

Student decision processes: Rational investment in human capital?

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ABSTRACT

A study of university and polytechnic students' decision making processes is reported, testing the strength of human capital theory and screening theory, together with support for notions of skills transferability and the need for upskilling. The decision to undertake tertiary education is perceived as a serious 'human capital' investment. Screening theory is shown to be a contributing factor in employment decisions in tandem with human capital theory. The research data suggest that the theories underpinning the reform policies do not provide a complete model of tertiary education decision processes.

Introduction

The previous articles have illustrated that the nature of education markets and of the student choice process are complex. An investigation of literature relating specifically to student choice decisions reveals a concentration on choices between public and private secondary schools or choice between universities in markets such as America (e.g. Paulson, 1990). Very little is directly relevant to the choices between types of tertiary institution (such as between polytechnic and university) or higher education and work.

Literature review

The importance of family background is highlighted in a few studies, supporting the proposition that the rational economic investment model of education decision making which appears to be assumed by Treasury and by policy makers may offer an incomplete explanation of the processes involved. For example, Maani (1997:157) reviews a number of cross-sectional studies (none New Zealand based) of participation in higher education and concludes that, for both males and females, the decision to participate in post compulsory education or training is greatly influenced by the socio-economic background of the household. She also suggests that while male participation was relatively independent of household income, female participation is *directly* related to the level of household income (Maani, 1997: 157).

In an earlier study (Maani, 1995:7), she observes that (Australian) students from professional backgrounds are nearly twice as likely as those from skilled manual backgrounds and five times more likely than those from unskilled manual backgrounds to commence tertiary studies. She also notes (Maani, 1995:12) that a disproportionate number of students from blue collar backgrounds

fail to complete all twelve years of primary / secondary schooling in Australia and are therefore ineligible for entrance to higher education.

Of the small amount of New Zealand based research, the focus has been on secondary schools, e.g. Lauder et al, (1992; 1994). One study of tertiary decision choices by secondary students (Lauder et al, 1992) is based on a small number of case studies from which it is difficult to generalise. The authors suggest (Lauder et al, 1992:56) that "education inequalities cannot be understood without reference to social class and therefore any understanding of the nature of education decision making has to be placed within the context of social class". These authors in a later report (Lauder et al, 1994:57) conclude that "critics of marketization have argued that those already endowed with cultural and material capital would simply add to their existing advantages by being given choice in education".

Ahola and Nurmi (1997:134), in a study of Scandinavian tertiary students, stress the importance of cultural capital in the family as a major influence on higher educational preferences of students. They suggest that "those endowed with cultural capital who also perform well prefer the university sector. Lower levels of cultural capital and poor school success steer students into the vocational higher-education sector".

Introduction to Research Study

The research study which follows provides data from one New Zealand university (University of Auckland) and one New Zealand polytechnic (Manukau Institute of Technology) as indicative evidence of the complexity of tertiary education decision choices. The study is also intended to help clarify understanding of the way in which New Zealand tertiary students actually make these decisions. The research programme was restricted to the marketing and advertising industries rather than attempting to cover all the sectors which are serviced by business programmes (which would include accountancy, law, management, computing and office systems / secretarial programmes). The selection of these industries was based on knowledge of the industries and access to key personnel, and on the fact that this industry has not been subject to any substantial research in this area in the past. Obtaining equivalent data from several of the other sectors would have been extremely difficult. Restricting the study to the industry groups specified may, however, limit the generalizability of the results to the wider business community.

Research Objectives

Given the dearth of literature relevant to the choice of tertiary study versus work and the choice between types of tertiary institutions in New Zealand, an empirical study was conducted to investigate a number of specific research questions. These questions are listed below.

1. How strong a factor is human capital theory in students' decisions to participate in tertiary education?
2. What potential impact might fee increases have on students' intentions to continue tertiary studies?
3. Is tertiary education perceived as a private or a public good (or a mixture of both) by employers and recent graduates?
4. What is the perceived strength of screening theory relative to human capital theory among employers and recent graduates?
5. Are the emerging policies and practices consistent with the reform objectives? Where inconsistencies are evident, what is the potential impact on the achievement of the reform

objectives? As part of this examination, specific aspects of the reform objectives are investigated, i.e.:

- a. Is greater programme choice available within the polytechnic business programme sector for potential students as a result of the reforms?
- b. Will the reforms encourage greater diversity of polytechnic programme offerings or lead to greater conformity across providers?
- c. Are improved signals given to the providers of polytechnic business programmes regarding what 'customers' (both industry and potential students) want?
- d. Are employers and recent graduates aware of the concept of skills obsolescence, and, if so, do they support on-going 'refreshing' or renewing of skills?
- e. Is the concept of transferable skills, central to the National Framework, supported by employers and by recent graduates?
- f. What impact are the reforms having on groups historically underrepresented in tertiary education, in terms of their participation in polytechnic business programmes?

Research Methodology

The research was conducted in two parts. Firstly, students studying marketing at Manukau Institute of Technology and at the University of Auckland were surveyed to ascertain their perceptions regarding the validity of a number of assumptions relating to aspects of the theories which underpin the education reforms. A comprehensive questionnaire was used. A similar questionnaire was then sent to:

- a. a smaller sample of marketing managers and senior advertising agency executives; and via them, to
- b. a small sample of recent graduates on their staff.

Recent graduates were defined as employees with less than three years experience. The use of three separate but linked questionnaires allowed the responses from current students intending careers in the marketing and advertising industries to be compared with the responses of:

- a. those individuals in the industry responsible for hiring new recruits; and,
- b. those individuals within the organisations who had less than three years' industry experience.

1. Student samples:

a) Manukau Institute of Technology (MIT) students:

All marketing specialist courses for the National Diploma in Business Studies and the Bachelor of Business at MIT were visited, with students asked to assist by completing the questionnaire. Time was scheduled, with the assistance of individual lecturers, during the last half hour of each class visited to allow for the completion of the questionnaire. Students were asked not to complete more than one questionnaire if they were in more than one marketing specialist class. It was felt that this method would result in higher response rates than other, more expensive methods such as postal questionnaires. All responses were anonymous.

Response rates were high:

	Diploma students	Degree students
Total enrolled	123	54
Responses	106	50
Response rates	86.2%	92.6%

b) University of Auckland students:

Access was provided to students enrolled on the Stage 2 Bachelor of Commerce Marketing course at both the main city campus and the Tamaki campus. Students were requested by their lecturers to complete the questionnaire at the end of their class. Response rates were also high:

	Main campus students	Tamaki students
Total enrolled	433	138
Responses	367	112
Response rates	84.7%	80.6%

Results for the two campuses were kept separate at the request of the University as it was felt that the composition of the two groups of students would differ. Responses to all questions were compared across the four subgroups studied, i.e.:

1. MIT diploma(marketing major)students;
2. MIT degree (marketing major) students;
3. University of Auckland main campus marketing students; and,
4. University of Auckland Tamaki campus marketing students.

Chi square tests were conducted to investigate whether the responses for these groups were sufficiently different as to be statistically significant. The results of the tests are noted after each set of tables.

It is not appropriate to calculate percentages from aggregate data due to the vastly different sample sizes across the four subgroups. Such aggregate percentages would be weighted heavily in favour of the university main campus responses (which make up 58% of total responses). However, we have shown an average percentage column which is the unweighted average of responses across the four groups for the analyses in this article and the article that follows.

2. Industry Sample:

The marketing / advertising industry is fragmented and, unlike sectors such as accountancy, lacks an overall industry body. Two main industry groups dominate in terms of numbers of members and size of organisations represented (and therefore potential for employment of graduates). These organisations also have major input into the operation of the polytechnic programmes through advisory committee membership and other activity. The groups are the Association of New Zealand Advertisers (ANZA) which, in spite of its name, represents the *marketing* operations of 83 major companies which collectively account for over 40% of the advertising expenditure in New Zealand, and the 57 major advertising agencies which belong to the Advertising Agencies' Association of New Zealand (3As). Both industry groups are based primarily in the main centres, with 70% in Auckland and 25% in Wellington. The four major research companies in the country (all with large staff numbers and a history of recruiting graduates) were also included.

It was decided to restrict this section of the study to these groups as the most significant employers within the marketing and advertising sectors. This eliminated a large number of small organisations such as marketing consultants and advertising consultants, which generally employ less than five staff and which are therefore not significant employers of new graduates. Mailing lists for these smaller organisations are not comprehensive and therefore may also not provide for adequate representation of these organisations.

The mailing lists for the two organisations were supplied directly by the Executive Directors of the organisations themselves to ensure accuracy of the data base information.

Questionnaires sent:	104 organisation
Responses:	51 organisations
Response rate:	49.0%
Unable to participate:	7 (no hirings in last two years)
Usable responses:	44 employer organisations
% response adjusted population of 97 organisations	45.4%

This industry has a history of low response rates to surveys: Duffy (1992:23) reported a 26.7% effective response rate from a study of marketing managers and Eagle (1992:62) reported a 24.1 % effective response rate from a study of marketing managers and senior advertising executives. This was taken into account in the methodology and steps were taken to improve the likely response rate. The questionnaires were personally addressed' to the marketing manager/ director of the ANZA member companies and the managing director/ general manager of the advertising agencies. An individually addressed letter explaining the objectives of the research was included. This letter contained a promise to telephone the respondents to discuss the questionnaire and to answer any questions. They were requested to complete the employer questionnaire and to introduce any relevant staff who were provided with the background to the study and the objectives for the research. These individuals were then asked to complete the employee questionnaire. A reply paid envelope was provided with each questionnaire.

Attempts were made to contact by telephone each person to whom the questionnaire had been sent. This required multiple calls to try to establish contact (after five unsuccessful calls, messages were left). Actual contact was made with only 73 of the 104 individuals, although indirect contact via a range of support people (primarily secretaries) was made with the rest. While the telephone contact was extremely time consuming, often requiring multiple telephone calls before contact was made, and individual visits to collect the questionnaires in twelve cases, it undoubtedly aided obtaining a reasonable response rate.

The 44 organisations which provided usable responses also distributed the employee questionnaires and reply paid envelopes to recent graduates on their staff (i.e. those who had graduated in the last five years): 72 usable responses were received.

Research analysis: Investment in human capital

If human capital theory is a strong factor in helping to understand students' decision process, a substantial proportion (at least one-quarter) of respondents would be expected to agree with statements such as:

- the cost of study was weighed against the chance of gaining a job without the qualification;
- the cost of lost income during the period in which they were studying was considered; and,
- there was an expectation that future earnings would compensate for study costs and for lost earnings.

Table 1 shows that, while there was some variation in responses across the four subsets of students studied, overall approximately one third agreed with each of the first two statements and over one half with the third. These are higher than the percentages of recent graduates who were asked to reflect back on their studies (refer Table 2). Several of these respondents noted that, given that current students incur substantially higher costs than they themselves did, they would be likely to consider such factors more carefully if they were faced with study decisions now. This may indicate an increased awareness of human capital issues.

Table 1: Consideration of potential benefits from completing their programme of study: existing students

	Polytech Diploma (n=106) %	Polytech Degree (n=50) %	University Main campus (n=367) %	Uni. Tamaki camp (n=112) %	Average %
a) Cost of study versus chance of gaining job without a qualification was considered					
Agree	35	36	28	31	33
Disagree	65	64	72	69	67
Total	100	100	100	100	100
b) "Cost" of lost income was considered					
Agree	37	26	29	37	32
Disagree	63	74	71	63	68
Total	100	100	100	100	100
*c) Future earning will compensate for study costs / lost earnings					
Agree	52	54	58	71	59
Disagree	48	46	42	29	41
Total	100	100	100	100	100

* Chi square significance difference $p < .03$

Table 2: Consideration of potential benefits from completion of studies: Recent Graduates

Potential benefits	% (n = 72)
a When graduates were students, they weighed the costs of study against chance of gaining job without qualification	
Agree	24
Disagree	76
Total	100
b When graduates were students, costs of lost income were included as part of overall costs of studies	
Agree	25
Disagree	75
Total	100
7.2c When graduates were students, future earnings were expected to compensate for money not earned while studying	
Agree	50
Disagree	50
Total	100

The importance of the 'investment' nature of tertiary education as perceived by students is perhaps indicated by the percentage of students who have obtained loans to finance their studies. Of current students, slightly under 40% had taken out a student loan to assist with the costs of their studies (refer Table 3). However, across the four groups, only between 20% and 30% were receiving a student allowance, possibly indicating that they come from families where their parental income exceeds the levels for which allowances may be provided to the students themselves.

Table 3: Current status of Students: Financial Assistance

	Polytech Diploma (n=106) %	Polytech Degree (n=50) %	University Main campus (n=367) %	Uni. Tamaki campus (n=112) %	Average %
a Receive student allowance					
Yes	23	20	28	30	25
No	77	80	72	70	75
Total	100	100	100	100	100
7.3b Have taken out student loan					
Yes	41	30	37	37	38
No	59	70	63	63	62
Total	100	100	100	100	100

Chi square tests reveal no significant differences between the four subgroups.

Perceptions Regarding Potential Fee Increases: 'Price Sensitivity'

If students perceive tertiary education as providing major potential future benefits, we would expect that they would be prepared to cope with the possible fee increases which have been forecast in order to continue with their studies. Some evidence of price sensitivity is evident, with only 9% indicating that they will not have trouble paying their fees even if asked to contribute 50% or more, but more than 40% indicating that their ability to pay would be affected if asked to contribute up to 25% of the cost of their studies (refer Table 4).

Table 4: Impact of fee increases on student's study: fee contribution level at which ability to pay would be affected (includes full fee paying students and those on scholarships or whose fees are paid by another organisation)

Fee increa level	Polytech Diploma (n=106) %	Polytech Degree (n=50) %	University Main campus (n=367) %	Uni.Tamaki campus (n=112) %	Average %
20%	31	22	32	31	29
25%	17	20	17	12	17
30%	15	24	12	20	18
35%	9	2	7	13	8
40%	8	4	7	6	6
45%	0	2	1	4	2
50%	7	2	5	7	4
no trouble paying	8	12	14	3	9
don't know / N/A	5	12	5	4	7
Total	100	100	100	100	100

These results should be viewed with caution - while students indicated that their ability to pay could be affected, Table 5 indicates that students had considered possible actions which would allow them to cope with the fee increases (thus possibly reinforcing indirectly the importance they place on the education 'investment' decision). A range of actions were indicated in coping with the possible fee increases, with 58% indicating intentions to either take out or increase existing student loans and 61% indicating that they would either take a part time job or increase hours already worked in a part time job.

Table 5: Action to be taken to cope with increased fees: (note: multiple responses permitted)

	Polytech Diploma (n=106) %	Polytech Degree (n=50) %	University Main campus (n=367) %	Uni.Tamaki campus (n=112) %	Average %
No action	17	18	13	10	15
Take out student loan *	20	32	36	35	31
Increase existing student loan *	28	22	28	30	27
Take part time job *	17	10	23	33	21
Increase hours already worked at part time job	39	40	37	42	40
Other #	15	10	6	9	10

* Chi square significant difference $p < .05$ # Other: included (numbers specifying each option shown in brackets) Go to Australia to study (2), Protest (6), Borrow from family (5), Leave (5) Steal (2), work to save then go back (3), seek scholarship (2), Prostitution (1)

Less than 15% indicated that they would consider ceasing full time study if required to contribute up to 25% of their study costs, but 66% indicated that they would do so if required to contribute up to 50% (refer Table 6). However, only 16% indicated that they would abandon studies entirely at this point, with 42% indicating their intentions to study part time and the balance undecided (refer Table 7).

Table 6: Contribution level at which students would consider ceasing full time study (includes full fee paying students and those on scholarships or whose fees are paid by another organisation)

Fee increase level	Polytech Diploma (n=106) %	Polytech Degree (n=50) %	University Main campus (n=367) %	Uni.Tamaki campus (n=112) %	Average %
20%	6	2	3	8	5
25%	13	8	11	5	9
30%	8	12	8	13	10
35%	14	18	12	13	14
40%	10	12	9	12	11
45%	7	8	4	3	5
50% *	15	2	16	18	12
would continue.	18	26	28	21	24
at 50%+ ^{##}					
Don't know	9	12	9	7	10
N/A					
Total	100	100	100	100	100

*Chi square tests revealed significant differences between groups $p < .05$

Table 7: Students' study option if ceased full time study

	Polytech Diploma (n=106) %	Polytech Degree (n=50) %	University Main campus (n=367) %	Uni.Tamaki campus (n=112) %	Average %
Study part time	41	48	35	44	42
Abandon study entirely *	24	14	17	12	16
N/A / don't know	35	38	48	44	42
Total	100	100	100	100	100

*Chi square tests revealed significant differences between groups $p < .10$

Hammermesh & Rees (1988) cite American research from the 1970s (Bishop, 1977) which indicated that doubling tuition costs reduced the likelihood of attending college - but by only 14%. No more current research has been located which would allow this issue to be explored in the context of the current reform era. The results shown above suggest that students value their education sufficiently highly to be prepared to make substantial investments, both financial and personal, in completing their programme of study. As noted previously, such data may indirectly support the concept of investment in education - and therefore indirectly support human capital theory. The responses seem to indicate a somewhat complex decision process at work - i.e. while students may be price sensitive, they are generally reluctant to give up tertiary education entirely.

Private versus Public Benefits

The question of whether tertiary education is perceived as a private or a public good (or a mixture of both) was tested against employers and against recent graduates. If employers regard education as an individual benefit, there should be strong support for individual's funding the bulk of the costs of their studies. Employers however show mixed support, with 66% supporting a 25% fee contribution level but only 9% supporting a 50% fee contribution level (refer Table 8). Their responses are similar to the views of recent graduates, of whom 54% support a 25% fee contribution level but only 8% a 50% contribution level.

Support for fee contributions is justified by 24% of employers on the basis of forcing commitment where students are contributing towards their costs, but only 15% stated that the costs would be carried by the ultimate beneficiaries (refer Table 9). Responses from recent graduates are similar for the commitment dimension, with 24% also suggesting that students are serious about their studies if they have to pay for them, but a far smaller percentage (3%) suggest that the costs would be carried by the ultimate beneficiary (refer table 10). Opposition to high levels of fee contributions by students is also similar for both employers and recent graduates, with equity issues and benefits from education accruing to the wider society being cited as the two main reasons for this stance (refer Table 10).

Table 8: Support for fee contribution by students: Employers' responses versus graduates' responses

Fee contribution level and support	Employers (n = 44) %	Recent graduates (n = 72) %
25% fee contribution		
Agree	66	54
Disagree	34	46
Total	100	100
50% fee contribution		
Agree	9	8
Disagree	91	92
Total	100	100

Table 9: Reason for support or otherwise of students' fee contribution: Employers' responses

Reason for support or otherwise	(n = 44) %
<u>Support for fee contribution:</u>	
- Costs carried by ultimate beneficiaries	15
- Payment forces serious commitment	24
<u>Opposition to fee contribution:</u>	
- Equity: blocking able poor	21
- Education benefits society as a whole	30
- Debt burden is disincentive to study	3
No response / don't know	7
Total	100

Table 10: Reason for support or otherwise of student fee contribution : Recent graduates' responses

Reason for support or otherwise	(n = 72) %
<u>Support for fee contribution:</u>	
- Nothing is free	3
- Students are serious if have to pay	24
- Costs carried by ultimate beneficiaries	3
<u>Opposition to fee contribution:</u>	
- Inequitable	25
- Country benefits from educated population	40
No response / don't know	5
Total	100

Skills Obsolescence

As can be seen from Table 11, there is high awareness among employers and recent graduates of the concept of skills obsolescence. In support of the awareness of the need to refresh or renew skills, both groups offered 2 range of suggested forms of upskilling. Most were linked to specific job related skills, as shown in Table 12. There are similarities, but not total agreement, between the two groups regarding the type of upskilling which should be undertaken.

Table 11: Skills obsolescence: agreement with concept (and need for updating of skills throughout working life): Employers' and Recent Graduates' responses

	employers (n = 44) %	recent graduates (n= 72) %
Agree	86	96
Disagree	14	4
Total	100	100

Table 12: Primary form of upskilling recommended: Employers' versus Recent Graduates' responses

	employers (n = 44) %	Recent graduates (n = 72) %
applied / job specific	41	67
current and international developments / latest technology	23	0
whatever people want	5	11
computer applications	5	0
presentation skills	2	0
polytechnic / university papers	0	7
post graduate work	16	10
don't know	8	5
Total	100	100

Both groups also acknowledged that additional training was occurring, with 63% of employers indicating that they were providing training opportunities and a further 16% indicating that they intended to do so in the future. Of recent graduates, 68% had undergone additional training and a further 21% indicated that they intended to do so in the future. It appears, from Table 13, that there is high awareness within industry, both from employers and employees of the concept of skills obsolescence and there will be support for periodic upskilling, with 79% of employers and 89% of recent graduates having organised training already in place or plans for this in the future.

Table 13: Additional training provided for / undertaken by employees: Employers' responses versus Recent Graduates' Responses

	employers (n = 44) %	recent graduates (n = 72) %
Yes	63	68
Intend to in future	16	21
No	21	11
Total	100	100

Importance of 'transferable skills' and support for the National Framework

One of the benefits of the education reforms and of the emerging National Framework has been the provision of 'portable' qualifications, whereby the knowledge and skills gained will be of benefit to future employers. A range of training programmes were listed as having been made available (refer Table 14 below) - most, as expected from the responses already shown in Table 12, were directly related to aspects of current business operations. Support for postgraduate studies was low, with only 7% of employers listing support for this option.

Table 14: If training provided, type of programme offered / supported: Employers' responses

Training Provided	(n = 44) %
Specific job related	27
Selling / customer skills	7
Computing	11
Leadership / management	9
Presentation skills	25
Post graduate diploma	7
No training programme / no response	14
Total	100

For recent graduates, as for their employers, the majority of training undertaken was, as expected, perceived as being related to aspects of their current employment (refer Table 15) the percentage that had opted for post graduate study was higher than in the employer group (13%).

Table 15: Details of additional training undertaken: Recent Graduates' Responses

Training Provided	(n = 72) %
Communication / presentation skills	10
Post graduate Dip. Mktg / MBA	13
Job specific skills	33
Computer skills	8
Management skills	1
Direct marketing	1
No response	34
Total	100

The recent graduates were asked to indicate the usefulness of the training they had undertaken. Almost half indicate that it was primarily directly useful in their current job and 11 % each indicated that it was either useful in future positions - or not useful at all (refer Table 16).

Table 16: Usefulness of additional training: Recent Graduates' responses

Usefulness of additional training	(n = 72) %
Useful in current job	49
Useful in future positions	11
Not useful at all	11
Not applicable / no response	29
Total	100

Transferable skills do not receive high levels of support as a direct benefit from the training undertaken, however, both groups indicated that they believed that the knowledge and skills gained in house could be easily transferred to other employers (refer Table 17).

Table 17: Transferability of knowledge & skills gained in house: Employers' versus Recent Graduates' responses

Transferability	employers (n = 44) %	recent graduates (n = 72) %
Easily transferred	61	81
Moderately	16	10
Not well	18	6
Don't know / no response	5	3
Total	100	100

Therefore it appears that employers will focus on the skills necessary or desirable for the specific needs of the enterprise and will de-emphasise the importance of transferable skills and or the needs of the industry or of the economy as a whole, although Tables 16 and 17 indicate that there is a perception that such a focus has benefits to future employers as well. In-house education and training programmes will focus on the specific skills required by the employer (e.g. company philosophy, presentation skills etc).

Familiarity with reforms

Given the substantial amount of investment in the education reforms, it is noteworthy that only 20% of employers, 15% of graduates and an average 10% of students are very familiar with the reforms. There is an indication of a high level of apathy regarding the reforms - with over 80% of both employers and recent graduates indicating that they did not want any information on the reforms. The low level of interest in the reforms may be a somewhat ominous indicator of extreme apathy regarding the continued development of the Framework, particularly where government funding for Industry Training Organisations is being terminated and industry organisations are expected to voluntarily contribute towards the ITO operations. The Bankers Institute has, as noted previously, already deregistered as an ITO, preferring to stay with the existing range of qualifications (see Barnett et al, this issue). The Retail ITO was, as early as mid 1996, experiencing severe problems in obtaining voluntary levies from its members. Therefore, given that the marketing and advertising industry sectors have had a historically low level of interest in and commitment to education and training, any attempt to obtain funding from sector members is likely to meet with a less than enthusiastic response.

Screening Theory versus Human Capital Theory

In order to determine the relative apparent strength of screening theory versus human capital theory, a range of questions was asked of both employers and recent graduates. First it was necessary to determine what percentage of employers had actually recruited polytechnic or university graduates in the last two years. Table 18 shows that almost 80% of the employer organisations had hired at least one graduate in that time. Table 19 shows that university graduates made up 87% of those hired, with commerce graduates being the most frequently hired. (Note: multiple responses were permitted - organisations may have hired more than one graduate).

One consequence of the low number of employers who indicated that they had hired polytechnic graduates is that, for the latter questions which asked employers to rate attributes of university and polytechnic qualifications, few employers would have been able to answer the questions with recent first hand knowledge of polytechnic graduates. There are relatively few polytechnic marketing diploma graduates in the market compared to university graduates, and, at the time of the study being conducted, no polytechnic degree graduates due to the recent introduction of the latter programme.

Table 18: Hireage of graduates in last two years: Employers' responses

Hireage	(n = 44) %
Graduates hired	79
No hirings	21
Total	100

Table 19: Graduate source: Employers' responses

Graduate source	(n = 44) %
University commerce	64
Other university	23
Polytechnic marketing / advertising programmes	14
Polytechnic other programmes	5
Total * multiple responses permitted	106*

Table 20 below shows the factor analysis of responses to 8 variables which may be considered by employers when recruiting junior marketing staff. This factor solution has extracted three factors from a total of 8 variables. Factor I loads heavily on first three variables which might be labelled as 'job specific ability'. This is because variables 1, 2, and 3 stress the job performance ability considered by employers in the qualifications of candidates. This factor alone has explained half of the total variation in this factor solution. Factor II is correlated most highly with variables 4, 5 and 6. It might be termed as qualifications as an indicators of 'job performing skills'. This factor indicates that employers think that better qualified candidates are likely to perform the job better than less qualified candidates. The third factor can be labelled as 'personal characteristic specification' because it loads high on variables 7 and 8. These two variables relate to the personality aspect of candidates.

This Table shows support for both human capital theory (specific qualifications relevant to the job: i.e. content/ acquired body of knowledge attributes) and screening theory (qualifications used as an indicator of other attributes). A combination of the two appears to be used by employers in making the decision to hire new staff.

Table 20 Rotated factor matrix of factors considered when recruiting junior marketing staff (employers' responses)

Variables	Factor		
	I	II	III
1. Qualifications indicate perseverance	.640	.124	.117
2. Qualifications indicate training ability	.631	-.040	.246
3. Look for evidence of personality	.641	-.026	-.055
4. Look for qualifications relating to the job	-.380	.750	.027
5. Use qualifications as indicator of diligence	.419	.648	.396
6. Look for evidence of ability to communicate	.476	.601	-.187
7. Use qualifications as indicator of critical thinking	.110	-.138	.837
8. Look for evidence of individual's background	.047	.465	.718
Variation explained	29.46	17.21	14.09
Total variation explained = 60.76			
Kaiser-Meyer-Olkin measure of sampling adequacy	.580		
Bartlett's test of sphericity: Chi-square	34.02		
Df	28		
Significant	.199		

Table 21 shows the factor solution of importance of background variables considered when recruiting junior marketing staff with less than 5 years experience. This factor solution has extracted two factors from the list of 6 variables. Factor I loads high on school record, ethnicity and social class. It reveals that employers consider 'sociographic factors' as an important factor while recruiting

junior staff. This factor has explained 2/3 of the total variation in this factor solution. The second factor loads high on tertiary qualifications, age and sex of candidates and can be termed a 'demographic factor'. This analysis reveals that employers pay much attention to demographic and social factors while recruiting junior staff.

In terms of background factors considered, it shows that tertiary qualifications were indicated as being the predominant concern (with over 90% of employers rating them very important or important). Over 70% also rated secondary qualifications in these two categories. The profile of recent graduates is overwhelmingly (over 97%) European in origin and from upper-middle socio-economic groups (over 90% come from the top three levels). What is not known is what the ethnic profile was of graduates available to employers to choose from. In the early 1990s, the lack of minority ethnic groups within the advertising industry was queried with the Association of Advertising Agencies by the Race Relations Conciliator - who referred the question to the polytechnics to answer in terms of why so few 'minorities' were graduating! (personal correspondence Innes, 1993).

Table 21 Rotated factor matrix of importance of background variables considered when recruiting junior marketing staff with less than 5 years experience (employers' responses)

Variables	Factor	
	I	II
1. Secondary school record	.670	-.204
2. Ethnic origin	.837	-.032
3. Social class	.869	.054
4. Tertiary qualifications	.230	.603
5. Age of applicant	-.485	.657
6. Sex of the applicant	.422	.701
Variation explained	39.05	22.18
Total variation explained = 61.68		
Kaiser-Meyer-Olkin measure of sampling adequacy		.582
Bartlett's test of sphericity: Chi-square		34.697
Df		15
Significant		.003

Table 22 presents the results of factor analysis of responses regarding graduate's perceptions of possible benefits from completing studies. This factor solution has extracted two factors from a list of 8 variables. Factor I which loads highly on variables 1 to 5 can be labelled as 'pecuniary benefits of education' which shows that candidates perceive education as a financial investment in order to earn a better living later in life. This factor appears to be the most important since it alone has explained 2/3 of the total variation in this factor solution. Factor II, which loads high only on variables 7 and 8, suggests that education is, for some students, 'self development'. From the full factor analysis it appears that the main aim for most of these students is to earn a 'better' living. Aims relating to learning and self-development are secondary to this very pragmatic, utilitarian aim.

Table 22 Rotated factor matrix of possible benefits from completing studies: Current Students

Variables	Factor	
	I	II
1. Makes getting a job easier	.573	-.190
2. Improves long term career prospects	.668	-.116
3. Improves earning potential	.747	-.201
4. Improves salary in the longer term	.800	-.113
5. Status	.683	.116
6. Provides wider range of job opportunities	.471	-.127
7. Course is worth doing in its own right	.428	.617
8. Other reasons for doing course	.176	.809
Total variation explained	34.00	16.53 = 50.53
Kaiser-Meyer-Olkin measure of sampling adequacy		.815
Bartlett's test of sphericity: Chi-square		917.659
Df		28
Significant		.000

Note: 'Other' reasons for doing course include:

Meeting people/ making contacts/ networks/ socialising (4)

Successfully completing a challenging course (11)

Learning how to cope with pressure (5), Learning how to learn (1)

Helping to do own job / run own business (2), Unspecified (18)

A number of statements were then tested to measure the perception of the value of the qualifications possessed by the recent graduates, with the responses from the employers contrasted to those from the graduates themselves. Approximately 1/3 of each group believe that the graduate would not have got their job without their qualification, over half of each group agreed that it had made getting the job easier. A higher proportion of graduates than of employers saw the qualification as having provided a wider range of job prospects, improved earning potential and salary prospects in the longer term. 27% of employers and 47% of recent graduates saw the qualification as providing status, with slightly smaller levels of support in each of the two groups respectively suggesting that the "course was worth doing in its own right". Employers saw no other benefits from the studies, while a small percentage (12%) of recent graduates suggested factors such as 'building contacts', 'socialising' and 'completion of a challenge'.

From the research questions relating to screening theory, it appears that employers do use educational qualifications as a de facto indicator of ability. It cannot be determined whether they are less concerned about the specific content of qualifications than the evidence of attributes which may indicate future job performance (i.e. whether screening theory is more dominant than human capital theory) as there is evidence of a combination of the two.

Employers tend to consider university qualifications as better indicators of critical thinking and analytical skills than polytechnic qualifications. However, there are substantial percentages that reserve judgement on the new polytechnic degree qualifications. Students recognise that potential employers use qualifications as a screening device and therefore include this factor when making decisions about tertiary study.

Summary of findings from research questions

It is clear that the decision to undertake tertiary education is perceived as a serious 'human capital' investment. There is an expectation of a return on that investment by students who are the predominant decision makers regarding both whether to undertake tertiary study and what particular programme of study will be taken.

There is evidence of both human capital and screening theory in operation when new staff are employed and that employers, recent graduates and current students alike share a perception of a combination of elements of the two theories. There is not support from employers and recent tertiary graduates for students to have to pay the bulk of their education costs, with the perception being that there are major benefits to society and that education is thus more of a public than a private good. While the employers and recent graduates support students paying up to 25% of their fees, they are strongly opposed to the possibility that students might pay up to 50% (as proposed as one of the options by the Ministerial Consulting Group (1994), i.e. the 'Todd Report'.

Employers and recent graduates also recognise the need to keep skills updated, and while there is an emphasis on skills of immediate practical relevance to the current job, they appear to believe that these skills are readily transferable. There is evidence of only moderate awareness of the National Framework, and overwhelming apathy regarding obtaining information on the reforms - surprisingly, existing students share this. This low level of interest does not bode well for future development of the Framework, particularly if financial contributions are sought from industry.

All three groups recognise the contribution of tertiary qualifications in gaining employment and in improving career and financial prospects - recent graduates express high levels of optimism regarding their prospects now they are in their chosen industry. None of the groups expressed dissatisfaction with the existing tertiary education structure in terms of its preparation for a career.

The theories against which research questions were asked in this chapter do not provide a complete model of the decision making process involved in selecting a tertiary education programme. Unanswered questions include the influence of demographic factors such as socioeconomic levels on this process and why some students, who meet the criteria to study at university, consciously decide to undertake polytechnic studies instead. The following chapter explores the differences in demographic and socio-economic profiles and in the decision making processes between students at the two institutions.

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