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Attitudinal and environmental influences on preferences for commerce and management courses

Hume Winzar

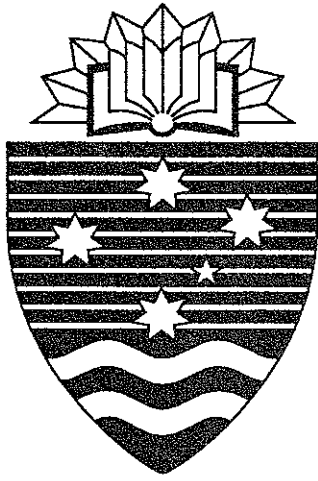
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"Attitudinal and Environmental Influences on
Preferences for Commerce and Management Courses"

H. Winzar and R. Morley

DISCUSSION PAPER NO: 2

July 1990

University Drive,

Gold Coast, QLD, 4229

AUSTRALIA

SCHOOL OF BUSINESS

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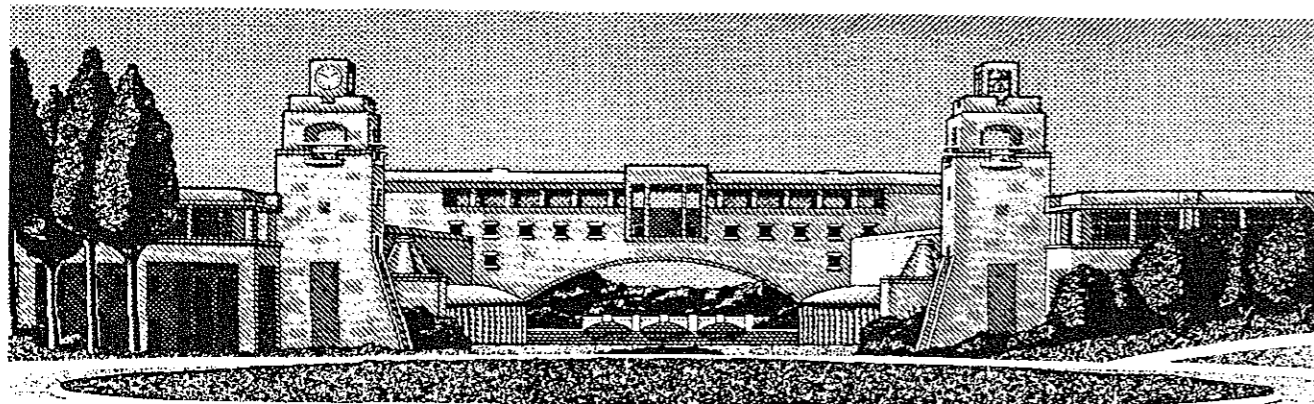
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B O N D U N I V E R S I T Y

Attitudinal and Environmental Influences on Preferences for Commerce and Management Courses

July 1990

Hume Winzar
Bond University

&

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Griffith University

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ABSTRACT

An Australian study attempted to uncover an explanatory model of high school students' expectations of enrolment in alternative business schools. The methodology is suggested as a general approach for further research in the American context. An application of Fishbein's Extended Multi-Attribute model supported the notion that student's expectations of enrolment were associated more with attitudes towards the consequences of enrolment than with attitudes towards the institution itself. The views of parents and significant others had a marginal influence. The relationship was mediated by situational constraints: expected Tertiary Entrance score and the amount of Information students felt they had about an institution. Details of the survey and data analysis procedures are discussed and suggestions made for further research.

ATTITUDINAL AND ENVIRONMENTAL INFLUENCES ON PREFERENCES FOR COMMERCE AND MANAGEMENT COURSES

BACKGROUND

Tertiary education in Australia is facing a period of rapid and fundamental change. In addition to the demographic and cost dynamics similar to those currently affecting higher education in North America (Clinton, 1989), Australian universities are facing significant changes to Federal Government accreditation guide-lines and funding. Policy changes are intended to encourage management of institutions to be more efficient and to develop a more business-like and entrepreneurial culture in these organizations. Largely because of inhibitions placed on the free market by successive policy-makers at the national level, Scott (1987) contends that Australian Universities have, until now, offered programs, awarded degrees and employed staff of similar quality. However, while this may be the case, there is no doubt that prospective students and many employers believe otherwise. The smaller metropolitan universities and colleges, and particularly those which have been unable to mount the more "professional" programs of medicine, law and engineering, have struggled to build sound reputations and to attract good quality students. Some of these institutions see marketing as a means of helping to overcome their perceived inadequacies, rather than further broadening the gap between them and their more prestigious rivals. If inequalities are to be broken down, then we need a better understanding of the university choice process and evaluative criteria amongst prospective students.

LITERATURE REVIEW

A search failed to identify any significant studies in this area undertaken in Australia. However, in the last decade a number of studies have been published in the United States which have attempted to measure the criteria by which a college is judged. Those most frequently mentioned by students are: (1) academic reputation, (2) cost, (3) setting of campus (urban, rural), (4) distance from home, (5) size of campus, (6) social life, (7) physical look of campus, (8) housing and living, and (9) job placement (Murphy, 1981).

Chapman (1981) suggested that students choice of college was a function of general expectations of college life and that this was affected by student characteristics and external influences such as the opinions of parents and friends, costs, location, availability of desired programs and contacts and communication with the institution. Litten (1982) extended Chapman's model by examining the effects of Race, Sex, Ability level, Parents' educational levels, and Geographic location. Parental education had the greatest effect on the choice process. Importantly, interaction effects were found between student ability level, measured by entry scores, and evaluative criteria; that is, fewer of the higher ability students considered costs, careers and campus appearance to be of importance. Attempts to measure attitudes and associated behaviours using objective criteria have provided disappointing and contradictory results (Maguire & Ray, 1981).

Kealy and Rockel (1987) argued for differentiating objective attributes from students' perceived attributes of an institution. They identified three major dimensions of perceived college quality which they felt were almost universally accepted. These are: (1) academic quality, (2) social life atmosphere, and (3) campus location. This was in accord with a review by Discenza et al (1985) which identified fourteen influential attributes which could be categorized into two major groups: academic and social. (This study included location and environmental characteristics into the social category.) Using relatively sophisticated multivariate techniques (factor analysis) Kealy and Rockel concluded that in addition to the influences of peer group and parents, potential students were

affected by promotional literature, current students, and a visit to the campus in their perceptions of quality. Powers (1988) made use of a variation of the belief model of Fishbein (1963) to investigate factors influencing college choice among business School students at four different types of Tertiary Educational Institutions. This model states that the attitude towards a university is made up of the sum of the attributes that the individual believes the university possesses, multiplied by the level of importance of each attribute to the individual. Through focus groups followed by surveys, Powers found that the quality of academic programs and employment opportunities were the primary factors influencing preference at all institutions. Attributes found to be important in the earlier mentioned studies, social life and location were inconsistent in their rankings of importance for the four institutions examined. In a study specific to business school prospects Parker et al (1989) found that academic quality and location were the most important determinants of business school choice and that, contrary to more general studies, sports and social life were rated rather low.

THE AUSTRALIAN SITUATION

Many of the findings in these U.S. studies would be very useful to Australian tertiary institutions wishing to adopt a marketing approach to their student recruitment efforts. However, when applying these findings to the Australian situation, cultural and environmental differences should be taken into account. The most obvious of these differences seem to be that Australian students are less mobile than their American counterparts and likely to have a more narrow range of colleges under consideration. The movie and TV images of Australian life are largely mythical. Probably 90% of Australia's 17 Million people live in cities, within two hours drive from the ocean, and within an hour from at least one (probably three) university campus. With few exceptions tuition fees are Federally subsidised and very low, interest in sports and athletics is centred more in regional clubs than in colleges, and alumni programs provide far less support to colleges than in America. Moreover, Americans seem to have a more favourable attitude towards higher education than do Australians. An empirical study of prospective students' attitudes towards universities in Australia thus was warranted.

FISHBEIN'S EXTENDED MULTI-ATTRIBUTE MODEL

Working within traditional behaviouristic learning theory, Fishbein (1963) developed a theory of attitude formation and change, which can be summarized by the following equation:

$$A_o = \sum_{i=1}^n b_i a_i$$

where:

A_o = attitude toward a psychological object o;

b_i = belief (i.e., the subjective likelihood) that object o possesses attribute i;

a_i = evaluation (i.e., goodness or badness) of attribute i; and

n = number of salient attributes.

Thus affect is seen as the sum of salient beliefs about an object or brand, weighted by the value of those beliefs.

Fishbein offered several modifications of his basic model in an attempt to better explain the formation of brand attitudes and purchase intentions (Fishbein, 1967). The most important modification was in the measure of

attitudes. Fishbein proposed that the appropriate attitude measurement is based on the act of purchasing and consuming a brand, (A_{act}), not on the brand itself, (A_o). In thinking about purchase the consumer takes into account the consequences of purchase. (I have a very favourable attitude towards BMW motor cars, but quite a different attitude towards buying one.) In a second modification social influences were explicitly included as Normative Beliefs and Motivation to Comply (Fishbein and Ajzen, 1975). In a review of studies, Ryan and Bonfield (1975) concluded that attitudes towards purchasing a brand were more highly correlated with behavioural intention and with behaviour than were attitudes towards the brand itself. The extended multi-attribute model is summarized by the following:

$$B \approx BI = w_1 A(act) + w_2 SN + e$$

$$A(act) = \sum_{i=1}^n B_i a_i$$

$$SN = \sum_{j=1}^k NB_j MC_j$$

where:

B = behaviour;

BI = intention to perform B ;

$A(act)$ = attitude toward performing B ;

B_i = the belief that performing B will lead to outcome i ;

a_i = the evaluation of outcome i ;

n = number of salient outcomes;

SN = subjective norm;

e = random error;

w_1 and w_2 are empirically derived parameters;

NB_j = the belief that a j th relevant other expects the decision maker to perform or not perform B ;

MC_j = the decision maker's motivation to comply with the expectation of person j ;

k = the number of relevant others.

Fishbein's Extended Multi-Attribute Model can be regarded as one of a family of Expectancy-value attitude models. Bagozzi (1985) described it as a Molar additive attitude model which applies when a person forms a global attitudinal reaction but a separation of beliefs and evaluations occurs. The model is best suited for representing summary psychological reactions and for predicting multiple-act criteria. It is not particularly useful for fine-grained analyses characterised by idiosyncratic psychological reactions at the disaggregate level. For those analyses one must adopt a molecular or decompositional approach which examines the structure and the nature of attitudinal interactions. In other words, with the Fishbein approach we can achieve overall evaluations applicable to groups but it is not useful for sorting out the logic of any individual person.

Application of the extended model would overcome many of the shortcomings of the Powers (1988) study mentioned above. Rather than looking at attitude towards the institution itself ($A(obj)$) we should look at attitude towards enrolment in that institution and the consequences of enrolling and graduating ($A(act)$). This should be mediated by perceptions of the views of significant others (SN).

THE STUDY

In order to better understand the relationships amongst perceived attributes, individual differences, and expectation of enrolment we operationalized the Fishbein extended multi-attribute model as follows:

$$BI = \beta_1 Att(act) + \beta_2 SN + \beta_3 TE + \beta_4 Info + \beta_5 School + \beta_6 ParentEd + \beta_7 Sex + e$$

where:

BI = Behavioural Intention (expected likelihood of enrolment);

Att(*act*) = attitude toward enrolment and perceived consequences;

SN = subjective norms;

Info = felt level of information about an institution;

School = type of high school;

ParentEd = level of parents' education;

Sex = gender;

β_i = coefficients to be estimated.

We considered the three metropolitan universities in Brisbane, Queensland, Australia. They are:

University of Queensland: U of Q is the oldest university in Queensland, established some 80 years ago. It has a traditional structure and offers a broad range of degree programs which includes all the major professions. It has around 18,000 students enrolled at its St Lucia campus which is located about 8 Km to the west of the city centre.

Queensland University of Technology: QUT was established in 1966 in the city heart as an Institute of Technology. It has built up a very strong reputation among employers for its vocational approach. It offers a broad range of degree programs in the Technologies, Business, Engineering and Law to its 10,000 students.

Griffith University: GU began teaching in 1975 with a somewhat innovative style organized around multi-disciplinary schools of study rather than the traditional departmental single-discipline approach. Degree programs are offered to about 7000 students in Arts, Education, Science and Commerce. It does not offer the so-called "Professional" degree programs such as Law, Engineering or Medicine.

Commerce or Business courses are available at all three universities and, while course structures differ, students may gain accreditation with a number of professional associations.

THE SAMPLE

A stratified sample of Brisbane matriculating students was drawn midway through the academic year in 1989. The strata assured a fairly representative sample of State High School and Private School, and male and female respondents. Within each school a single grade 12 (matriculating) class was selected at random and all students who planned to proceed to higher education were asked to complete the questionnaire. A total of 95 usable questionnaires were completed by students planning to undertake courses in Commerce, Business or a related area. This was a subsample of a data set used for a larger experimental research design (Morley, 1989).

INSTRUMENTATION

Exploratory depth interviews and focus group discussions with high school students suggested a number of items of concern to students in their evaluations of tertiary institutions. These largely mirrored the US research but issues such as athletics programs and dormitory facilities, as expected, were irrelevant. Based on these items a draft questionnaire was written and pretested for ambiguity and ease of answering on a convenience sample

of first year Commerce students. A second draft was pretested on a convenience sample of year 12 students at a local State High School. Some minor changes to question wording were then made for the final questionnaire. The questionnaire was divided into sections reflecting the a priori constructs of Attitude towards the institution, Attitude toward enrolment, Subjective norms, and evaluative weightings for the components of each of the constructs. Attitudinal questions were discrete 5 point semantic differential scales designed to be used for later summated scale construction (Albaum *et al*, 1981). The questions designed to measure the independent variable constructs were:

Attitude toward the Institution: Att(obj)

This Institution would have a high academic quality.

This Institution has a very good reputation.

This Institution would have good quality physical features such as buildings, equipment, lecture rooms, etc.

There would be a very good social life at this Institution.

A degree from this Institution would provide very good employment opportunities.

This Institution has a very convenient location for me.

Degree Programs from this Institution would be of high quality.

This Institution has a great deal of prestige.

Attitude toward enrolment: Att(act)

If I attended this Institution, I would become a well informed/better educated and knowledgeable person.

If I graduated from this Institution, I would achieve high prestige/ status in the community.

If I studied at this Institution, I would gain a better understanding and appreciation of the world.

If I completed a degree from this Institution, I would be likely to obtain a position with a high salary.

If I enrolled in a degree program at this Institution, I would be well on the way to an interesting/satisfying career.

If I attended this Institution, I would have a great social life.

Subjective Norms: SN

My parents would like me to study at this Institution

My best friends would like me to study at this Institution

My teachers would like me to study at this Institution

My school guidance officer would like me to study at this Institution

Question layout encouraged respondents to make relative assessments of the institutions. An “eye-balling” of the completed questionnaires suggested that this had occurred. A sample layout of the questions is shown in Figure 1. Weighting scales were derived using five point Semantic Differential scales ranging from Extremely important to Less important as shown in Figure 2.

Figure 1:

Sample Question Layout

This Institution would have a high academic quality.

Queensland University of Technology	1	2	3	4	5
	Strongly agree		Neither agree nor disagree		Strongly disagree
University of Queensland	1	2	3	4	5
	Strongly agree		Neither agree nor disagree		Strongly disagree
Griffith University	1	2	3	4	5
	Strongly agree		Neither agree nor disagree		Strongly disagree

Figure 2:

Importance Ratings

I want to find out which of the following features of a University or College (Tertiary Institution) are the most important to you to help you to decide which University or College to attend.

Please indicate on the following scales the importance of each of the following items (5=extremely important, 3=important, 1=less important, etc).

Location of the Institution (or closeness to where you will be living)	1	2	3	4	5
	Less important		Important		Extremely important
Academic Quality of Institution	1	2	3	4	5
	Less important		Important		Extremely important
Employment Opportunities provided for its graduates	1	2	3	4	5
	Less important		Important		Extremely important
Prestige/Reputation of the Institution	1	2	3	4	5
	Less important		Important		Extremely important
Social Life available for its students	1	2	3	4	5
	Less important		Important		Extremely important
Physical facilities (e.g. buildings, Grounds and Equipment)	1	2	3	4	5
	Less important		Important		Extremely important

There is a danger with this type of question that respondents will regard all attributes as "Extremely important" and confound the utility of the weighting scale (Emory, 1980). Here, the proximity of the attributes encouraged respondents to make ratings on a relative basis.

Students were asked to indicate on a seven point (1-7) scale their expected Tertiary Entrance score, which is the standardized student ranking system used in Queensland. Amount of information students felt they held about each university was measured with a five point (Nothing - A Great Amount) (0-4) semantic differential scale. Dichotomous Dummy variables were encoded to indicate gender (1=male, 0=female), whether one or both parents held a degree (1=degree, 0=no degree) and, type of high school attended (1=private, 0=state).

INTERNAL VALIDITY

Some of the items constituting Att(obj) are similar to those constituting Att(act). There is a risk that separate measurements of these constructs is a somewhat artificial exercise, that they may really be measurements of the same thing and that any results are simply the artifacts of the measurement process. These are important considerations and they should be overcome, to the extent that they can.

Table 1:
Factor Analysis

	QUT				λ
	F1	F2	F3	F4	
Academic Quality	.814	.	.	.	.716
Reputation	.745	.	.	.	.597
Facilities	.649	.	.	.	.421
Social Life	.	.	.	.756	.657
Employment	.761	.	.	.	.647
Location	.363	.	.	.497	.481
Quality Degree	.740	.	.	.	.585
Prestige	.536	.	.	.	.430
Educated person	.	.	.640	.	.532
Achieve status	.	.	.697	.	.574
Understand world	.	.	.764	.	.633
High salary	.	.	.644	.	.495
Satisfying Career	.	.	.638	.	.523
Great Social Life	.	.	.434	.732	.790
Parents	.	.593	.	.	.435
Friends	.	.811	.	.	.711
Teachers	.	.905	.	.	.825
Guidance Officer	.	.912	.	.	.844
Eigenvalues	3.50	2.87	2.83	1.69	10.89

Note: Factor loadings less than 0.333 have been deleted for ease of reading. λ = Communalities.

The internal validity of the a priori scales were tested using a confirmatory factor analysis (Kim & Mueller, 1978). The approach used was similar to that proposed by Churchill (1979). Results for QUT are presented in Table 1. (Results for the other two institutions showed only slight differences in factor loadings.) The a priori structure of the three constructs Att(obj), Att(act) and SN were strongly supported. Most importantly, the sample respondents did see the components of Att(obj) and Att(act) as separate issues. Four factors with eigenvalues greater than unity were extracted instead of the expected three. The fourth factor captured the variance of the two measures of Social Life and the measure of Location of Institution. These were found to be of importance to US high school students in the overall evaluation of colleges, but in our Australian sample the Factor analysis suggests that they were not a part of the desired evaluative constructs. This may be attributed to the fact that almost all of the sample respondents expected to continue to live at home while at university and to study in the same city. Thus Social life and Location with regard to universities lie in different dimensions of thought for these Australian students. Consequently, Social Life as a component of Att(obj) and of Att(act), and Location as a component of Att(obj), were deleted from the summated scale measures.

Table 2. Reliability of Scale Construction:			
Att(obj)			
	QUT	U of Q	GU
Cronbach Alpha	.837	.851	.838
Variable		Item correlations	
Academic Quality	.731	.640	.724
Reputation of Institution	.654	.674	.708
Facilities	.469	.665	.404
Employment Opportunities	.645	.601	.606
Quality Degree Programme	.656	.686	.647
Prestigious Institution	.518	.558	.628
Att(act)			
	QUT	U of Q	GU
Cronbach Alpha	.766	.760	.745
Variable		Item correlations	
Educated	.486	.474	.434
High Prestige/Status	.585	.574	.528
Understand the World	.616	.534	.528
High Salary Position	.492	.500	.608
Interesting Career	.508	.563	.457
Subjective Norm			
	QUT	U of Q	GU
Cronbach Alpha	.843	.867	.757
Variable		Item correlations	
Parents	.459	.516	.387
Best Friends	.689	.750	.506
Teachers	.788	.806	.690
School Guidance Officer	.802	.827	.663

Cronbach's (1951) coefficient alpha was used to measure the internal consistency of the three multi-item scales. Alpha scores were consistently high across all three institutions for all three constructs, as shown in Table 2. Marginally higher alpha scores were possible for the Subjective Norms components with the removal of the item Parents. However, clearly the perceived views of a student's parents is an important component. If it were excluded from a summated scale then it would have to be included in any model as a separate independent variable (Peter, 1979). The use of five point rating scales was an arbitrary decision based largely on the desire to simplify question response. There is evidence that reliability scores may be even higher if the rating scales were expanded to 7 point or 9 point intervals (Churchill & Peter, 1984). In any event, the construction of summated scales was considered appropriate.

Scales for Att(obj), Att(act) and SN were constructed by calculating the mean of the scores for each component, weighted by its importance rating. Attribute scores, ranging from 1 to 5, were rescaled to range from -2 to +2 to emphasize the direction of response, in accord with Fishbein (1975), and then weighted by their importance rating ranging from 1 to 5. Thus, the potential range for the summated scale Att(obj) was -10 to +10.

(See endnote #)

RESULTS

Mean scores for the predictor variables and Behavioural Intention are presented in Table 3. Paired comparison t-tests were conducted on these data revealing significant differences amongst all evaluations of the universities except on Subjective Norms and Level of Information between QUT and Griffith University. Attitude towards the Institution (Att(obj)) and Attitude towards enrolment (Att(act)) consistently showed preferences in the order of U of Q, QUT, and then GU. Interestingly, no differences were evident on Behavioural Intentions amongst the three institutions suggesting that there was no pattern of students generally expecting to enrol in one institution over any other. These are presented in Table 4. Table 5 shows correlations amongst predictor variables and the criterion variable.

Variable	QUT	U of Q	GU
BI	1.90 (1.40)	2.06 (1.39)	2.06 (1.40)
Att(obj)	5.43 (3.88)	7.37 (4.07)	2.86 (3.93)
Att(act)	2.84 (2.56)	3.37 (2.81)	1.98 (2.67)
SN	1.11 (1.53)	1.39 (1.69)	0.87 (1.43)
Information	1.55 (1.02)	1.79 (1.12)	1.53 (1.06)
TE	4.12 (1.64)		

Table 4.

Paired Comparison t-tests for mean differences.

Mean differences of paired evaluations and t statistic for significant difference from zero.

Variable	UofQ vs QUT	QUT vs GU	UofQ vs GU
BI	0.19	0.17	0.02
t	1.27	0.95	0.11
Att(obj)	1.94	2.57	4.51
t	5.81****	5.85****	8.34****
Att(act)	0.53	0.87	1.40
t	3.25**	3.77***	4.58****
SN	0.29	0.23	0.52
t	1.96	1.48	3.27**
Information	0.24	0.02	0.26
t	2.11*	0.18	2.18*

*p<.05 **p<.01 ***p<.001 ****p<.0001

Table 5.

Correlation Matrix

	A(obj)	A(act)	SN	TE	Info	BI
A(obj)						
QUT	1					
UQ		1				
GU			1			
A(act)						
QUT	.438	1				
UQ	.502	1				
GU	.530	1				
SN						
QUT	.260	.240	1			
UQ	.357	.365	1			
GU	.382	.227	1			
TE						
QUT	ns	ns	ns	1		
UQ	.379	.227	ns	1		
GU	ns	ns	ns	1		
Info						
QUT	.318	ns	.263	.206	1	
UQ	.282	.221	.314	.284	1	
GU	.263	ns	ns	ns	1	
BI						
QUT	.350	.440	.350	.439	.370	1
UQ	.297	.293	.223	.655	.322	1
GU	ns	.286	ns	ns	.272	1

n=95 p< 0.05

Ordinary Least Squares regression would be the expected method for testing the predictive power of the hypothesized independent variables on Behavioural Intention. This form of analysis assumes a dependent variable that is at least interval scaled. In this case, however, the dependent variable is a five point rating scale in response to the question: "How likely would it be for you to enrol for a degree at the following Institution when you leave school?" (Highly unlikely to Highly likely). One must ask whether such a scale really can be considered interval (Newell, 1987). It would appear that the interval nature of a scale is dependent on the nature of the question asked, the presentation of the scale and the nature of the respondent (Crask & Fox, 1987). The scale is really ordinal and to use a linear model such as OLS, arguably, would be inappropriate.

A more appropriate model and computer algorithm have been developed by McKelvey and Zavoina (1975) with assumptions similar to those of the linear model, for use when the observed dependent variable is ordinal. *"This model is an extension of the dichotomous probit model, and assumes that the ordinal nature of the observed dependent variable is due to methodological limitations in collecting the data, which force the researcher to lump together and identify various portions of an otherwise interval level variable. The model assumes a linear effect of each independent variable as well as a series of break points between categories for the dependent variable. Maximum likelihood estimators are found for these parameters, along with their asymptotic sampling distributions, and an analogue of R² (the coefficient of determination in regression analysis) is defined to measure goodness of fit."* (page 103.) A review and intuitive explanation of NPROBIT and other ordered discrete dependent variable models is presented in Johnson (1990) and a discussion of the generalized form of the model is found in Terza (1985). Specification and interpretation of the NPROBIT program is similar to OLS regression. NPROBIT however produces less biased estimates and generally offers a much better explained variance (R²). It has been found that on most occasions OLS regression provides similar results to NPROBIT (Amemiya, 1981). For comparison purposes, the results of both NPROBIT and OLS Regression are presented in Tables 8(a) and 8(b) respectively. The standardized Beta coefficients are very similar.

Results using all of the hypothesized predictor variables are presented in Table 6. The dummy variables measuring demographic features were not found to contribute significantly in explanatory power. Tests for interaction effects also were not significant. Therefore, these items were removed from further analysis to give the results presented in Table 8(a).

Table 6. Ordered Probit			
Predictors	Complete Model		
	Beta Weights		
	QUT	U of Q	GU
Att(act)	.307****	.092	.209**
SN	.213**	.114	.036
TE	.339****	.640****	.097
Info	.179**	.150*	.192**
School	.014	.047	.100
ParentEd	.024	.001	.068
Sex	.103	.065	.073
R ²	.46	.53	.18
*p<.10	**p<.05	***p<.01	****p<.001

Attitude towards the Institution (*Att(obj)*) is included in the model in Table 7. The effect of this construct is found to be not significant, even though *Att(obj)* and *Att(act)* are correlated, as one would expect.

Table 7. Ordered Probit			
Comparing effect of <i>Att(obj)</i> with other regressors			
	Beta Weights		
Predictors	QUT	U of Q	GU
<i>Att(obj)</i>	.040	.106	.051
<i>Att(act)</i>	.292****	.147	.215**
SN	.212**	.104	.040
TE	.336****	.659****	.078
Info	.189**	.163*	.200**
R ²	.48	.53	.17
*p<.10 **p<.05 ***p<.01 ****p<.001			

DISCUSSION

This study shows the results of the application of Fishbein's Extended Multi-Attribute Model on expected enrolment of matriculating students in alternative universities. In terms of explained variance, or predictability, results are exceptionally good for models of this type in Social Psychology. The hypothesized relationship between expected enrolment and Attitude towards enrolment and Subjective Norms was mediated by contextual variables: expected entrance score and the amount of information students felt they had about the institution. TE score was the strongest predictor for both University of Queensland and Queensland University of Technology whereas it appeared of negligible importance for Griffith University.

Subjective Norms appeared to be of importance only to expected enrolment at QUT. (A more detailed analysis of the components of SN suggests that Parents views were the most influential component of this construct.) We could attribute this to the possibility that the views of others have been internalized and are contained within the Attitudes towards Enrolment and the Institution; i.e. to multicollinearity in the model. The correlations however do not support this.

The model for Griffith University differs significantly from those for its two "competitors". Anecdotal evidence suggests that many students simply do not have enough information, or have received conflicting information, about this university. Resulting student evaluations then may be conflicting or even random. The importance of TE scores in the model is intriguing. Explained variance for U of Q, for example, would drop to 0.15 if TE were deleted. One gets the impression that many students expect to enrol at U of Q simply because they can (not because they necessarily believe that they will get a better quality education) and some may expect to enrol at Griffith University simply because they do not expect achieve a high enough score to enrol at the others. However, the lack of a significant negative correlation for TE and Behavioural Intention for Griffith University tends to discount this notion.

Of course it is quite possible that our results are an artifact of the measurement process. It may be that evaluations are based on heuristic perceptions of each institution. Attribution theory would suggest that when asked to

identify criteria and then evaluate universities, respondents will construct specific criteria from their heuristics. (A simple deductive heuristic could be: "To enter 'University-A' one must have a high TE score. Therefore University-A is better. Therefore it must have better facilities, teachers, etc.") Of course Fishbein and Ajzen (1975) never suggested that people really do atomize their evaluations in a compensatory model as implied by the construction of the Multi-Attribute Model, but they do argue that the model offers guide-lines for understanding behaviour and for formulating marketing strategy.

Timing for the research also may be an important factor in the outcome of the research. Focus group discussions and anecdotal evidence suggest that many high school students do not become very concerned about their prospects for tertiary entry until October of their final year, when Queensland students must make formal application to courses through a centralized tertiary enrollments system. (Note the Australian academic year runs February thru November.) Until that time students gather information in a passive mode, either not thinking at all or accepting the views of significant others as their own and developing simple models about career paths and courses. This is consistent with Krugman's theory of Low Involvement information acquisition (Krugman, 1965). Approaching the deadline for submission of applications, students become increasingly concerned, and some engage in active information search. The Fishbein model used in this research requires respondents to make comparative evaluations of alternatives according to a number of salient attributes. This task requires a relatively high level of Involvement in the product category (Clark & Belk, 1979). The authors feel that a similar survey conducted much later in the year may have provided more consistent results across all three institutions. Additionally, we suspect that this is less of an issue in the U.S. context.

This paper also has ignored the effects of disjunctive influences: in particular, the decision to enrol at one institution because a student did not want to enrol at another. We found that the data used in this study do not lend themselves to this issue because collinearity in the regressors confounds interpretation of the model.

Table 8(a)			
Ordered Probit			
	Final Model		
	Beta Weights		
Predictors	QUT	U of Q	GU
Att(act)	.301****	.107	.188**
SN	.225**	.103	.068
TE	.337****	.638****	.083
Info	.195**	.147*	.186**
R ²	.45	.52	.16
*p<.10	**p<.05	***p<.01	****p<.001

Table 8(b).			
Ordinary Least Squares			
	Final Model		
	Beta Weights		
Predictors	QUT	U of Q	GU
Att(act)	.279***	.091	.241**
SN	.208**	.082	.057
TE	.343****	.590****	.090
Info	.194**	.129	.208**
R ²	.41	.47	.14
*p<.10	**p<.05	***p<.01	****p<.001

IMPLICATIONS FOR STUDENT RECRUITMENT

Implications of this study differ for each of the three universities, and according to their objectives in recruitment of high school graduates. Given that a general objective is to recruit the highest number of "quality" students as possible, then U of Q has much to gain by reinforcing existing perceptions, i.e. by perpetuating the "myth" of an association between course quality and TE score. GU, and to a lesser extent QUT, have more to gain by discounting the myth and publicising objective facts. QUT also has achieved success through the role-model and gate-keeper influences of parents, friends and school counsellors.

The research presented here can be regarded as on-going steps in defining the interactions and relative importances of decision criteria for University choice. We believe our approach has built upon earlier quantitative research, and which can be modified easily to include almost any higher education choice situation. But it is clear that much more research is needed to better understand the nature of university choice.

Endnote # The rescaling of rating scales to positive and negative scores has implications not only for indicating direction of attitude but influences the nature of measured interrelationships between predictor variables and criterion variables. Multiplicative models such as used here assume ratio measures. The nature of transformations on rating scales which are, at best, interval scales can cause severe distortion of correlation measures. The transformation used goes some way towards minimizing this distortion. The details are beyond the scope of this article but the reader is referred to Bagozzi (1984) for an explanation of this important consideration.

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