastern, and Central. Ferris was competitive on the academic factor with most of the institutions in the marketplace, excluding the University of Michigan and Davenport. However, most colleges were positioned far from the ideal academically. Socially, Ferris was not at all competitive with the other colleges in the study. Ferris was positioned on the opposite end of the positioning map from the ideal college.

CHAPTER V

CONCLUSIONS

The marketing techniques successfully used by major corporations have more recently made their way into nonprofit organizations such as symphony orchestras, nonprofit health organizations, and higher education. More often than not, marketing has been employed out of necessity. The declining pool of 18 year olds triggered the use of such marketing devices as target marketing, program development, demographic analyses, marketing research, and promotional development. The move in corporations from simple sales departments to multifaceted marketing departments, headed by a vice-president of marketing, parallels the move in higher education from publicity departments to market-oriented admissions offices, some with marketing directors. The lesson for both profit and nonprofit organizations is that marketing is not an ad hoc process to be used to cure the ills of the moment, but an ongoing one, used on a daily basis to assure that the proper products or services are available to customers.

This image study represents only one aspect of marketing and only one aspect of marketing research. However, it is an important tool that can help link the clientele to administrative decision making. Administrators may not know the extent of how students'

perceptions differ from what was thought to be their perceptions. Students' images of a college are often different from what may actually exist. Furthermore, actual images are more crucial to strategic planning than what actually exists. For example, various publics may not be informed about the quality programs offered by an institution. These publics may be holding on to old images that are no longer appropriate. Nevertheless, their images are real and need to be dealt with as an organization develops and improves its products and services. Richards and Sherratt (1981) remarked that a sound image leads to financial survival, even in competitive times.

Factor Solution

A total of 23 variables were selected for the study to measure institutional images of Ferris freshman School of Business students. Respondents rated Ferris, a competitor, and an ideal college using 23 semantic phrases such as great/boring dorm life and unique/general degree programs. The 23 variables reduced to five factors using principal axis factoring and varimax rotation. Using factor scores resulting from factor analysis, Ferris State, 11 Michigan competitors, and an ideal college were plotted on two-dimensional maps. Students from five geographic segments of Michigan were also examined for positioning differences.

The 23 variables reduced to five factors through principal axis factoring and varimax rotation. The five resulting factors were academic, social, size, clubs, and cost. Factor scores were then calculated on each factor for each competing institution. Score

coordinates were plotted on ten positioning maps. The academic factor primarily contained faculty, program, career, and job variables. The social factor included dorm life, active campus life, friendly campus, and sports-related variables. Class size and size of college loaded on the size factor. Available clubs and business clubs were components of the fourth factor, clubs. The remaining two variables, cost and easy to get a degree, loaded on the fifth factor. Easy to get a degree loaded on the cost factor and did not correlate with the academic factor. The fact that 27% of respondents were enrolled in a two-year program in business probably contributed to the development of this factor. Regarding the cost factor, students perceived getting an education at some institutions to be both quicker and cheaper than at other institutions.

All factors except clubs were found in other higher education positioning studies that were reviewed in Chapter II. The existence of the clubs dimension was explainable for two reasons: (a) the nature of the respondents, in that these students were business students, and (b) other social variables that loaded on the social factor resulted in a linear relationship that varied in a different pattern from the clubs variable. For example, Ferris State's social image was poor, while its clubs image was favorable.

The loadings for nearly every variable on its corresponding factor were very significant (.4 or above). Loadings of major variables of each factor were in most cases highly significant (.5 or above). The academic and social factors contained 17 of the 23 variables, indicating the importance of these two factors. The

academic factor was also the major factor found in most higher education positioning research.

The administrative variables such as financial aid, admissions, job placement, and location were originally thought to be a separate dimension, but were seen by students as being part of the academic and social domain. Convenient location, for example, had an interesting relationship with the social factor. Many Ferris students (about 43%) were from the southeastern region of Michigan, which contains the larger metropolitan areas of the state. Ferris, located in the northwestern region, was seen as being both less convenient and less social than most colleges. Conversely, the Big Ten colleges, located in the southeastern region, were seen as being more social and more convenient.

Conclusions on Five Primary Competitors

Primary competitors for Ferris, based on alternative colleges that students considered attending, were Central Michigan University, Michigan State University, and Western Michigan University. These colleges were also primary competitors based on institutional positions. In addition, Northern Michigan University and Grand Valley State College tended to occupy positions close to Ferris. As noted, a MANOVA test of the five factors revealed that the image of Ferris differed from each of these five institutions.

Ferris State and Central Michigan differed on all five factors. Ferris State's image was seen as superior to Central on the academic, clubs, cost, and size factors. However, 128 students reported a

preference for attending Central over other competitors. All four factors on an ANOVA test for Ferris and Central were significant at the .05 level. However, a drastic difference was perceived by students on the social factor. Central's mean social factor score was behind only one other college, Michigan State, and was seen as almost equal to the University of Michigan. Not only was Ferris perceived as inferior to Central (.000 level) on the social factor, but Ferris was positioned behind all colleges except Davenport.

The importance of improving on the social factor for Ferris was emphasized by the fact that when a factor analysis was performed across variables and institutions without including ideal ratings, the social and academic factors reversed; i.e., the social factor became Factor 1 and vice versa. Ferris business students placed a great deal of importance on the social images of colleges within the competitive environment.

To compete better with Central, social attributes of Ferris need to be improved. Although Ferris State's image was superior on all other factors, 128 students chose Central as their alternative college. Students may perceive Central to be a step up from Ferris regarding cost and size, but not as large a step as attending a Big Ten institution.

Michigan State, with a response of 99, was the second most popular college alternative of respondents surveyed. Ferris and Michigan State differed on all factors except the academic factor.

However, the ANOVA probability level on the academic factor was very close to being significant (.053). For practical strategic planning purposes, administrators should consider Michigan State's academic image as being superior to Ferris. Statistically, only the University of Michigan and Davenport College were seen as occupying a superior position to Ferris on the academic factor.

Ferris was perceived as having a better image than Michigan State regarding size and cost factors. Michigan State held a superior position in the minds of Ferris business students regarding the clubs and social factors. Using the ANOVA test, all four factors differed at probability levels of .002 or less between Ferris and Michigan State. Michigan State's image even surpassed the ideal rating on clubs, and its image was closer to the ideal than any other college regarding the social factor.

To compete better with Michigan State, Ferris might emphasize its cost and size advantages. For example, unlike many competitors, Ferris does not charge its students computer usage fees. Also, activity fees at Ferris, historically, have been relatively low. The study indicated that, on the average, Ferris freshman students preferred a medium-size college. Because of its size, Ferris automatically serves the medium-size market segment. Both academic and social images need much improvement when compared to the image of Michigan State held by Ferris students.

Western Michigan's academic and clubs images were not statistically different from Ferris State's image. Socially, Western had a better image than Ferris, receiving much higher ratings by the

Ferris freshmen on the variables active campus life, great dorm life, and exciting spectator sports. Western, however, was perceived as being significantly larger in size than Ferris. Ferris and Western were also perceived as being significantly different on the variable cost, with Western seen as being higher in cost.

Northern Michigan and Ferris differed on only two factors. These factors were social and clubs, with ANOVA probability levels of .016 or less. Ferris held a superior position regarding clubs, while Northern held a superior position on the social factor. Northern was seen as being very similar to Ferris on the size, academic, and cost factors.

Grand Valley was perceived as being different from Ferris on only one variable and was therefore a significant competitor. Grand Valley and Ferris were similar regarding the academic, size, cost, and clubs factors. However, had the Grand Valley subsample of 17 been larger, Ferris would possibly have held a better position regarding clubs. Like most other colleges, Grand Valley also was seen as superior to Ferris regarding the social factor.

Northern, Grand Valley, and Ferris were seen as equals regarding most factors. These colleges tended to excel on size and cost factors when compared to larger institutions. However, the disadvantage of Ferris State's social image becomes a greater concern when Ferris is compared to these two similar competitors. Repositioning of Ferris State's social image may be necessary to compete better with Northern and Grand Valley. In addition, it is

important to select, develop, and emphasize specific attributes of the four factors (academic, clubs, cost, and size) that were seen as similar for all three colleges. Emphasis on variables such as faculty advising or career oriented would help to differentiate Ferris from Northern and Grand Valley. The School of Business policy, in particular, of having advisors sign schedules of only freshman students might be revised to encourage more student-faculty interaction at all levels. Image enhancements on individual variables will boost the overall image of each factor.

Repositioning and Recommendations for Ferris

The position of Ferris State, 11 competitors, and an ideal college was examined using MANOVA and positioning maps. Ferris was perceived as being different from all competitors except Oakland University at the .05 level. However, the subsample for Oakland was only six respondents and the alpha level was .068. After viewing the positions of Ferris and Oakland, the two would probably have differed had the subsample been larger. Also at the .05 level, Ferris State was perceived as being different from the ideal college on all factors except size.

On the academic factor Ferris held a position close to most of the competitors in the study. The University of Michigan and Davenport were seen as being more academic, while Central Michigan was in a poor position academically. Interestingly, with a few exceptions, most colleges were seen as similar on the academic factor. However, most colleges were positioned far from the ideal

college regarding the academic image. Davenport was closer to the ideal than any other college on the academic factor.

Repositioning decisions must begin with top-level administrators and must permeate throughout the institution. Strategic plans are then developed to carry out the necessary changes. A college may not want to be repositioned next to the ideal on every factor. Or the cost of repositioning may be too high. Davenport, a private college, holds an excellent academic position, but students pay higher tuition fees. It would be possible, however, for Ferris to examine the academic variables and to develop objectives and goals for moving closer to the ideal. Career oriented, for example, is part of the mission of the college. However, it was not seen as being distinct in the minds of the freshmen surveyed when compared to competing colleges. To improve the career-oriented position, for example, Ferris could offer more co-ops and work internships.

A distinct difference exists between enhancing an image based on solid product characteristic and enhancing an image of a product containing deficiencies. As noted, advising improvements could be made by requiring students to see advisors throughout their degree program, rather than just as freshmen (a Ferris policy since about 1983). Since many colleges were seen as being academically equal, it is possible that students just do not see that much difference in academic traits between institutions. However, the possibilities of improving on individual academic variables should not be dismissed.

The social factor put Ferris and Davenport in a very poor position. Michigan State was positioned next to the ideal socially,

while the University of Michigan and Central occupied the next best position. Western's social image was slightly behind these two colleges. A large group of colleges (Lake Superior, Saginaw Valley, Grand Valley, Northern, Eastern, and Oakland) were clustered in the middle of the social positioning grid. However, Ferris was well behind all of these colleges.

Several explanations exist to account for the low social image received by Ferris. The top three variables loading on the factor were dorm life, active campus, and spectator sports. These types of variables have a great association with students' personal lives. A bias may exist in that it is possible for freshmen from any college to rate dorm life low. Dorm living is one of the bigger complaints of college students. And Ferris students perceived dorm life to be considerably better at every other college surveyed. Part of the social problem may be a location problem, since location loaded fairly high (.3792) on the social factor. Ferris is located in a small, rural northern community, while many of its students (43% of respondents) come from southeastern Michigan, home of the Detroit Tigers, Detroit Lions, Michigan State Spartans, University of Michigan Wolverines, Detroit Red Wings, and many other sports and cultural activities.

If repositioning on any of the five factors were to occur at Ferris, the social factor would need the most attention. The social position of Ferris was seen as being farthest from both the ideal and most competitors. Once again, repositioning is a strategic

management decision, requiring a great deal of planning and follow-through to change actual product or service characteristics. Some changes may not be desired. For example, although the Mid-American Conference may provide more exciting spectator sports, Ferris may want to remain in the Great Lakes Intercollegiate Athletic Conference (GLIAC) because of the size of its student body; however, Ferris may want to concentrate on the development of specific sports such as football, hockey, or other high spectator sports. Even though Ferris has won the GLIAC President's cup for seven consecutive years, the image of spectator sports of Ferris was lower than any other college except Oakland and Davenport. Dorm life and campus activities may be two areas where strategic planning and implementation could help improve the social position of Ferris.

The remaining three factors, size, clubs, and cost, found Ferris in a much better position. Freshman students rated Ferris closer to the ideal than any other college on the size factor. As cost is a factor that is difficult to change, Ferris was fortunate to have a favorable position on this factor. Emphasizing some of the actual costs benefits of Ferris could enhance the position even more. The position of Ferris regarding clubs was also close to the ideal. Administrators and faculty need to continue to support these organizations and encourage participation of students in all types of clubs, particularly clubs associated with their career. More students could be encouraged to join these clubs as freshmen, rather than as upperclassmen. Although these factors resulted in favorable positions for Ferris, the images need to be strategically

incorporated into the overall goals of the college. As stated by Grossman (1987), "no matter how good your programs and facilities may be, if you don't let the world know about them, you've limited your chances for success."

Major repositioning decisions should not be made on this sample of freshman students alone. Representation from other students would be needed to verify that all students perceived Ferris to be positioned as these freshman students saw the institution. As indicated by the Dahlquist and Parker (1986) study, social images improved at Ferris as students progressed from freshman status to senior status. Also, high school students should be surveyed and included in the overall institutional planning and decision making. This particular study of freshman students, however, was very useful as freshman students have the highest attrition rates in undergraduate institutions.

Dominant positions on certain factors may be desired by an institution. For example, Davenport held a dominant academic position in the minds of freshman respondents. Central and Michigan State dominated the social area, while Ferris held favorable positions on the size, cost, and clubs variables. The cost factor was important in that, although Ferris may be lacking important attributes from Factor 1 or 2, many students may not be able to afford to attend colleges such as Eastern, Western, Oakland, Michigan State, and Davenport. Ferris held a distinguished position in relation to the ideal on the size variable. A college cannot be all

things to all people. This idea is incorporated into the purpose and goal of marketing and segmentation and begins with the mission of the institution.

Ferris competed favorably with medium-size colleges on the size and cost factors. However, Ferris occupied a unique niche when clubs was combined with either cost or size. Because Ferris competed well with larger institutions on the clubs variable, smaller colleges moved away from the ideal when clubs and cost or clubs and size were combined.

Another possibility for repositioning, due to the career orientation of the mission of Ferris, might be to develop better job and career strategies. The School of Business has had a pattern of gearing students toward specific career paths, such as accounting, marketing sales, court reporting, insurance, and commercial art. In addition, more recently Ferris has offered degrees in such unique programs as professional golf management and professional tennis management. However, a large number of business students graduate with general marketing or business administration degrees. Since the career path is not as obvious for these students, repositioning strategies might include better career guidance and a special course on career choice.

Conclusions on Geographic Segments

Only the size factor resulted in statistical variations in geographic segments. Students from the southeastern region perceived Ferris as smaller than did students from the other four regions.

However, from a practical viewpoint, it is impossible to ignore the information presented on the positioning maps on the social, cost, and clubs factors. From an administrative planning perspective, it was important to note that a trend occurred as geographic areas changed from the more populated southeastern region to the less populated Upper Peninsula. Students from more populated areas found Ferris more affordable, but less social and less attractive regarding clubs.

The findings from the geographic analysis were not surprising due to the higher cost of living in the larger metropolitan areas, the lower tuition of Ferris compared to Michigan or Michigan State, and the greater number of sports and social activities available in southeastern Michigan as opposed to northwestern Michigan. Ferris administrators may choose to develop specific information brochures targeted toward the southeastern region, since about 43% of Ferris students come from this area. Emphasis on availability and quality of the business clubs might be appropriate. In one sense, however, there is nothing Ferris can do about its main campus location. Ferris is simply located in a rural environment. To promote falsely would only harm the overall image of the institution. However, realistic photos, brochures, or videos depicting actual social events would help inform students about Ferris State's social offerings. Emphasizing the cost factor in some way might also be beneficial, since attending Ferris costs about $500 less than Michigan State and $1,000 less per year than the University of Michigan.

The Method and Recommendations for Further Study

The factor analysis method provided a relatively straightforward approach for institutional positioning. This attribute-based method allows the researcher to select both variables that are common to all institutions of higher education and variables, such as business clubs, that are unique to certain institutions or schools. Using the multidimensional scaling method does not permit unique variables to surface. For example, most MDS solutions reviewed in Chapter II resulted in only two segmenting dimensions--academic and size. Factor analysis permitted variables such as business clubs and career oriented to be examined as important variables within specific factors.

The number of variables that can be used in a factor solution is limited only by the willingness of the respondents completing the study. Variables can always be deleted from the factor analysis if the variables are ambiguous or illogical. Easy to get a degree, for example, was intended as an academic variable, but loaded on the cost factor. It was left in the analysis to show this relationship and the significance of the two-year degree for Ferris business students.

One unexpected result with the large sample of 472 students was the small subsamples of respondents' second-choice college. Students who would have attended Central Michigan, Michigan State, and Western resulted in large subsamples. However, five colleges had subsamples of less than 20, and 66 students responded with a second-choice college outside the primary competitive environment. Possible solutions to correct this deficiency include drawing a larger sample

or limiting the competition to ten or less and forcing students to mark one of the preselected colleges in the primary competitive marketplace. Most students have an image of at least one other college within the primary competitive environment. It is probably not likely that such a large number of students would actually attend out-of-state institutions. There is often a large difference between respondents' intended behavior and their actual behavior. Some students may have marked colleges because of fantasies rather than their pocketbooks.

Also regarding the sample, it may be worthwhile to interview students from each of the major colleges in the study. Obtaining an image of students' social perceptions from their actual college experience may indicate that these students were also dissatisfied with dorm life or other social attributes. In addition, spotting deficient characteristics of competitors would help Ferris administrators locate unsatisfied markets.

Small subsamples prevented some positioning differences from showing, statistically. However, positioning plots revealed potential differences in some colleges from the position Ferris held. The validity of the study, evidenced from the correlation of .94 between actual enrollment and perceived size, lends support to the existence of potential image variations of colleges with small subsamples. Using larger subsamples may have revealed positioning differences, even when probability levels were .20 or less. For example, Oakland differed from Ferris at a probability level of .201,

socially. Oakland was positioned in Figure 4.5 near Northern and Eastern, which were both perceived as statistically better than Ferris on the social factor at probability levels of .016 and .009, respectively. The advantage the positioning method offers of visual mapping of colleges allows the researcher to view potential differences and detect possible Type II errors.

The five-point scale was adequate for this study. Most of the research on scales has supported the use of either five- or seven-point scales, depending on the nature of the study and the clientele. Through the pretest results, the respondents were found to be comfortable with the five-point scale. No difference was found in percentage of neutral responses checked with either scale. Even though the nature of this study was exploratory in some ways, a five-point scale would be quite adequate for future similar studies.

The use of semantic differential phrases provided a useful combination with the factor solution. While semantic adjectives measure meaning, Likert scales are more object centered. Semantic phrases measure both the object and the meaning attached to that object. Using semantic phrases allows the researcher to develop a tailored instrument, suited to a specific institution or competitive environment. For example, images of academic programs were measured using easy, wide selection, unique, and suitable, although the factor solution revealed that students interpreted easy to get a degree differently from what was intended. It is important to understand that the object being measured can be measured with many different meanings. Dorm life alone, for example, could be measured using 15

different adjectives, factored using principal axis factoring, and positioned on maps. The social and academic factors measured here were not inclusive of all possible perceptions of students, but were a measure of an indication of their perceptions regarding these dimensions. Positioning results using attribute-based methods depend on the variables used. The social position could be arbitrarily changed if different variables were used. However, careful planning and selection was used in this study to include variables relevant to Ferris State. Also, variables were used that had been tested in many other image studies in colleges across the nation.

Segmentation is crucial to strategic marketing planning. The business and freshman segments were further segmented by geographic regions. The geographic segmentation portion of the study produced only one factor with image variations by geographic regions. Region 1 (southeast) students perceived Ferris to be smaller than did students from the other four regions. Future studies using larger geographic subsamples may produce variations in clubs, cost, and social factors. The positions on the positioning grids showed variations in these three variables, but the regional variations were not found to be statistically different when a MANOVA test was done.

Future studies for use in strategic planning and development should also examine potential positioning differences in other segments, such as class standing, high school students, males versus females, urban versus rural students, degree program areas, two-year versus four-year degrees, religion, and so forth. A positioning

analysis of Ferris juniors would be useful to show how images change over time. The urban versus rural segment may produce regional differences that were hidden by the analysis of the five geographic regions, since students with both urban and rural backgrounds were present in each of the five geographic regions.

Summary of Conclusions

Overall, the factor method disclosed some very useful and interesting findings that would not have been found using nonattribute-based methods. The method is particularly useful for smaller colleges searching for a unique niche. Segmentation, so crucial to the marketing of the institution, also works well with the factor method. Where differences exist among segments, specific factors and specific variables can be isolated for examination and possible use in developing repositioning strategies. No other study was found that used the combination of methods used in this study: factor analysis, semantic phrases, segmentation analysis, and inclusion of students' ideal college. Very few positioning studies have included segmentation analysis. Without segmentation, vague administrative strategies can result, as it is assumed that all students have the same image. This idea is simply not true, as demonstrated by the geographic maps produced from this study.

Further research using attribute-based methods such as factor analysis should focus on the development of variables appropriate to the competitive marketplace. Variables should be monitored over time to accommodate changing consumer needs and behavioral shifts. A

Likert or semantic differential scale may be used; however, adjectives should be carefully selected. The outcome of a positioning analysis depends on the descriptors used. For example, semantic adjectives for dorm life that could be used might include great/boring, loud/quiet, or crowded/uncrowded. What is being measured depends on both the object and the corresponding adjective.

Ferris State occupied a unique niche, close to the ideal college when clubs was combined with size or cost. Ferris was closer to the ideal than any other college on the size factor. Ferris had a better cost image than larger colleges, but was cost competitive with institutions similar in size. Ferris had a better image on the clubs factor than colleges similar in size, and was positioned near larger institutions such as the University of Michigan, Western, and Eastern. Academically, Ferris and most colleges were seen as similar and distant from the ideal. Ferris was positioned far from the ideal and the majority of colleges on the social factor. Analysis of geographic segments permitted even greater understanding of the position of Ferris within the educational marketplace.

Reflections

It is the opinion of the researcher that the method used in this study, as applied to a specific educational market, helped to advance the narrow field of positioning in higher education. The factor method was used in three published studies reviewed in this study. In one study, the factor method was used as a follow-up approach, and only adjectives were used to describe institutions. In another

study, no competitors were included; however, matriculants and nonmatriculants were compared. In a third study, the factor method was used to produce many positioning maps, but segmentation was not used. In the study for Ferris State, the combination of snake diagrams, individually tailored semantic differential phrases, factor analysis, positioning maps, relevant competing colleges, and geographic segmentation provided a very useful positioning package.

The factor method allows the researcher to freely select variables suited to any competitive environment. Multidimensional scaling, another positioning method, is not only difficult for respondents, but the resulting dimensions are difficult to interpret. Academic and size are the usual positioning dimensions. Key aspects of marketing, product differentiation and niche marketing, are more compatible with the factor method than multidimensional scaling because the factor method is attribute based. Variables unique to a particular competitive environment can be used and may surface as differentiating attributes.

A unique niche was discovered in this study of business students. Ferris competed well with large institutions on the clubs dimension (business and other clubs) and, in addition, had a cost and size advantage over larger institutions. The addition of geographic segmentation within a relevant competitive market was also useful for strategic planning purposes. Ferris draws a large percentage of students from southeastern Michigan. These students had a slightly different image of Ferris regarding the dimensions of size, cost, social attributes, and clubs.

Caution is needed regarding the use of higher education positioning results for marketing purposes. A common mistake of many admissions offices has been to apply only the promotional tools of marketing. For example, many institutions have held receptions for students and used the media to glorify their services. And many of these efforts have resulted in temporary, short-lived enrollment gains. Marketers maintain that advertising makes a bad product fail faster. Many students who enroll in an institution because of misleading advertising quickly become disillusioned and are more likely to withdraw.

Advertising is supplemental to basic sound strategy formulation that begins with an understanding of the mission of the college. The fact that Ferris State rated low on the social dimension does not mean that advertising will correct the poor image. First, a decision must be made as to whether the image was justified. Dorm living and sports seemed to be major contributors to the poor social image. If anything is to be changed, it is primarily the product/service, not the promotion. Several questions need to be answered by top administrators. Is dorm living really worse at Ferris State than other competing colleges? Can the product/service be improved, and is the cost too high? Can the sports image be improved, and does the college want to invest in that improvement? Repositioning should be consistent with the mission and goals of the institution.

As a result of making and implementing primarily strategic product/service decisions, promotion becomes secondary. In fact, for

many institutions, word-of-mouth advertising is one of the best promotional tools an institution possesses. It does not take long for the students to pass along information about the services and activities experienced at an institution.

Promotional tools would be very useful with respect to the clubs dimension or any positive attribute of a college. If the product has a very positive image and is not well known, informative advertising would be beneficial. Informative advertising in brochures and the college catalogue would help incoming students know what the college has to offer. Videos are also useful for portraying the college's offerings. Advertising should be honest and informative to achieve maximum benefits in the long run.

APPENDICES

APPENDIX A

ENGLISH 113 STUDENT SURVEY SCHEDULE

8:00

TUESDAY, MARCH 17	WEDNESDAY, MARCH 18
1010 S-222 Dugas	1020 S-224 O'Dea
1040 S-110 Vonder Haar	1030 S-205 Caserta
1050 S-208 Stern	1060 S-110 Brownell

9:00

MONDAY, MARCH 16	TUESDAY, MARCH 17	WEDNESDAY, MARCH 18
1090 S-222 Caserta	1070 S-224 Schieffer	1110 A-106 Griffith
	1080 S-110 Vonder Haar	
	1100 S-208 Bandstra	
	THURSDAY, MARCH 19	
	1120 A-104 Hanzek	

10:00

MONDAY, MARCH 16	TUESDAY, MARCH 17	WEDNESDAY, MARCH 18
1180 A-104 Howting	1130 S-224 Schiffer	1150 S-2226 Kilgallen
A-106 Griffith		
	THURSDAY, MARCH 19	
	1190 A-106 Hanzek	

11:00

MONDAY, MARCH 16	WEDNESDAY, MARCH 18	THURSDAY, MARCH 19
1240 SCI-125 Brownell	1210 A-104 Howting	1200 S-110 Stern
	1220 A-103 Vinopal	1230 S-224 Caserta
		1620 S-210 Carson

1200

TUESDAY, MARCH 17	WEDNESDAY, MARCH 18	THURSDAY, MARCH 19
1250 S-110 Vonder Haar	1260 S-208 J. Cullen	1290 BH-204 Bigford
1320 S-205 Vasicek	1270 S-224 O'Dea	
	1280 S-226 A. Carson	FRIDAY, MARCH 20
	1330 S-205 Branson	1300 A-106 Griffith
		1310 A-104 Hanzek

1:00

TUESDAY, MARCH 17	WEDNESDAY, MARCH 18	FRIDAY, MARCH 20
1350 S-222 Smith	1340 S-210 Banstra	1370 A-106 Griffith
1400 S-226 Vasicek	1360 S-226 Howting	1380 A-104 Hanzek
	1390 BH-205 Bigford	

2:00

TUESDAY, MARCH 17	WEDNESDAY, MARCH 18	FRIDAY, MARCH 20
1410 S-224 Dugas	1440 S-226 Banstra	1450 BH-205 Bigford
1420 S-222 Smith		
1430 S-205 Vonder Haar		

3:00

TUESDAY, MARCH 17	WEDNESDAY, MARCH 18
1470 S-224 Dugas	1480 S-208 Vinopal
	1490 S-222 J. Cullen

4:00

TUESDAY, MARCH 27	WEDNESDAY, MARCH 18	THURSDAY, MARCH 19
1500 S-205 Fogarty	1520 S-208 J. Cullen	1530 Phr-106 Golder

5:00

THURSDAY, MARCH 17
1540 S-222 Hamilton
1550 S-226 Bennett

6:00

WEDNESDAY,MARCH 18
1570 S-211 Stern
1580 S-210 Hamilton

7:30

WEDNESDAY, MARCH 18	THURSDAY, MARCH 19
1600 S-211 Stern	1590 S-224 Kakonis
1610 S-210 Hamilton	

APPENDIX B

FACULTY REQUEST LETTER

To:
From: Marilyn Keigley, Associate Professor, Marketing Department
Subject: Market Study
Date: March 6, 1987

A study is being conducted to learn more about student perceptions at Ferris State College. A short survey will be given to students involving a rating scale of 23 items. The image of Ferris and other institutions is being studied. A multivariate model will be developed that can also be used in future studies in other colleges. Administrators, faculty, and students will benefit from the study.

The study involves a market analysis of School of Business freshmen. President Wenrich and Dr. Priebe have read the research proposal and are in support of the study. I have discussed the study with Dr. Alexander, and he is also willing to assist in the study. The survey is being used in conjunction with my doctoral dissertation and has been approved by my doctoral committee at Michigan State University.

The School of Business freshmen being surveyed are concentrated in English 113 classes. Your help is needed because a large sample is required. If you agree to participate, I will need School of Business freshmen to be excused for a half of a class period, during the second week of Spring Term. There are about 5 to 10 of these students in a typical English 113 class. Results will be made available to any faculty participating.

I have designed the study for the second week of school to decrease the chance of interfering with your testing. If you are willing to participate, there is no need to respond. I will be at your classroom door at the beginning of the hour on the date specified on the attached schedule. Students will be surveyed in reserved rooms, including Williams Auditorium, Starr 109, Alumni, Science, Pharmacy, or Bishop Hall. If you cannot participate, please let me know by calling me at extension 4282.

Sincerely,

Marilyn Keigley, Associate Prof.
BUS 124C

APPENDIX C

FIVE GEOGRAPHIC SEGMENTS OF MICHIGAN

Five Geographic Segments of Michigan

NORTHWEST	NORTHEAST	UPPER PENINSULA
Emmet	Cheboygan	Mackinac
Charlevoix	Presque Isle	Chippewa
Antrim	Otsego	Luce
Leelanau	Montmorency	Schoolcraft
Benzie	Alpena	Delta
Grand Traverse	Crawford	Alger
Kalkaska	Oscoda	Menominee
Manistee	Alcona	Marquette
Wexford	Roscommon	Dickinson
Missaukee	Ogemaw	Baraga
Mason	Iosco	Iron
Lake	Gladwin	Houghton
Osceola	Arenac	Keweenau
Clare	Midland	Ontonagon
Oceana	Bay	Gogebic
Newaygo	Huron	
Mecosta	Tuscola	
Isabella	Sanilac	

SOUTHEAST	SOUTHWEST
Saginaw	Muskegon
Shiawassee	Montcalm
Genesee	Gratiot
Lapeer	Ottawa
St. Clair	Kent
Ingham	Ionia
Livingston	Clinton
Oakland	Allegan
Macomb	Barry
Washtenaw	Eaton
Wayne	VanBuren
Lenawee	Kalamazoo
Monroe	Calhoun
	Jackson
	Berrien
	Cass
	St. Joseph
	Branch
	Hillsdale

APPENDIX D

WORD ASSOCIATION RESPONSES

Word Association Responses

Word (stimulus)	Responses (n) (N = 42)
Cost	high-7 financial aid-5 parents-2 low-2 value-1
Campus life	fun-9 ok-6 boring-6 exciting-3 dull-2 social-2 none-2 sports-2 friends-2
Dorm life	boring-10 fun-4 wild-2 noisy-2 party-2 freshmen-1 trouble-1 bad-1 darts-1 loud-1 average-1 busy-1 exciting-1 friends-1 null-1 out-1 riot-1
Admissions	slow-10 easy-8 hassle-3 crazy-1 ok-1 test-1 pain-1 fear-1 uncooperative-1
Faculty	helpful-6 good-5 great-3 average-3 ok-3 old-2 boring-2 uneducated-2 poor-1 uncooperative-1 pros-1 friendly-1 competent-1
Spectator sports	boring-5 hockey-4 none-3 apathy-3 never-2 lots-2 unexciting-2 lose-2 poor-2 exciting-2 lacking-1 good-1
Financial aid	not enough-4 none-4 tough to get-2 good-2 a lot-2 available-2 slow-1 lucky-1 important-1
Help getting a job	good-6 poor-4 fair-3 important-2 great-1 terrible-1 excellent-1 hard-1 worry-1
Faculty advising	fair-5 none-3 poor-3 no help-3 good-3 help-3 average-1 busy-1 limited-1 weak-1
Business clubs	good-4 don't use-3 lack of participation-2 ok-2 active-2 too social-1 weak-1 chicky-1 no fun-1

APPENDIX E

STUDENT SURVEY

STUDENT SURVEY

Thank you for participating in this survey. It is important that you try to complete all parts of this survey. Even though you may not be completely familiar with an item on the survey, please respond with your best hunch.

1. Check one. Freshman--1st term___ 2nd term___ 3rd term___

2. Male___ Female___

3. Check school enrolled in: Business___ Arts & Sciences___ Other_____

4. Major field of study_____

5. Home town_____ County_____ State_____

6. Program enrolled in: ___2-year ___4-year

7. If in 2-year program, how likely are you to enroll in a 4-year program?

   ___very likely ___likely ___not very likely

8. Did you transfer to Ferris from another college? ___yes ___no

9. Age_____

Please check ONE space per line that best indicates your closest impression about Ferris State College. Spaces near the ends indicate strong feelings. The middle space indicates neutral feelings.

FERRIS STATE COLLEGE

Unique degree programs	___|___|___|___|___	General degree programs
Slow admissions	___|___|___|___|___	Fast admissions
Small class size	___|___|___|___|___	Large class size
Career oriented	___|___|___|___|___	Not career oriented
Narrow selection of degree programs	___|___|___|___|___	Wide selection of degree programs
High cost	___|___|___|___|___	Low cost
Beautiful campus	___|___|___|___|___	Ugly campus
Small college	___|___|___|___|___	Large college
Strong faculty advising	___|___|___|___|___	Weak faculty advising
Great dorm life	___|___|___|___|___	Boring dorm life
Friendly atmosphere	___|___|___|___|___	Snobbish atmosphere
Many clubs available	___|___|___|___|___	Few clubs available
Suitable degree programs	___|___|___|___|___	Unsuitable degree programs
Safe campus	___|___|___|___|___	Unsafe campus
No financial aid	___|___|___|___|___	Available financial aid
Active campus life	___|___|___|___|___	Inactive campus life
Many sports to participate in	___|___|___|___|___	Few sports to participate in
Low-quality faculty	___|___|___|___|___	High-quality faculty
Easy to get degree	___|___|___|___|___	Hard to get a degree
Convenient location	___|___|___|___|___	Inconvenient location
Dull spectator sports	___|___|___|___|___	Exciting spectator sports
Good job placement	___|___|___|___|___	Poor job placement
Active business clubs	___|___|___|___|___	Inactive business clubs

Check the ONE college you most strongly considered attending before coming to Ferris. Answer the questions on this page regarding the college you strongly considered.

___Central Mich. ___Northern Mich. ___Eastern Mich. ___Grand Valley
___Mich. State ___Western Mich. ___Univ. of Mich.
___Saginaw Valley ___Lake Superior Other_____(name)

Unique degree programs	___|___|___|___|___	General degree programs
Slow admissions	___|___|___|___|___	Fast admissions
Small class size	___|___|___|___|___	Large class size
Career oriented	___|___|___|___|___	Not career oriented
Narrow selection of degree programs	___|___|___|___|___	Wide selection of degree programs
High cost	___|___|___|___|___	Low cost
Beautiful campus	___|___|___|___|___	Ugly campus
Small college	___|___|___|___|___	Large college
Strong faculty advising	___|___|___|___|___	Weak faculty advising
Great dorm life	___|___|___|___|___	Boring dorm life
Friendly atmosphere	___|___|___|___|___	Snobbish atmosphere
Many clubs available	___|___|___|___|___	Few clubs available
Suitable degree programs	___|___|___|___|___	Unsuitable degree programs
Safe campus	___|___|___|___|___	Unsafe campus
No financial aid	___|___|___|___|___	Available financial aid
Active campus life	___|___|___|___|___	Inactive campus life
Many sports to participate in	___|___|___|___|___	Few sports to participate in
Low-quality faculty	___|___|___|___|___	High-quality faaculty
Easy to get degree	___|___|___|___|___	Hard to get a degree
Convenient location	___|___|___|___|___	Inconvenient location
Dull spectator sports	___|___|___|___|___	Exciting spectator sports
Good job placement	___|___|___|___|___	Poor job placement
Active business clubs	___|___|___|___|___	Inactive business clubs

Mark ONE space on each line that indicates the importance to you of each item listed below.

YOUR IDEAL COLLEGE

Unique degree programs	___|___|___|___|___	General degree programs
Slow admissions	___|___|___|___|___	Fast admissions
Small class size	___|___|___|___|___	Large class size
Career oriented	___|___|___|___|___	Not career oriented
Narrow selection of degree programs	___|___|___|___|___	Wide selection of degree programs
High cost	___|___|___|___|___	Low cost
Beautiful campus	___|___|___|___|___	Ugly campus
Small college	___|___|___|___|___	Large college
Strong faculty advising	___|___|___|___|___	Weak faculty advising
Great dorm life	___|___|___|___|___	Boring dorm life
Friendly atmosphere	___|___|___|___|___	Snobbish atmosphere
Many clubs available	___|___|___|___|___	Few clubs available
Suitable degree programs	___|___|___|___|___	Unsuitable degree programs
Safe campus	___|___|___|___|___	Unsafe campus
No financial aid	___|___|___|___|___	Available financial aid
Active campus life	___|___|___|___|___	Inactive campus life
Many sports to participate in	___|___|___|___|___	Few sports to participate in
Low-quality faculty	___|___|___|___|___	High-quality faaculty
Easy to get degree	___|___|___|___|___	Hard to get a degree
Convenient location	___|___|___|___|___	Inconvenient location
Dull spectator sports	___|___|___|___|___	Exciting spectator sports
Good job placement	___|___|___|___|___	Poor job placement
Active business clubs	___|___|___|___|___	Inactive business clubs

APPENDIX F

OTHER COLLEGES STUDENTS CONSIDERED ATTENDING

Other Colleges Students Considered Attending

Michigan Community/Junior

Grand Rapids Junior College
Jackson Community College
Lansing Community College
Macomb Community College
Mott Community College
Muskegon Community College
Northwestern Michigan College

Michigan Private Colleges

Calvin College
Hope College
Aquinas College
Northwood Institute
Lawrence Institute of Technology
Alma College
Kendall School of Design
Adrian College

Michigan Public Institutions

University of Michigan, Flint
Wayne State University
Michigan Technological University

Out-of-State Institutions

Arizona State University
University of Dayton
Palm Beach Atlantic College
University of Kansas
University of S. Florida
Lamar University
University of N. Carolina
University of Colorado
W. Connecticut State Univ.
Indiana University
Baker College
University of Tampa
Boston College
St. Cloud State University
St. Michael's College
Berea College
University of Wisconsin
Illinois State University

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