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ABSTRACT

A model that accounts for high school students' college selection was tested. The ideal point preference model proposes that students prefer the college that most approximates their conception of the ideal college. Also assessed was the extent to which students' academic orientations (vocational, academic, collegiate, or nonconformist) affect their evaluations of institutional characteristics that affect college choice. A total of 408 college-bound high school seniors from 16 Staten Island (New York) schools were administered the College Image Questionnaire. Factor analysis identified four characteristics linked to college choice: academic standards and reputation, religious emphasis and paternalism, being expensive and inconvenient, and social opportunity. Correlation analysis between students' actual college preferences and the rank order of preferences predicted by the model revealed that students applied the model in academic decision-making to a moderate extent. Colleges can employ multidimensional scaling to identify characteristics that students seek in a college as well as their images of local colleges. The college may then decide to shift or project its image close to students' ideals. (SW)

STUDENTS' ACADEMIC ORIENTATIONS AND THEIR PERCEPTIONS OF AND PREFERENCES FOR COLLEGES: APPLIED MARKET RESEARCH USING THE IDEAL POINT PREFERENCE MODEL AND MULTIDIMENSIONAL SCALING

by

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Presented at the Association for the Study of Higher Education Annual Conference, San Diego, February 14, 1987.

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ABSTRACT

Prospects of a sharp decline in applications and subsequent enrollments have led to an increased concern among college administrators about the question of how students select colleges. Little has been done empirically, however, to formulate a relationship between the perceptions individuals have of colleges and the process by which their actual preferences are arrived at.

The purpose of this investigation was to determine whether high school students' preferences for colleges are associated with their conceptions of an ideal college. A further objective was to determine the extent to which students' academic orientations, vocational, academic, collegiate, or nonconformist, are related to their perceptions and evaluations of college choice stimuli.

The research sample consisted of 408 local-college-bound high school seniors in classes drawn at random from schools on Staten Island. The data for the study were collected through the researcher-designed College Image Questionnaire. Reliability and validity of the instrument were established through pilot testing and other analyses prior to its use.

The hypotheses for the study were tested through the use of multidimensional scaling, multiple regression, and correlation analyses. Relationships which emerged as significant at the .05 level or beyond were identified.

The results of the analyses demonstrate the utility of the " ideal point preference model" in academic decision making among different segments of the student population. A correlation analysis between the subjects' actual college preferences and the rank order of preferences predicted by the "ideal point model" revealed that, to a moderate extent, students applied the model in academic decision making. Furthermore, it was concluded that the predictive ability of this preference construct was dependent upon student type, with the predictive power being greatest for the vocational and somewhat less for academics and collegiates, but not applicable for nonconformists. By accounting for the varying success of the model through differences in academic orientation, a preference model distinctive to higher education emerged.

Implications of the findings , in addition to validating a model, suggest several practical implications for managing student preferences and marketing institutions of higher education.

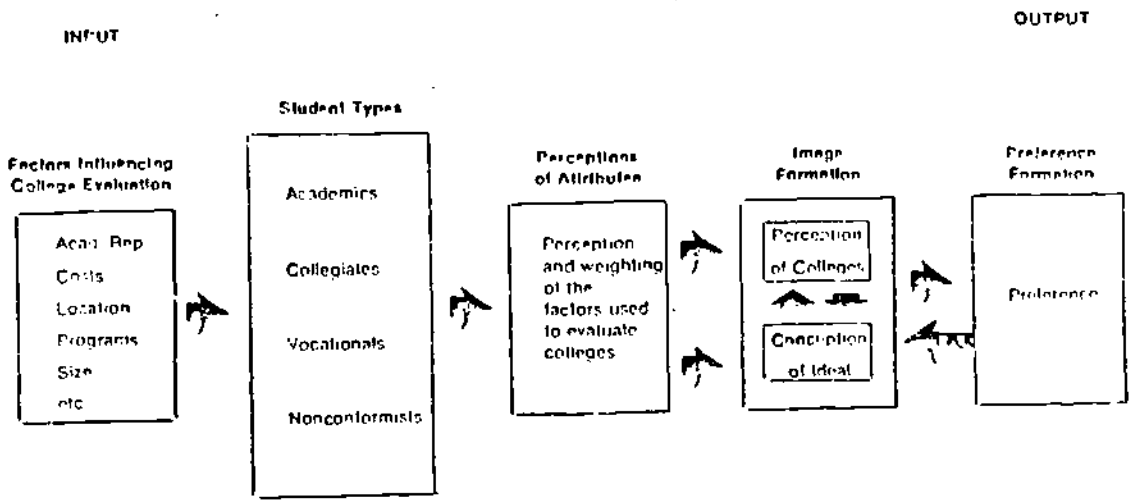


FIGURE 1. MODEL OF THE IMAGE AND PREFERENCE FORMATION PROCESS

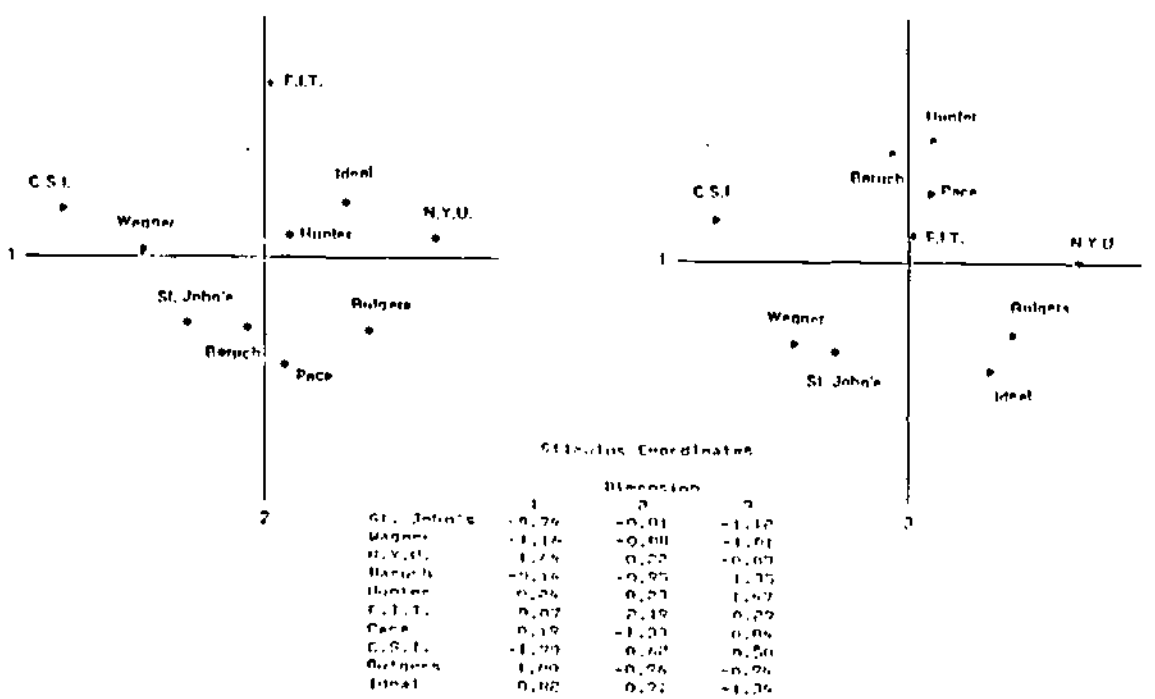


Figure 2. Stimulus Configurations for the Combined Group Derived in 3 Dimensions.

STUDENTS' ACADEMIC ORIENTATIONS AND THEIR PERCEPTIONS OF AND PREFERENCES FOR COLLEGE: APPLIED MARKET RESEARCH USING THE IDEAL POINT PREFERENCE MODEL AND MULTIDIMENSIONAL SCALING

Steven S. Kuntz, Ph.D.

The study demonstrates the utility of an "ideal point preference model" in academic decision making among different segments of the student population. Using multidimensional scaling analysis with a sample of 408 high school seniors, the relationship between students' images of colleges and the process by which their preferences are formed is explored. In accounting for the variability of the model through differences in student type (vocational, academic, collegiate, or nonconformist), a preference model distinctive to higher education emerges.

Introduction

Prospects of a sharp decline in applications and subsequent enrollments have led to an increased concern among college administrators about the question of how students decide upon a college. Although colleges and universities choose their clientele through the admissions process, the pool of available students is narrowed by self selection. Students make themselves available to colleges according to their impressions of these institutions with images seen as the "invisible thread" linking individuals to their academic choices

(Clark, 1959; Morey, 1971). While it is currently beyond the scope of research to make the connection between image and actual college selection, an attempt to correlate image with preference, the precursor to choice, would constitute a step towards understanding the decision process.

Related Research

Several attempts have been made to explain the perceptual bases used by college students to evaluate various institutions of higher education (Litten, Sullivan & Brodigan, 1983). Little has been done empirically, however, to formulate a relationship between the perceptions individuals have of colleges and the process by which their actual preferences are arrived at.

To date, research on preferential choice among students has been limited to the assessment of expectancy value models of preference formation (Cook & Zallocco, 1983; Muffo & Whipple, 1982). Other constructs, however, have been shown to outperform these models in related areas of decision making (Dubois, 1975).

Conceptual Foundations

One such framework which considers aspects of both

images and their appraisal is the "ideal point preference model." According to this construct, preference for an object (i.e., a college) is seen as a function of its perceived attributes weighed against an individual's conception of an object containing ideal levels of attributes. Hence, the closer that object resembles the ideal, the more it is preferred (Coombs, 1964). If in applying the "ideal point preference model to academe, one can account for the variability of its success through student differences, a preference model distinctive to higher education would emerge.

Fortunately, special conceptual schemes are available for distinguishing among students. One taxonomy, developed by Burton Clark and Martin Trow (1966), has proven to be a parsimonious framework for easily identifying meaningful segments of the student market that continues to be called for by current investigators of academic decision making (Rowse & Wing, 1982).

The Clark-Trow typology as operationalized by Peterson (1965) classifies students according to their academic orientations toward college: one group of students, vocationals, display a personal philosophy of higher education in which their greatest emphasis is on occupational preparation, placing lesser value upon the

intellectual or social facets of college life; academics, a second group, assign the highest value to the scholarly pursuit of knowledge, with somewhat less of an emphasis on social life, extracurricula activities, and occupational goals; Sharing the vocationals perspective on intellectual pursuits, collegiates value the social and extracurricula side of academe; and finally, the nonconformists are students who reject occupational and social value orientations in favor of their own search to find meaning in life, a pursuit that often finds them deeply involved with ideas and activities that allow for self expression (Kees & McDougall, 1971).

The present research effort is an attempt to blend marketing theory with higher education concepts. Extending a consumer preference model to academe, this study focuses on the utility of this construct for different segments of the student population. The end result is an investigation which proposes and tests a model to explain student preference formation in the academic environment.

Research Objectives

The purpose of the present study was to determine whether high school students' preferences for colleges are associated with the congruence between the students'

perceptions of colleges and their conception of an ideal college. Classifying students as vocationals, academics, collegiates, or nonconformists, the relationship between student type and the predictive ability of the preference model was examined. In concert with this objective, an effort was made to explore multidimensional scaling (MDS) as a procedure for operationalizing the model by identifying student perceptions of colleges in a competitive environment and the proximity of such images to an ideal.

Figure 1 represents a presentation of the research framework used in this study. Students, differentiated by their academic orientations, attribute meaning to incoming stimuli along a series of dimensions relevant in college evaluation. Perceptions of colleges and conceptions of an ideal college are organized in such a way that preference evaluations can be made based upon the degree of congruency between one's perception of existing colleges and tne ideal. This comparative process is integral to the "ideal point preference model" in that it is hypothesized that students will form a preference for the college that most approximates their ideal.

Some variability in the predictability of this preference model was anticipated according to individual differences in tolerance for ambiguity, a personality

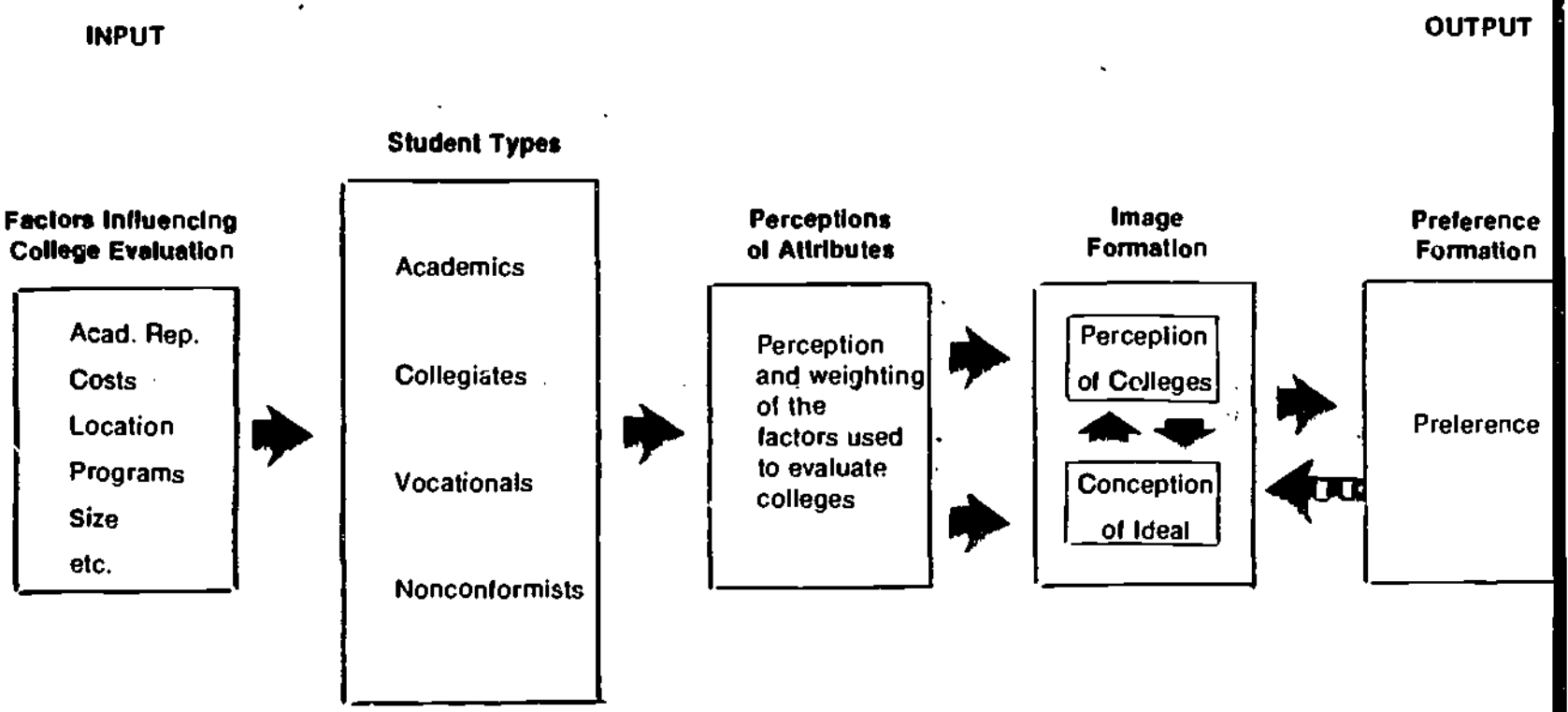


FIGURE 1. MODEL OF THE IMAGE AND PREFERENCE FORMATION PROCESS

variable which reflects the degree to which individuals are capable of accepting inconsistency. Since previous research had identified nonconformists as the most tolerant and vocationals the least (Lange, 1972), it was expected that the applicability of the model would be greatest for vocationals and least for nonconformists, with the other subgroups falling somewhere in between.

The Study Sample

The research sample consisted of 408 locally-college-bound high school seniors in classes drawn at random from 16 area schools. The data for the study was collected in January and February of 1985 through the researcher designed College Image Questionnaire (CIQ). Reliability and validity of the instrument was established through pilot testing and other analyses prior to its use.

Method

Administration of the instrument was conducted by the college counselors in the participating high schools during regular class periods. Of the 1,028 questionnaires that were distributed, 986 were completed for a response rate of 95.9%, with 408 falling within the criteria for analysis.

The questionnaire consisted of three parts. The first part asked subjects to judge directly the similarity (psychological distance) between nine pairs of colleges that preliminary research had identified as constituting 92% of the higher education choices of locally-college-bound youngsters. An additional college designated as the "ideal" was incorporated into the students' choice set for analytic purposes.

An ALSCAL MDS algorithm was applied to this data. The ouput of this analysis was a spatial representation of the colleges which reflects the competitive images students hold of these institutions and their relationship to an ideal.

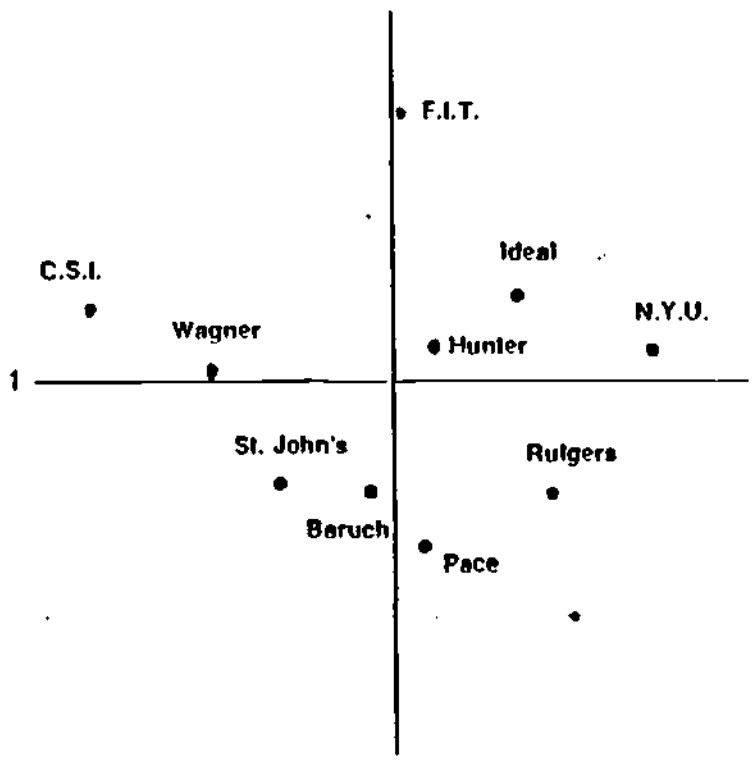
A second part of the questionnnaire required the respondents to evaluate the colleges on a set of 18 prespecified characteristics thought relevant in academic decision making. The 18 attributes were determined after an examination of the literature on college selection criteria and a pilot test performed on a distinct sample of 30 students. Factor analysis was used to reduce the 18 variables to a meaningful subset of four factors identified as "Academic Standards and Reputation," "Religious Emphasis and Paternalism," "Social Opportunity," and "Expensive and Inconvenient." Computed factor scores when combined with the stimulus

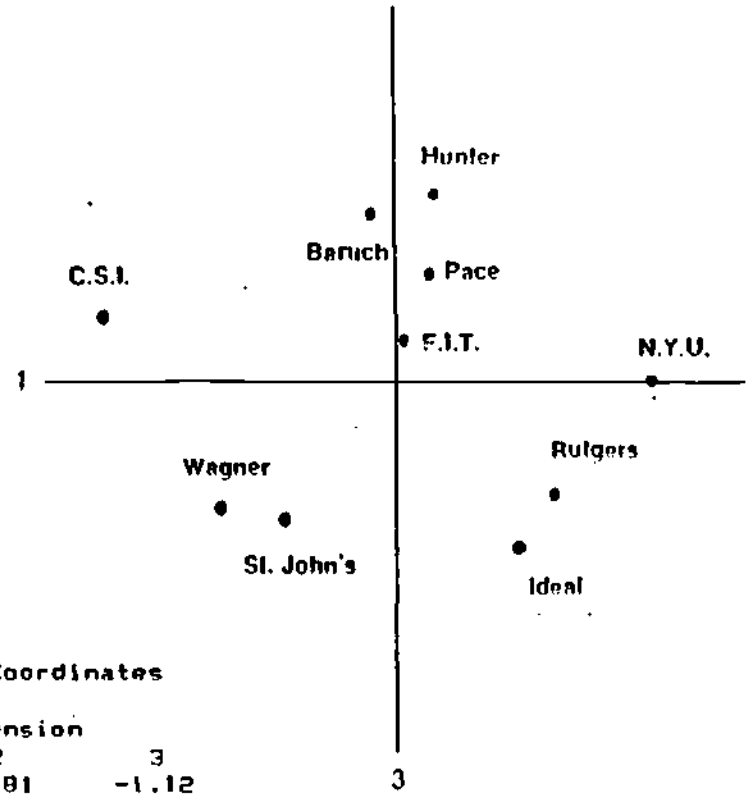
coordinates from the MDS configuration were used to aid in the interpretation of the dimensions of the scaling solution. (See Table 1, Appendix A, for the factor scores revealing each colleges rating on the factors).

Section three of the CSQ utilized a rank ordering of preferences drawn from the stimulus set. Subjects rated each of the colleges from the most preferred to least preferred with assigned ranks ranging from 1 to 9. The similarity measures of each college with an ideal when compared with the preference rankings were used to test the predictive ability of the model under question. A self-selection measure of student typal categorization using questions from the College Student Questionnaire (Educational Testing Service, 1982, Reprinted by permission) provided a means for determining the applicability of the "ideal point preference model" for different subgroups.

Results

The ALSCAL MDS analysis resulted in a three dimensional solution reflecting the perceptual criteria by which the total sample evaluated the nine colleges plus an ideal. The perceptual map is depicted in Figure 2. In essence, it is a visual portrayal of how the nine colleges making up the choice set for locally-college-





Stimulus Coordinates

	Dimension 1	2	3
St. John's	-0.74	-0.81	-1.12
Wagner	-1.16	-0.08	-1.01
N.Y.U.	1.44	0.22	-0.03
Baruch	-0.14	-0.95	1.35
Hunter	0.24	0.23	1.47
F.I.T.	0.07	2.19	0.29
Pace	0.19	-1.33	0.84
C.S.I.	-1.90	0.62	0.50
Rutgers	1.00	-0.96	-0.94
Ideal	0.82	0.71	-1.34

Figure 2. Stimulus Configurations for the Combined Group Derived in 3 Dimensions.

bound youngsters are positioned in relation to each other and to the ideal college. N.Y.U., for instance, is seen as having a very different image than C.S.I. on Dimension 1 (horizontal), and an image that is also much closer to the Ideal.

Visual inspection of the MDS configuration coupled with the results of a linear multiple regression analysis in which the four factors were regressed one at a time over the coordinates of the spatial configuration led to the identification of the perceptual dimensions. (See Table 2, Appendix A for the multiple regression analysis). These were: Dimension 1, "Academic Prestige"; Dimension 2, Technical versus Business Orientation"; and, Dimension 3, "Social Opportunity."

A correlation analysis between the subjects' actual college preferences and the rank order of preferences predicted by the "ideal point model" revealed that, to a moderate extent, students applied the model in academic decision making. Spearman correlations were computed between the rank order of each subject's actual college preferences and the rank order predicted by the model (similarity scores between each college with the ideal). Individual correlation coefficients were transformed using a Fisher z transformation and averaged. A mean

correlation of 0.60 resulted and was found to be significant at the .01 level, affirming the predictive ability of the model.

A more telling indication of the ability of the model to predict preference was had by examining the percentage of cases in which the students' most preferred colleges were predicted by the model. In comparing the predicted first preferences generated from the model with the subjects' actual preferences, it was found that in 67% of the cases the model provided an accurate prediction of preference.

More significantly, it was concluded that the predictive ability of this preference construct was dependent upon student type. Separate mean correlations were determined for each of the four subgroups yielding coefficients of 0.72 for vocationals, 0.56 for academics, 0.56 for collegiates, and 0.29 for nonconformists. With the exception of the nonconformists, each mean correlation coefficient was significant at the .01 level.

Pairwise comparisons of the correlation coefficients for the subgroups indicated significant differences in the predictive ability of the model ($p<.05$) with the predictive power being greatest for the vocationals and somewhat less for academics and collegiates, but not applicable for the nonconformists. Thus, it would appear that three of the

student types differentially perceive of colleges along a series of dimensions, resulting in the structuring of institutions in direct correspondence to actual preference. In accounting for the varying success of the "ideal point preference model" through differences in academic orientation, a preference model distinctive to higher education has emerged.

Limitations

As with most research of this kind, the interpretation of the results must be approached with some degree of caution. Results obtained from a sample of students in a single market involving their perceptions and evaluations of institutions specific to that environment cannot be generalized to all students or to all student markets.

Discussion

In addition to extending a theoretical marketing construct to academe, the methodology and findings from this study have considerable practical implications for institutions of higher education.

From a college's perspective, institutional preference is a crucial aspect of student decision making. Since the decision to apply to a school is

a prerequisite to college selection, those interested in influencing college choice must first manage preferences if they are to have any opportunity to affect behavioral outcomes.

The proposed model of student preference formation suggests that college preference can be predicted on the basis of student perceptions of colleges and conceptions of an ideal. Multidimensional scaling can be used to identify the characteristics students would most like to see in a college as well as the images of colleges as they exist in the educational marketplace.

The assessment of a college's image is generally regarded as the starting point for any serious marketing effort (Kotler, 1975) in that it generates the requisite information for developing and promoting those aspects of an institution that most appeal to prospective clientele.

Figure 1, for example, has revealed the perceptual positions of institutions in a particular educational market. Hypothetically, a school could be projected onto that configuration as the closest among colleges to the "Social Opportunity" ideal, but the furthest removed from the ideal in "Academic Prestige." Armed with such information, administrators at this institution could attempt to emphasize the social factor in its promotional efforts. Alternatively or concurrently, the

college could make an effort to shift its image closer to the "Academic Prestige" ideal, though such an undertaking might very well require substantial adjustments in that school's mission, admission's criteria, standards, programs, faculty, and a host of other variables.

Institutions interested in attracting a particular population, i.e. academics, might very well apply a comparable approach to preference management, though such an effort would require an assessment of the market structure of colleges particular to that student segment. Cognizance of the variability in the success rate of the "ideal point preference model" for different student types would also play a role in determining the feasibility of such an endeavor.

Any effort to shift or project a college's image close to student ideals constitutes an attempt to capitalize on an understanding of the preference formation process. With student preference formation explainable to a certain extent through a spatial distance construct, "the ideal point preference model," a justification exists for applying the MDS methodology to examine the distance among stimuli to the educational marketplace. Through the utilization of such approach, the management of student preferences is well within the realm of institutional potentiality, though for such an undertaking to

reach fruition would probably require considerable institutional self-examination and possible redefinition.

A final point should be stressed regarding the implications of the findings reported here for the predictive ability of the preference model for each of the Clark-Trow student types. In this study there were moderate correlations between actual college preferences and preferences predicted by the "ideal point preference model" for three of the four subgroups. Given the rather generic nature of the Clark-Trow classifications, and the number of factors that enter into the decision process, it is important to recognize that one should not expect to predict preference on an individual level with a high degree of accuracy from a knowledge of student's academic orientation.

Conclusions

The results of this study strongly indicate that college preference is explainable on the basis of the congruence between students' perceptions of colleges and conception of an ideal school. In accounting for the variability in the success of the "ideal point preference model" thorough differences in student type, a preference model distinctive to higher education has emerged.

The methodology and model employed here have been shown to be powerful tools for identifying the perceptions and preferences for colleges in the educational marketplace. With little modification, this approach could be used by other colleges and universities to assess their place in the educational market, predict preference, develop marketing strategies, and enhance their competetive position in higher education today. Ultimately, as colleges and universities reflect upon their own institutional reality, the end result is an opportunity to manage and shape their own destinies.

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Appendix A

Table 1

Factor Scores Generated from Promax Rotated Solution

College	(Aca.Std. & Rep.) Factor I	(rk)	(Rel.Emph. & Pater l.) Factor II	(rk)	(Social Opp.) Factor III	(rk)	(Expensv. & Inconv) Factor IV	(rk)
St. John's Univ	0.250709	(3)	0.608763	(1)	0.490398	(1)	-0.439888	(8)
Wagner College	-0.144550	(6)	0.107523	(3)	0.153743	(4)	-0.225157	(7)
New York Univ.	0.608207	(1)	0.081248	(4)	0.188586	(3)	0.476501	(1)
Baruch College	-0.174866	(7)	-0.201063	(7)	-0.213082	(7)	0.095631	(6)
Hunter College	-0.075576	(5)	-0.122482	(5)	-0.180838	(6)	0.197654	(5)
Fashion Inst	-0.283328	(8)	-0.294968	(9)	-0.372056	(9)	0.250660	(3)
Pace College	0.192565	(4)	-0.129112	(6)	-0.137447	(5)	0.224188	(4)
College of S.I.	-0.729526	(9)	-0.234984	(8)	-0.351847	(8)	-0.988981	(9)
Rutgers Univ	0.415383	(2)	0.181482	(2)	0.441600	(2)	0.433854	(2)

Note. The rank ordering of the Colleges on each of the factors is in parentheses.

Table 2

Normalized Regression Weights (Direction Cosines) and Multiple Correlations Between Factor Scales and ALSCAL Dimensions For The Combined Group Solution

	Normalized Regression Weights (Direction Cosines)			
Factor Scale	Dim. I	Dim. II	Dim III	Multiple Correlation
1. Aca. Stds. & Reputation	0.839	-0.354	-0.413	0.965**
2. Rel. Emph. & Paternalism	0.063	-0.455	-0.888	0.860
3. Social Opportunity	0.307	-0.441	-0.844	0.957**
4. Expensive & Inconvenient	0.997	0.028	0.074	0.930**

** Significant at the .01 level. $p<.01$