A STUDY OF CHOICE BEHAVIOUR BY UNDERGRADUATE BUSINESS SCHOOL APPLICANTS

Anthony C. Cunningham, Michael F. Carey and William J. Glynn*

This article is concerned with the application of consumer behaviour theory to a University Business School. The transition by students from second level to third level education and the associated decisions involved are examined using models of consumer behaviour and perceptual mapping techniques. By facilitating the identification of evaluative criteria, the perceptual mapping techniques enables management to outline and compare competitors' products against each other and against their own products as perceived by the customers. The "products" referred to in this paper are third level educational establishments, and business degree courses in Ireland. The "consumers" are secondary school students in Dublin engaged in decisions relating to progression to further education. By applying these techniques to a sample of potential consumers in the Dublin area, a number of maps of students' perceptions of Irish third level educational alternatives are developed.

Research Methodology

The study was undertaken to achieve the following objectives:
(a) to examine the decision provess of potential business/commerce students and to uncover evaluative criteria used inthe decision to select a business degree course;
(b) to illustrate the relative positions of the various third level institutions along those criteria and
(c) to gain an understanding of the decision process of potential university students as they make their choice between the various third level institutions.

Data Sources and Sample Population

The main secondary source used was the data bank maintained by University College Dublin to record applications for admission to the College through the national Central Applications Office system. Primary data was collected via an administered questionnaire in secondary schools in the Dublin region. The population sampled was fifth and sixth (final) year students in selected second level educational establishements in the Dublin area in the academic year 1983/84.

*The authors are, respectively, Professor of Marketing at University College Dublin, Product Manager with Batchelors Ltd, and Intra Programme Manager at the National Institute for Higher Education (Dublin).

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Questionnaire Construction and Data Analysis

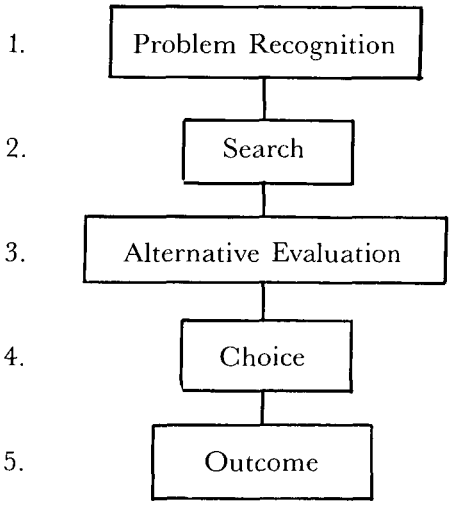
The questionnaire was divided into the following sections:

(a) Questions relating to the background of the respondents;
(b) Questions measuring the level of knowledge the responsents had of the third level colleges involved in the Central Applications Office (CAO) system;
(c) Questions relating to stages in the decision process — i.e., timing, influences, and the most important characteristics of third level institutions;
(d) Pair-wise comparisons of the third level colleges;
(e) Pair-wise comparisons of the business related degree courses offered by the colleges in the CAO system.

In total, 290 completed questionnaires from twelve schools were analysed using the Statistical Package for Social Sciences (SPSS) analysis for sections (a) to (c) of the questionnaire, and the Multidimensional Scaling (MDS (X)) analysis for sections (d) and (e). Within the MDS(X) package, the Individual Difference Scaling (INDSCAL-S) program was used to analyse the data.

Research Framework

The concepts developed in the area of consumer behaviour are used in an attempt to understand the decision process that potential third level students undertake. The decision being studied is a complex one, but by reducing it, much can be learned. A simplified Engel, Kollat and Blackwell model provides a structure upon which to base a discussion of the "high-involvement" decision process in question [Engel, Blackwell and Kollett, 1978].



1. *Problem recognition* — When does the student begin the decision process?
2. *Search* — What sources of information are used by the student as he/she moves towards evaluating each option?
3. *Alternative evaluation* — What characteristics of the colleges or courses does the student see as being important when making the decision?
4. *Choice* — What selection is made from among the available alternatives? Which decision is more important, college or type of course?
5. *Outcome.*

Research Findings

Problem Recognition

Problem recognition occurs because there is a perceived difference between an ideal and actual state of affairs as the student moves towards the end of his secondary school career. In the questionnaire, students were asked when did they decide whether or not to continue their education on to third level. Table 1 shows that 55 percent of those who decided not to go to college had made the decision before the end of their fourth year. The corresponding percentage for those deciding to go to college is only 38 percent. This trend continues right through the senior cycle, with 90 percent of those not going to college deciding by the the end of fifth year. This corresponds with 80 percent of those who intend to go to college. The most striking feature of these findings is the early stage at which the majority of the decisions are made.

Table 1: *Timing of Decision in Relation to Progression to Third Level College*

	Intend to go to College		Intend not to go to College	
	percent	cumulative	percent	cumulative
Earlier	9.7	9.7	15.0	15.0
Early Fourth Yr.	19.3	29.0	30.0	45.0
Mid-Fourth Yr.	7.3	36.3	0.0	45.0
Late Fourth Yr.	1.9	38.2	10.0	55.0
Early Fifth Yr.	23.5	61.7	15.0	70.0
Mid-Fifth Yr.	10.3	72.0	20.0	90.0
Late Fifth Yr.	8.5	80.2	0.0	90.0
Early Sixth Yr.	6.1	86.6	10.0	100.0
Mid-Sixth Yr.	9.1	95.7	0.0	100.0
Late-Sixth Yr.	4.3	100.0	0.0	100.0

Search

Those who had decided to go to college were asked which sources of

information were most important to them as they went through the process of selecting a particular course in a particular college. The most important sources were: "Family", "Previous Graduates", and "Career Teachers".

Much searching for information tends to occur between the end of fifth year and end of sixth (final) year. Those who searched for information will, presumably, know more about the colleges and about the various courses being offered. Section (b) of the questionnaire was designed to test respondents' knowledge about the colleges. A high percentage of correct answers is taken to indicate that an extensive search had already occurred. Table 2 shows a cross-tabulation between level of knowledge and year of study. Fifth year students displayed a mean level of knowledge of 28 percent. By sixth year, the mean level had increased to 48 percent.

Table 2: *Relationship between Knowledge Level of Colleges and Year of Study*

Level of percent	5th Year Relative percent	6th Year Relative percent
0	7.0	3.3
10	14.7	7.3
20	25.2	7.3
30	25.2	11.4
40	11.9	8.9
50	7.7	20.3
60	5.6	20.3
70	1.4	10.6
80	1.4	7.3
90	0	2.4
100	0	0.8
	100.0	100.0

Alternative Evaluation

Two methods were used to uncover the evaluative criteria used by students in the decision process: (a) direct questioning and (b) perceptual mapping.

(a) *Direct Questioning:*

In the questionnaire, respondents were asked to look at a list of characteristics of third level institutions and state if they thought they were "Very Important", "Indifferent" or "Very Unimportant" to them when they compared the various institutions. On a scale of 1 to 3 (1 being very important and 3 being very unimportant), means ratings were given, in

order of importance (see Table 3). These can be called the "stated evaluative criteria".

Table 3: *Mean Evaluative Criteria Ratings for Third Level Institutions*

Quality of course	1.0
Recognition in job market	1.1
Range of courses offered	1.2
Cost	1.3
Friendliness	1.5
Ease of entry	1.6
Length of courses	1.7
Close to home	1.8
Small size	2.2

(b) *Perceptual Mapping:*

One use of perceptual maps is to uncover the true dimensions used by the consumer as he/she makes comparisons between the competing products without the necessity of direct questioning. In addition, perceptual mapping facilitates the discovery of hitherto unmarked or unnoticed characteristics of the data and illustrates the relative positions of each product along a number of identifiable dimensions.

A number of important considerations should be borne in mind when perceptual mapping techniques are used. Whereas the overall structure of the configuration is usually stable and reliable, local information about close or adjacent points is often not stable. This is due to the fact that each point is not uniquely fixed by the computer procedue, "but rather is fixed within a proportion of the space known as its 'isotonic region'" [Coxon, 1982)], within which the points may move without being constrained by the data.

The steps followed here to determine the dimensions are suggested by Coxon (1982) as an attempt to systematise a very "soft" area in the use of multidimensional scaling, and the resources used to interpret the configuration were:

(a) The authors internal intuitions and hunches;
(b) Suggestions from University colleagues;
(c) Subjects answering in other sections of the questionnaire;
(d) External information from second level students after the map was developed.

It should be recalled that alternative dimensional interpretations to those of the authors are possible.

THIRD LEVEL INSTITUTIONS — A PERCEPTUAL MAP

Fig. 1: College Selection Perceptual Map 1

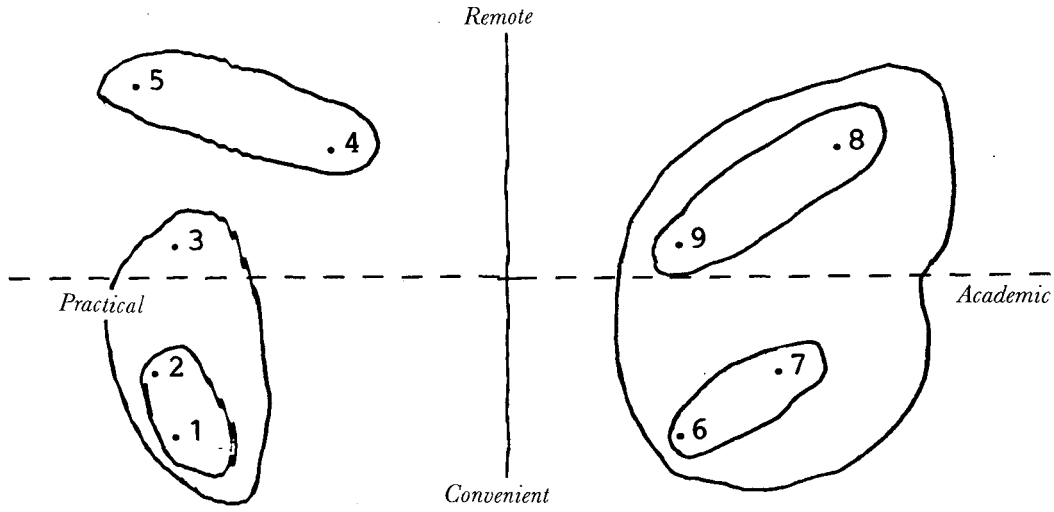


Fig. 2: College Selection Perceptual Map 2

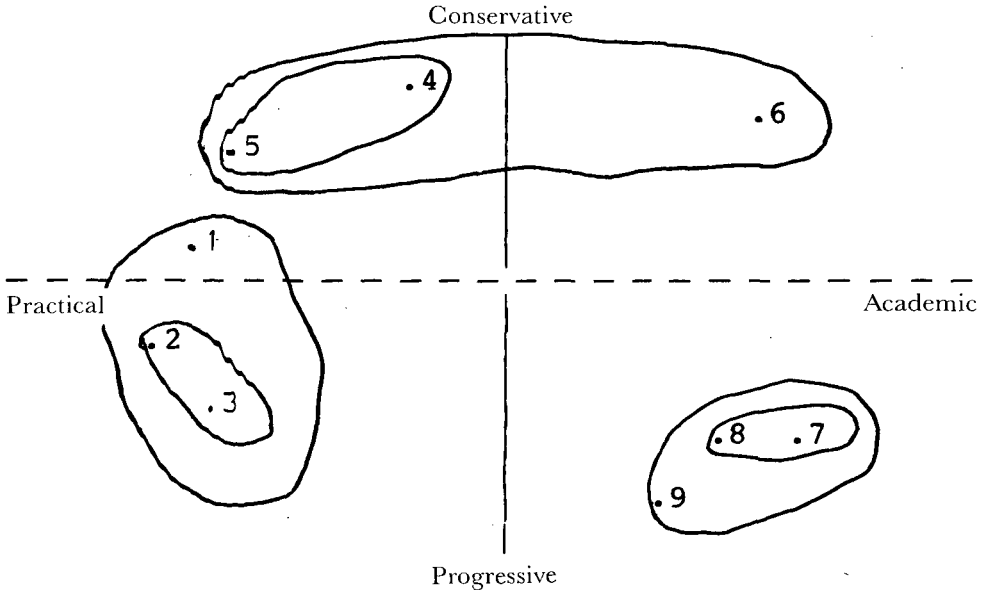
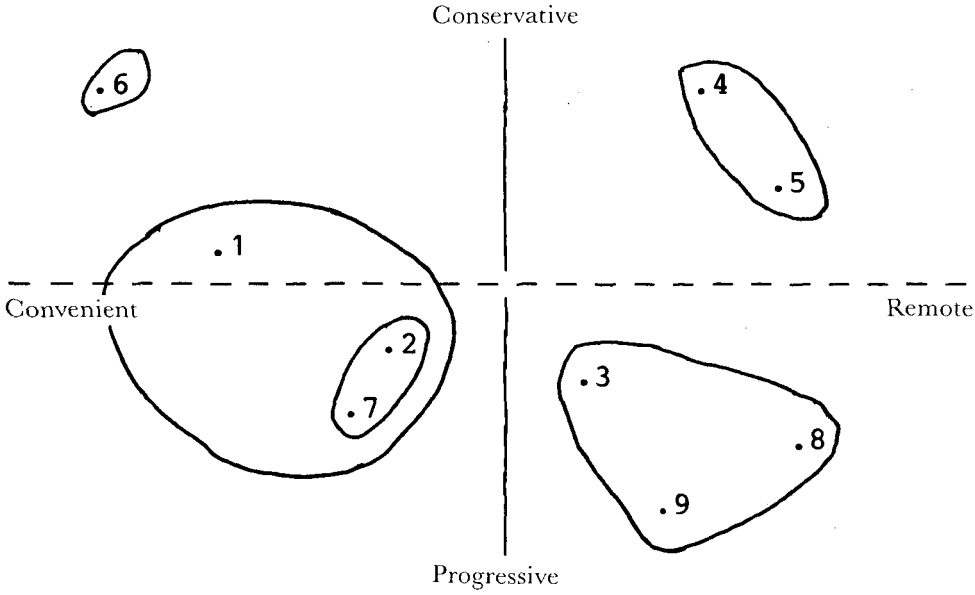


Fig. 3: College Selection Perceptual Map 3



Code:

1. Dublin Institute of Technology (D.I.T.)
2. National Institute for Higher Education, Dublin (N.I.H.E.D.)
3. National Institute for Higher Education, Limerick (N.I.H.E.L.)
4. St. Patrick's College, Maynooth
5. Thomond College, Limerick
6. Trinity College Dublin (T.C.D.)
7. University College Dublin (U.C.D.)
8. University College Cork (U.C.C.)
9. University College Galway (U.C.G.)

The Higher Clustering Schemes (HCS) graphic analysis technique revealed a clustering of DIT, N.I.H.E.D. and N.I.H.E.L. on all three dimensions, indicationg a close substitution between these colleges. A comparison between U.C.D. and T.C.D. shows a close similarity on all dimensions except that of 'conservatism'. The Minimum Spanning Tree (MST) analysis yielded no additional information.

Looking at the relative importance attached to each dimension by fifth versus sixth year, and high versus low knowledge, the following observations were made: Location holds more importance for those students with little knowledge about the colleges. The distinction between academic and practical colleges becomes more important as knowledge is increased. The conservative dimension becomes less important when knowledge is increased.

It is interesting to note that despite the low rating given to "close to home" in the stated evaluative criteria, convenience does appear to be a significant factor.

Choice

In Ireland, all applicants from secondary level schools are required to apply for entry to third level educational institutions through the Central Applications Office (CAO). They must complete a single application form which permits up to ten choices of courses in the nine institutions listed. The choice element in the third level education decision process is a complex one. There are two 'products' involved — the college, and the degree course. The decision processes associated with these products in most cases are interactive. For some, the selection of the college is more important, and for others, the selection of course is more important.

By way of unravelling this complexity, the actual choices made by one cohort of students currently in third level education were examined. The total number of applicants in 1983 was 21,800. Of these, 12,403 (57 percent) used their first two choices for the same types of course, and 7,345 (34 percent) made their first two choices within the same institution. From these figures it can be seen that two groups of potential students exist. One group sees the course type as the most important choice, the other sees the college as the most important. Looking at those who perceive the college as being most important, a comparison can be made by selected college. Table 4 shows the percentages of those with their first choice in the given college who continue their second choice into other courses in that same college.

Table 4: *Percentage Selecting the Same College in First Two Choices on CAO Form, 1983*

	Percent
N.I.H.E.L.	55
U.C.C.	52
N.I.H.E.D.	42
U.C.G.	40
T.C.D.	36
D.I.T.	34
Thomond College	23
U.C.D.	21
St. Patrick's College, Maynooth	13

By looking at those groups which selected the type of degree course as the more important, it is possible to show the different levels of 'loyalty' for

each group. Table 6 shows the percentage of those with their first choice in a given subject group who continued their second choice within that same group.

Table 5: *Percentage Selecting the Same Subject Group in First Two Choices in CAO Form 1983*

	Percent
Engineering related degress	75
Arts Degree	67
Medical related degrees	66
Business related degrees	63
Law degrees	57
Science related degrees	51
Agriculture degrees	48
Architecture degrees	43
Computer/Maths degrees	30
Social Science degrees	27

Outcome

Once a decision has been made, a degree of doubt — "cognitive dissonance", may exist. Such doubt may become apparent between the decision making and the time until that decision becomes irreversible. A period of several months exists between the selection of a course and the final date for use of a "change of mind" request in the CAO system. Of the sixth year students in the survey who had applied to the CAO, 58 percent said that they thought they might use the 'change-of-mind' slip. This is a considerable proportion.

Conclusion

It is clear that the decisions relating to the transition to third level education are high-involvement and complex. This article has illustrated that models and techniques develop in the consumer behaviour area can be used as a framework for discussing and understanding such decision processes.

REFERENCES

Engel, J.F., Blackwell, R.D. and Kollat, D.T. 1978, *Consumer Behaviour,* Dryden Press, Illinois, 3rd edition,.

Coxon, A.P.M. 1982, *The User's Guide to Multidimensional Scaling,* Heinemann Educational Books, London.