

Abstract: A buyer behaviour perspective of university choice

This thesis examines the decision making and information search process of students choosing university courses in Victoria Australia. The position adopted for this study is that of a buyer or consumer behaviour perspective.

This is the first study of its kind undertaken in Australia. Much related research has been done in the United States and elsewhere. However, the Australian higher education system has unique characteristics. Consequently, while existing student-choice models drawn from elsewhere provide a useful foundation, they are not sufficient to answer the key question: *How do students choose universities in Australia?* Implicit in this overarching question are several issues examined by this study: *how* a student makes a choice is related to *what* choices there are to be made, and *why* the student makes a choice about a particular institution.

A hypothetical research framework is used to examine these issues. The research combines an understanding of existing literature in buyer behaviour, consumer psychology and higher education and builds a new model of the 'buying' process of students from a *marketing* perspective.

The Australian higher education system is moving towards an open and market-driven system of providing access to the educational 'product.' It is implicitly assumed that this market will operate as an economically rational market, where, *inter alia*, production is constrained to what people will buy and buyers make economically rational decisions.

However, this study shows that the fundamental principle of open markets, that of consumer sovereignty, may not operate in the higher education market. Students are *chosen* as opposed to making sovereign choices, and this single fact significantly affects their decision-making behaviour. Further, the act of being *chosen* has an intrinsic value in social terms; thus students as consumers of higher education may be satisfied to operate in a closed market system where others may be excluded. The findings of the study have a number of implications for higher education policy and the marketing of institutions.

Declaration of original authorship

This is to certify that:

- i. The thesis comprises only my original work,
- ii. Due acknowledgment has been made in the text to all other material used,
- iii. The thesis is less than 100,000 words in length, exclusive of tables, maps, bibliographies, appendices and footnotes,

Signed

Linda-Marie Brennan _____ Date _____

Acknowledgements

I would like to acknowledge the assistance of the following people for their (direct and indirect) assistance in the preparation of this thesis.

Dr Richard James – supervisor

Associate Professor Craig McInnis - supervisor

Associate Professor Robin Pollard - who was a supervisor in an earlier incarnation of my PhD studies

Professor Mark Gabbott – Head, Dept of Marketing (Monash University) - for his continuing motivation

Mr Travis Marriott – for providing the initial impetus and asking the first question

Ms Ruth Macdonald and Mrs Rachelle Robertson – for helping with data entry

Mrs Anna McArthur – for proof reading the final draft

Dr Felix Mavondo - for his assistance with structural equations modelling

Ms Sally Joy - for starting the whole thing, including my career

Ms Erica Brady, Mr David Toleman, Ms Marge Grant, Ms Kate Solomon, Mr Paul Wellington, Mrs Joan Brennan - for their continuing cheerful support.

My family and most importantly, Nick, Caitlin and David Brennan – for this thesis, which could not have been achieved without their emotional support and ability to share their lives with a 100,000 word monster.

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Section I: Introduction and methodology

This thesis is structured in four distinct sections. The first section contains the introduction which includes an overview of the research problem and the contribution to knowledge made in this thesis. In addition, the first section includes the detailed methodology adopted for the examination of the research question.

The second section provides the reader with a background of the educational choice literature. This section is designed to illustrate the context in which the decision is made.

The third section consists of four chapters where the decision making behaviour of prospective students is examined in detail. These chapters are designed to present differing perspectives on how and why students choose a university.

The final section reviews and summarises the findings of the four data collection chapters and presents the implications for those involved in developing higher education strategy.

This thesis characterises the decision making and information search process of students choosing university courses in Victoria, Australia. The position adopted for this study is that of a buyer or consumer behaviour research perspective.¹ A hypothetical information search process model, originally designed within the consumer research paradigm, has been examined within the university choice context. The hypothetical model assumes that consumers follow a complex decision making process when choosing between purchase alternatives. While the model can be used to inform university marketing strategies, the findings of the study challenge a fundamental assumption underpinning government higher education policy - that students are rational consumers operating in an open market system.

This chapter provides an outline of the key questions being examined in this thesis and presents the research problem in the higher education policy context.

1.1 Higher education as an open market system

The West Report (1998) develops a vision for higher education policy in which higher education in Australia will operate as a deregulated 'industry' providing educational products to informed and discerning buyers (students). Implicitly, the policy of the present Australian Government endorses a *market* driven system of higher education.

However, the open market proposition is based on *economic* theory. The term market, in economic theory, means a place where people buy and sell goods. This hypothetical market place assumes that competitors will develop products if there is demand (and that they will not produce products where there is no demand). In addition, buyers of products will pay prices according to the level of supply and demand. Thus, increasing supply decreases the price and increasing demand increases the price if supply is constrained. Finally, this hypothetical market place assumes that buyers will make rational choices. Economic markets are assumed to be efficient places. Production is constrained to only what people are willing to buy, buyers make economically sensible decisions and buyers only pay what they are willing to pay. Therefore, from a government perspective there is no wastage of resources in an economically efficient system.

However, it is argued that the 'market' for higher education may not be an economic one and that a marketing paradigm might be more appropriate for understanding the choices made by students in selecting a university to attend. The concept of the market in marketing theory is somewhat different to the economic definition. The term 'market' in marketing theory is a

¹ The term consumer is used throughout this thesis in preference to buyer because it is recognised that many students do not 'buy' in the traditional sense of the word. For a discussion of the complexities of these issues refer to Brennan & Bennington (1999).

group of actual and potential buyers of goods, services and ideas - therefore people can be target markets. Marketing strategies are designed to influence the behaviour of actual and potential consumers. Consumers are clearly defined, their needs and wants are understood and products are designed which meet those needs and wants. Thus, the underlying assumption in any *marketing* situation is that 'the customer is king' (Brown, 1976).

This perspective is not in conflict with current Australian government policy, which is designed to develop a system whereby the student (as consumer) has more open choices relating to their needs. However, an open market conception of higher education is built on the assumption that prospective students are able (and willing) to make rational choices about which institution will provide them with the 'right' education to meet their needs.

The aim of this study is to examine students choices of university from a consumer behaviour perspective. Accordingly, a mail survey was administered to 2,400 first year university students early during the first semester of their enrolment at Victorian universities. The results of the study challenge the idea that students' behave as consumers of educational services in much the same ways that consumers buy tangible commodities.

The knowledge developed from this study will enable marketers of institutions and courses to have a greater understanding of the influences on behaviour of their customers (prospective students). In academic terms, the development of this knowledge in a *high involvement*² service context may establish its applicability, validity and potential for generalisation to other services marketing fields.

Notwithstanding Australian government policy statements supporting students as customers, there is considerable argument about whether or not students *are* customers or consumers of services (discussed in Brennan & Bennington (1999)). However, this study does not aim to deal with the issue of whether or not institutions *should* think of, or treat students as consumers of educational 'products'. For the purpose of this study it is assumed that institutions that spend \$60 million per year³ on attracting students are already treating them as prospective customers (at least in the sense of advertising and promotion). Therefore, students are already being treated as consumers of an educational service (Hayden, 1993). Consequently, the key question becomes – do students actually make *rational* purchasing choices about the universities that they eventually attend? To challenge the assumption that students are able to make rational choices about an educational product it is necessary to turn first to the buyer behaviour literature.

² A high involvement product or service is one in which most consumers would see the product as one which is important to them. Therefore, they are interested in the product class and 'involved' in assessing the value of the product in purchase situation. This issue is discussed in Chapter Six – Motivation to search for information.

³ Estimated by assuming that the marketing and development budget of Monash University is typical of the average university expenditure. Monash spends 0.8% of their total expenditure on marketing and development (Monash University, 1999). 0.8% of the aggregate Australian university total expenses of \$7.7b (Department of Education Training and Youth Affairs, 1999) is approx. \$61.5m.

1.2 Buyer behaviour - an overview of the context

Buyer behaviour as a discipline borrows heavily from a number of academic disciplines (Craig-Lees, Joy & Browne, 1995). There are almost as many models of buyer behaviour as there are authors in the field. A review of any buyer or customer behaviour textbook will indicate a complex buyer behaviour process similar to the one represented in Figure 1-1. The shaded sections of the diagram indicate the focus of this study. The model depicted in Figure 1-1 has evolved from that formerly presented in Brennan & Marriott (1996). The earlier model was adapted from buyer behaviour theory and is updated here with recently reviewed literature including such authors as (Antonides & Van Raaij, 1998; Hawkins, Neal, Qvester & Best, 1997; Howard, 1994; Plous, 1993; Sheth, Mittal & Newman, 1999).

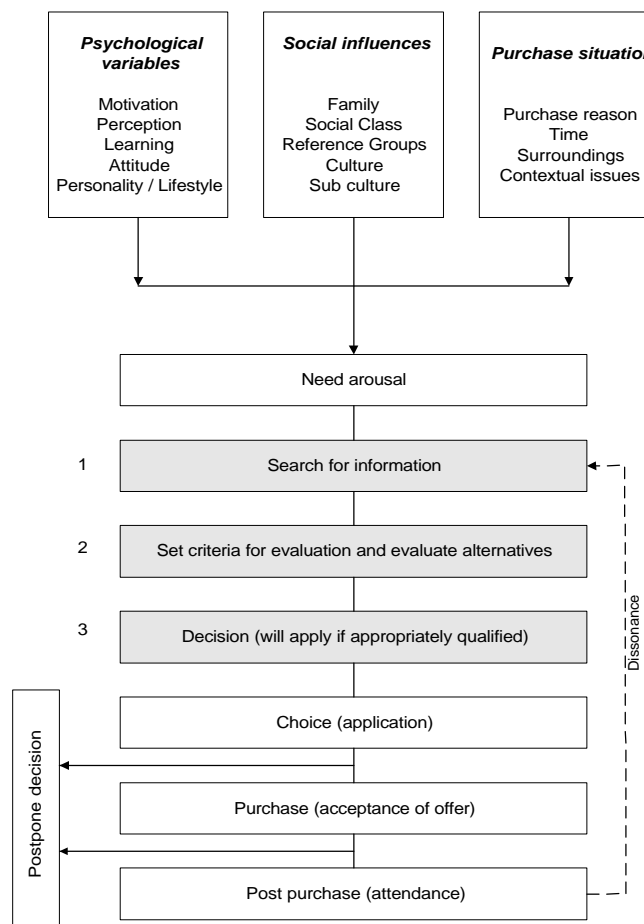


Figure 1-1: Conceptual model of the customer behaviour process. Source: adapted from Brennan & Marriott (1996). For details of components not included in the original see, for example Sheth et al. (1999).

The above model represents a problem-solving form of decision making (Brinberg & Lutz, 1986). This implies that customers:

- 1) follow a series of 'steps' in the process of selecting which product to purchase
- 2) follow the steps in an hierarchical and sequential fashion, and
- 3) are interested and involved in the product category.

Furthermore, the decision-making model implies causality between the sequential stages. These assumptions are arguable. However, for the initial purposes of the research, it was assumed that the customer behaviour process undertaken by prospective students *is* a complex problem-solving situation (Selnes & Troye, 1989; Sheth et al., 1999).

This assumption was made for the following reasons:

1. The decision is likely to involve decision-making processes over a number of years. Students may select which courses to apply for in their final year of secondary school. However, before this selection takes place, students will have decided the subjects to study that will enable them to meet any prerequisite requirements. The choice process begins, and is constrained by, the choices the student makes when selecting subjects to study in late secondary school (Rosenfeld & Peng, 1980).
2. Usually, students will not have made the decision to attend an institution before. This means that they have no *experience* on which to base a decision. The lack of experience with the service should increase the level of perceived complexity of the decision (Zeithaml, 1981).
3. The level of importance of the decision to a student's 'life' is potentially extreme. For example, if students choose incorrectly, they may drop out entirely rather than risk 'failure' within their chosen degree programs (Abbott - Chapman, Hughes & Wyld, 1992; Villella & Hu, 1990). In addition, the choice they make establishes a lifetime career path that has implications for socioeconomic status and life goal achievement (Elder, 1968).

1.2.1 Assumptions underpinning complex decision-making

A customer who undertakes an extensive decision making process may also be said to be highly *involved* in the decision (Kapferer & Laurent, 1993; Mittal & Lee, 1989; Zaichkowsky, 1986) and therefore, highly motivated to search for information. Schmidt and Spreng (1996) hypothesise that involvement is directly related to information search activity and contributes to the motivation to search for information.

In addition, a complex decision-making process assumes that there will be an active search for information which is appropriate to the decision being made. Active (external)

information search is undertaken when a purchase decision needs to be made and a customer perceives that they do not have enough information with which to make an informed choice (Schmidt & Spreng, 1996).

Schmidt and Spreng also propose that the level and type of information search activity is influenced by four key variables: 1) Ability to search, 2) motivation to search, 3) costs related to the search process and 4) benefits (or outcomes) of the search process. Thus, if students are to make rational decisions about universities, they will be able to search, they will also be motivated to search and they will search for information in ways that maximise their benefits and minimise their costs.

These four considerations are elaborated upon later in this chapter. However, the information that potential customers search for and use in the decision making process is dependent on the type of information that is available (Anderson, 1994). Sources of information may be categorised into marketer and non-marketer controlled information (Sheth et al., 1999). The information that is available to prospective students is explored in Chapter Five. When customers search for information they are searching for information about particular product attributes (Maute & Forrester, 1991). Some of these attributes the consumer will be familiar with (Lefkoff-Hagius & Mason, 1993) and they may be seeking confirmation of their existing knowledge (Brucks, 1985). Other attributes may be unknown and become a part of the decision through the information search process (Urbany, Dickson & Wilkie, 1989). The attributes of an educational institution, both known and unknown, will be considered in the following section.

1.3 Educational choice – an overview

In the educational literature, several authors have approached the problem of student choice from very different perspectives (Chapman, 1981; Chapman, 1984 & 1993; Clinton, 1989; Kellaris & Kellaris, 1988; LeClaire, 1987; Litten, 1982; Motes, 1988; Traynor, 1981; Vilella & Hu, 1990; Wiese, 1994).

The model developed by Chapman (1981) contains many of the elements proposed by authors in the consumer behaviour domain. Chapman proposes that essential elements in the college choice model are:

- The characteristics of the student, including level and type of aspiration, socio-economic status and student performance
- The influence of institutional characteristics on the decision to attend (criteria for choice), and
- The communication efforts of the institutions in attracting students.

The characteristics of the student can be considered commensurate with the psychological variables outlined in Figure 1-1. However, the process of choosing an institution comprises

student characteristics that are not necessarily considered within the consumer behaviour domain. For example, students have aspirations and attitudes to life (not just products) which affect the decision to attend a particular institution (Hossler & Gallagher, 1987; Murphy, 1981; Sanders, 1990; Vilella & Hu, 1990). It is these student (consumer) characteristics which makes the decision making process in choosing an institution unique and quite different to that of choosing a product (Brooker & Noble, 1985).

Institutional services such as universities, hospitals and government services are in a unique position, as the decision to attend may not be made by the 'consumer.' For example, the decision to attend a particular university is not only dependent on the student's choice but also may be informally made by the student's antecedent subject selection. Furthermore, the university will 'select' students who are likely to succeed within the study environment, and who meet selection criteria within a competitive context.

This potential selection of customers presents unique marketing problems as students face a paradox when choosing an institution. The student will choose to apply to an institution that they know in advance the probability of acceptance into. The student will nominate those institutions where the odds are most acceptable and which will maximise the potential returns (socially or economically). The ability to attend an institution is affected by the combination of factors such as capability of the student and their economic capacity to attend. Students will not willingly choose to apply to an institution where they face being rejected by the admissions process. Therefore - "I will choose the university that chooses me." It is unlikely that this circumstance exists in other marketing situations. Therefore, the literature and models developed for buyer behaviour of consumer goods are not sufficient for the context of an institutional service (Raju, Lonial & Gupta, 1995a; Raju, Lonial & Mangold, 1995b; Wrenn, 1989).

1.4 How students choose educational institutions: a new research problem

The Australian higher education 'industry' requires information about the choices that its prospective consumers make. The decision making process of students making choices needs to be explored if the key question is to be answered - do students make rational 'buying' choices about their institutions? Rational or not, it is undeniable that students are currently making choices. Further, if institutions wish to become marketing oriented, they should understand how those choices are made.

In order to examine how students choose an educational institution, it is necessary to identify a process that is commensurate with university choice. To understand *how* someone chooses a course, it is also necessary to comprehend *what* is chosen, and *why* it is chosen. In addition, the student's *ability* to enter upon a decision making process will affect the final decision.

For example, a student's capacity to search for information, assimilate material and choose between similar alternatives will also affect the final decision.

To examine this process in the context of higher education we need to look at several issues. The discussion begins with *why* a student chooses an institution as the research into higher education choice has focussed in that area.

1.4.1 Why students choose a particular institution

Figure 1-1 suggests that information search leads to the ability of the consumer to establish criteria by which they may evaluate alternatives. The criteria can be considered as *why* people choose between products. Further, the criteria for selecting an institution are the variables an individual considers as important to the choice decision. These variables will be of varying importance to the consumer. Criteria⁴ that have been demonstrated to be relevant to educational choice are:

1. Curriculum and course availability
2. Location/ distance from home
3. Relevance of course to chosen career path
4. Reputation of the institution
5. Job placement and careers counselling
6. Costs associated with attendance
7. Admission criteria
8. Prestige and status of the institution
9. Educational facilities
10. Campus size and type
11. Extra curricular opportunities such as clubs, sports, etc
12. Campus facilities
13. Student welfare programs
14. Teaching and research staff, qualifications and experience.

It was postulated at the outset of this study, that the criteria will be ranked differently depending on the level of motivation to search for information, the decision making capability of the consumer and the level and type of information search activity undertaken by the prospective consumer.

1.4.2 How students choose from among many alternatives

However, *before* students can choose between competing alternatives, they must be aware of what is available. In addition, there is the implied decision making process through which consumers may arrive at possible choice outcomes. This assertion is based on the assumption

⁴ The criteria students use for developing a preference between institutions is discussed further in Chapter Four.

that prospective consumers make *active* choices about the products that they eventually choose to purchase. The questions then arise:

- How do students choose between alternatives?
- How do students search for information about alternatives?
- How are students influenced in their information search behaviour?
- How are students able to make an appropriate decision about a product as complex as an educational institution?
- How do students judge the information that they obtain in the information search process?

1.4.3 What is it that students choose when they choose an institution to attend?

Another underlying assumption in the educational literature is that students choose particular institutions and courses (what they choose) for particular reasons (why they choose). However, *marketers* would question the value of knowledge that focuses on *what* people choose unless there was a willingness to adapt the product to the needs of the consumer. Marketers of educational institutions are unlikely to change the *what* for a particular group of students (Gallagher, 1992). Indeed, they are more likely to attempt to attract the type of student the institution has the greatest capability of satisfying. Another question arises:

- What decisions can be made and are there categories of decision? For example, do students choose between career, course and/or institution?

In some respects, this last question has already been answered. However, the Australian context is very different to that in the USA and the UK where the extant literature is grounded. In the USA and the UK, students tend to choose between institutions and then make decisions about specific courses within the institutions. In Australia, the decision is made according to course and the institution is a secondary consideration (James, Baldwin & McInnis, 1999). Thus, in the USA the university is considered as both the *brand* and the *product*. Whereas in Australia, the university would be considered as a brand⁵ and the courses are the products within the brand name. Choices are made at the terminal course level, for example, between degree programs which lead to careers in accounting.

⁵ Brand name in this context is the overarching institutional name. There may be schools or faculties with additional names. However, for the purpose of discussion, the brand is the university name. Eg Monash University (Brand), David Syme School of Business (Product Level 1), Bachelor of Business (Product Level 2), Bachelor of Business – Accounting (Product Level 3).

1.5 Hypothetical research framework used to frame the discussion of how students choose an institution

The following framework (Figure 1-2 page 10) was developed to examine the research problems. Exploring concepts 1, 2 and 3 will illuminate *how* people choose an institution. Concepts 4 and 5 are outcomes of the information search process (*what* and *why*) and were included in the research in order to establish if *how* people choose makes a difference to what they choose or why they choose it. Understanding demographics is necessary as a purchase decision is made by a person and therefore *how*, *why* and *what* must relate to *who*.

The concepts are explored in reverse order in the following chapters. The hypothetical research framework indicates a series of relationships with directional flows of influence. For example, in the university choice context, decision-making capability is antecedent to motivation to search. It is therefore, foremost in terms of influence on the decision. However, the focus in the educational literature has been on choice and the influences on choice. Therefore, in order to provide an adequate background to the hypotheses, it is necessary to start with the existing educational literature and incorporate the consumer behaviour literature into the educational context.

The hypothetical research framework is representative of the shaded boxes in Figure 1-1 (page 4). The shaded boxes indicating *Search for information* (Box 1, Fig 1-1), *Criteria for evaluation and evaluation of alternatives* (Box 2, Fig 1-1) and *Decision* (Box 3, Fig 1-1) are directly comparable. Search for information is denominated *external information search* (Box 3, Fig 1-2) in the hypothetical framework as it excludes internal information search activity. Criteria for evaluation is denominated *perceived criteria for preference* (Box 4, Fig 1-2) in recognition that students use perceptions to develop their preferences for an intangible 'product' such as education. Further, preference may be developed but the student may not be able to 'evaluate' the decision due to its credence qualities (Zeithaml, 1981); hence, the need for a term which is inclusive of this situation. Decision and choice are incorporated in *choice* (Box 5, Fig 1-2) because, in order for a choice to be made, a decision is assumed to have taken place.

The components of the research framework that extend the existing models in the literature (Figure 1-1) are *decision-making capability* (Box 1, Fig 1-2) and *motivation to search* (Box 2, Fig 1-2). It is argued that these are antecedents to search behaviour that need to be considered in the educational context.

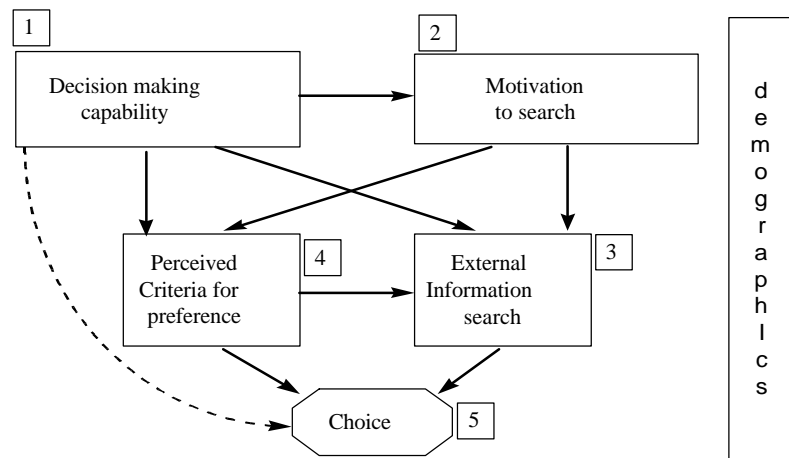


Figure 1-2: Hypothetical research framework

1.6 Methodology adopted for the thesis

The methodology adopted for this research is described fully in Chapter Two. This methodology is adapted from Sekaran (2000). Sekaran proposes a hypothetico-deductive method of research in business using the steps outlined in the following diagram.

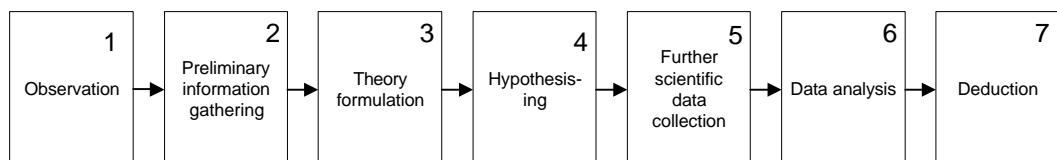


Figure 1-3: Scientific research method - Source: Sekaran (2000)

This model has been followed because it posits a *scientific research methodology*. The scientific research paradigm has been adopted in this thesis for several reasons.

- The ‘problem’ has been sufficiently explored by others in various fields that some confirmation of theory is possible.
- The model has elements that are capable of testing. Although some construct development has been necessary, in the main, existing constructs, which have been demonstrated to be valid and reliable, can be used.

- Consumer behaviour models of information search are explored using social and business psychology techniques. Hence, any comparison with these models requires the adoption of a similar research paradigm.

1.7 Outline of the thesis

The thesis is organised as follows:

Chapter 1: contains the Introduction and background to the research problem. The purpose of this chapter is to outline the argument and present the problem within the context under examination.

Chapter 2: Describes the detailed methodology used in answering the questions posed in Chapter One. This chapter includes the steps undertaken in data collection and the data analysis techniques employed in the process of producing the findings presented in subsequent chapters.

Chapter 3: Explains the structure of the university choice environment and describes University Choice. For example, the applications process and any related activities which facilitate or hinder ‘true’ choice. This chapter is essentially an overview of the opportunities and the mechanisms of choice. It covers *what* people choose and *how* they make that choice. In addition, the selection process is also discussed. The perspective in this chapter is from the university standpoint. The student perspective on reasons for choice is discussed in Chapter Four. This chapter is necessary in order to understand the context in which the decision is made.

Chapter 4: Introduces the reasons *why* students choose institutions and the criteria for choice between institutions. The literature surrounding the criteria which students develop in order to choose between courses is vast. This chapter summarises the relevant literature and discusses the application of criteria (developed mainly for the USA context) in Australia. The chapter develops an understanding of the preference criteria of students and explores why Australian students choose. The perspective in this chapter is the students’.

There is some overlap of topics in Chapters Three and Four. However, in essence, Chapter Three is *what* students choose from the seller perspective, while Chapter Four is *why* students prefer one institution to another (from the students’ perspective).

Chapter 5: Explains students’ information search activity in relation to the decision to attend a particular institution and the sources of information that influence decision-making. This chapter develops an understanding of students’ information search activities and the level and type of search undertaken. In addition, the reliance on sources of information used in the decision making process are explored. This chapter begins the discussion of *how* students choose institutions.

Chapter 6: Continues the discussion of *how* students choose universities and introduces the concept of students' motivation to search including its application to information search activity. This chapter includes consideration of the perceived risk of purchase to students, their involvement in the purchase decision and their general interest in the issue of university choice.

Chapter 7: Completes the explanation of *how* students choose universities and presents the concept of students' decision making capability and their confidence in their ability to make a decision. This chapter outlines the ability of students to undertake rational decision-making. Students' expertise in general decision making as well as their self-perceived ability to make life decisions is examined.

There is overlap between the topics presented in Chapters Five to Seven, as these are related topics. However, the potential redundancy is considered necessary to the discussion and the presentation of each chapter as a discrete report on the topic in question.

Chapter 8: Provides a synopsis and review of hypotheses and findings. This chapter reminds the reader of the preceding discussion and summarises the arguments presented and the results found.

Chapter 9: Presents the implications of the findings for institutions and higher education policy makers. This chapter presents some alternative theoretical principles that might be applied in a higher education 'industry' in which students may operate as consumers. It presents some challenges to higher education policy makers on the implications of students as consumers in the present system.

Appendix A: Defines the institutional selection process in the UK and USA and is simply a comparative reference provided for the international reader.

Appendix B: Provides supporting documentation for Chapter Four - Criteria for preference, including a reference list of authors who have published articles relating to university preference criteria.

Appendix C: Contains a copy of the questions used in the data collection process.

Appendix D: Provides auxiliary data analysis in support of Chapters Four to Seven.

Appendix E: Reference material for reading and interpreting structural equation modelling output.

Any definitions will be explained in footnotes accompanying the text.

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2.1 Introduction to the methodology adopted for the study

This chapter provides a detailed overview of the methodology adopted for the purpose of examining the research problem. The purpose of this chapter is to provide the reader with an explanation of the data collection procedures and methods of data analysis used to derive the results presented in Chapters Four to Seven.

It is hypothesised that students make decisions regarding which university they attend using a complex decision-making style. Some of this behaviour may be considered rational in terms of buyer behaviour. Indeed, much of a prospective student’s behaviour follows economic models of behaviour. However, this thesis argues that economic models do not explain a significant proportion of students’ decision-making behaviour. Hence, this study examines how students choose institutions from a marketing perspective. The following hypothetical research framework has been adopted in order to provide boundaries for a complex discussion. The following diagram is the framework under examination in this study.

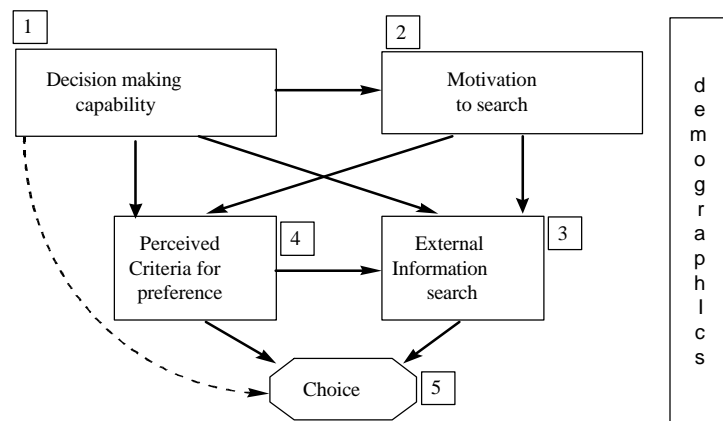


Figure 2-1: Hypothetical research framework

The hypothetical research framework is being examined using a methodological framework proposed by Sekaran (2000). Sekaran’s suggested hypothetico-deductive methodology framework is detailed in Figure 2-2. This framework is designed to ensure effective measures of constructs or concepts as suggested by Churchill (1979). Constructs can be both uni-dimensional and multi-dimensional. The topics used in this study and included within the hypothetical research framework are proposed as multi dimensional. However, as later

chapters will show, some are not consistent with the concept of a *construct* as put forward by Churchill.

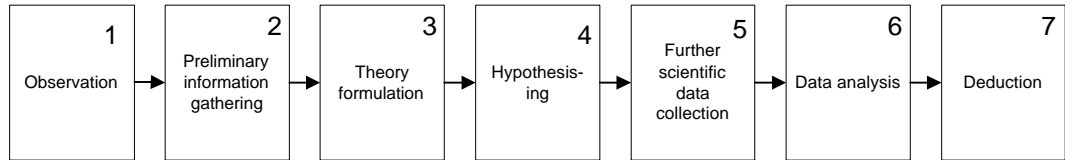


Figure 2-2: Suggested procedure for research in business (Sekaran, 2000).

2.2 Phase One: Observation of the research problem

This research project grew out of an original market research study⁶ that was not formal or scientific in nature. As is often the case with such superficial research, more questions are posed than are answered. The question arose - if students are *consumers*, why don't they behave as other consumers appear to? The results of the initial study demonstrated that while prospective students were being treated as consumers of the educational service to a great extent, they were not using a recognisable *consumer* decision-making strategy. The confounding results led to a number of questions arising about the assumptions underpinning Australian government higher education policy, and to the recognition that a formalised research project was necessary. If the Australian government's moves toward an open market system for higher education are to be sustained, the higher education industry in Australia will require knowledge of students as consumers of educational services.

2.3 Phase Two and Three: Preliminary data gathering and theory formulation

Phase Two of the study was a secondary data and literature review. This is proposed as an economical and quick source of background information (Malhotra, 1993). The purpose of this phase was to identify the potential components of a student choice model and appropriate methodologies for examining a model in context.

Phase Two consisted of a number of different stages:

1. Review of literature for existing studies in the areas under examination
2. Experience survey of careers counsellors and university development staff
3. Focus groups with students at secondary colleges, TAFE's and universities.

⁶ Reported in Brennan and Marriott (1996). The previous study focussed on the external influences on the student in making the decision. The present study has focussed on the personal (internal) influences on the decision to attend a particular institution. However, the generation of items in the '*criteria for selection*' and the '*sources of information*' components of the model have been adapted from the original study.

This phase generated the list of topics contained in the final survey instrument and assisted in the identification of the items in the constructs to be measured in each component of the model.

2.3.1 Review of literature

The literature was reviewed in two distinct phases. Firstly, an overview of the higher educational choice literature, which helped frame the overarching concepts to be examined. Secondly, a review of marketing and consumer behaviour literature within the relevant domains. The marketing and consumer behaviour literature is vast and it was necessary to examine in detail only those areas that were directly relevant to the problem of how people choose an educational institution.

The literature review also served several purposes. The review assisted in the definition of a problem to be examined. In addition, the information relating to previous studies highlighted areas to be considered in the focus groups and appropriate data collection techniques for the quantitative phase of the research. Finally, the extensive literature surrounding the criteria for choice indicated the unique choice situation.

2.3.2 Experience survey

A series of six in-depth interviews with experts in marketing educational services took place. These interviews took place over an extended period of time. Those with expertise were not selected for their representation of a viewpoint or of a population. Thus, probability sampling of experts was not undertaken. Due to the constraints of space and the research method adopted, the results of the experience survey will not be reported. However, the purpose of this step in the research was to help formulate the problem and clarify concepts. The development of conclusive evidence was left to later stages in the study. This is consistent with other studies (Clinton, 1989; LeClaire, 1987; Westbrook, 1966) and suggestions from experts on methodologies in marketing research (Brinberg & Lutz, 1986; Salzberger, 1997; Walker, Olson, Celsi & Chow, 1992).

The discussions with experts in educational recruitment served two purposes: firstly, the experts explained their understanding of the process and issues surrounding student choice. Secondly, they provided an entrée into the universities that participated in the study and thereby facilitated quantitative data collection.

2.3.3 Focus Groups

The next part of the exploratory phase of the research was to conduct five focus groups with students in schools, universities and TAFEs.⁷ A focus group interview is a relatively unstructured interview designed to elicit true feelings and underlying attitudes (Hague & Jackson, 1996). The primary advantage is that they are easy to execute and gain large amounts of information in a relatively short time. The disadvantage is that they are not representative of the population and cannot replace quantitative (conclusive) studies (Malhotra, 1996). The focus groups were composed as homogenous groups. This is consistent with previous research which indicates that homogeneous groups work best when *exploring* issues (McQuarrie, 1996). The students in schools were in the later stages of their school years and were considering university entry on completion.

2.3.3.1 Focus groups - Phase One

Two focus groups were conducted prior to the extended literature search. The information provided by these groups served to direct the literature review and identified the components of the hypothetical research framework. In particular, *decision-making capability* was identified as a matter for further examination at this stage.

The extended literature review identified the existence of scales which could be adapted for the context and which had been tested for reliability and validity. This is consistent with the recommendations of Churchill (1979). Where single item measurement was sufficient, such as age, income and gender, these scales have been adapted from Australian Bureau of Statistics questions and categories.

2.3.3.2 Focus groups – Phase Two

Three later focus groups served to assist with the development of the questionnaire and were constructed as workshops in order to facilitate that process. The language and style of questions required some adaptation in order to be acceptable and understandable to a school leaver audience. In addition, these focus groups clarified the issues to be considered in the final phase. The original set of potential questions was too large for effective analysis. The focus groups served to eliminate many relatively peripheral issues from the study. Further, the input from students helped to frame the hypothetical research framework that provided the structure for this thesis. The focus groups took place at various stages throughout the research process and as such, each group contributed in a different way to the understanding that has developed. Again, due to the exploratory nature of these groups and space constraints, results of this research are not reported here.

⁷ Colleges of Technical and Further Education

The three types of preliminary data collection; literature, experience survey and focus groups served to feed-forward into the formulation of the hypothetical research framework.

2.4 Phase Four: Hypothesising

The hypothetical research framework (Figure 2-1) represents the hypotheses which were developed as a result of the preliminary research phases. Of course, as with all ‘scientific’ research projects, the development of hypotheses often involves the limitation of the research to only those issues for which the question has already been asked and partially answered (Anderson, 1986). This limitation arises as a consequence of the need to base the research in existing theoretical foundations. However, while accepting the limitations of hypothesis testing and falsification as a method of inquiry (Deshpande, 1983), the significant body of knowledge surrounding the issues would appear to invite some confirmation within the Australian education sector. Thus, the hypotheses outlined in the following chapters were developed. However, it is recognised that these hypotheses represent only a portion of the questions that might be asked in the process of examining the issue of students as rational consumers in an open market system.

2.5 Phase Five: Data gathering

Phase Five is the final data collection phase of the research. The process of gathering the data is outlined in Figure 2-3

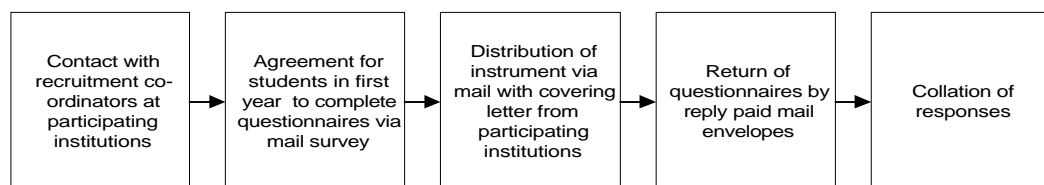


Figure 2-3: Data collection methodology

2.5.1 Pilot testing

Prior to collecting information in the field, a pilot test of the survey instrument was conducted using first year university students at one of the institutions included in the final survey. The data were then analysed and each of the factors in the final instrument examined using Cronbach’s alpha (1951) as suggested by Churchill (1979) and Nunnally (1967). This test measures the internal consistency of a set of items (Cote & Buckley, 1988).

Alpha in most cases was above 0.50 which is acceptable for early stages of basic research (Nunnally, 1967).

The pre-testing resulted in changes to the instrument layout and ordering of questions in addition to some minor wording changes. While it is recognised that changes to scales can result in changes to the theory under examination (Zaltman, 1982), every effort was made to minimise the adaptations to clarifications of meaning. With scales originally developed in the USA, there is a particular need to adapt the language to a style that is acceptable to the Australian context. Thus, while some changes have taken place, *convergent validity* has been established for the constructs by their use in previous studies and in other contexts (Bearden, Netemeyer & Mobley, 1993).

2.5.2 Population under examination

The population under examination is school leavers entering Victorian University programs in the following areas:

- Engineering
- Business
- Arts.

This categorisation of student type was selected to ensure that students included in the final survey *could* have chosen to attend any of the eight institutions - all things being equal. Hence, specialist courses of study, which were not offered by all institutions, were excluded from the sample population.

Further, the categories may include students entering university for recreation, leisure and non-vocational learning activities. It is expected that students entering institutions for non-vocational purposes will choose institutions for a variety of reasons that are not directly related to career development. However, this group of people should illustrate a variety of external information search behaviours (if they exist) within a context in which they might be expected to be relatively equal in terms of their -

- Demographic characteristics,
- Access to post secondary educational options and alternatives, and
- Access to information about the issues relating to institutional choice.

2.5.3 Sample

2.5.3.1 The Victorian university perspective

The 'sellers' of Victorian higher education can be said to consist of universities that offer higher education courses and degree programs. Universities are selected in this study because they present a variety of choices that are not necessarily vocational. Colleges of Technical and Further Education are excluded as the majority of course offerings are vocational in nature (Australian National Training Authority, 1997).⁸

2.5.3.2 The institutional options in Victoria

The decision to attend a particular institution is often based on location (Chapman, 1981). Therefore, this study has been limited to a single state of Australia and those who have campuses in the greater metropolitan area. In Victoria, there are nine universities, each with a number of campuses and differing modes of delivery. These are represented in Table 2-1 (following page).

⁸ The need to differentiate between vocational and non vocational decisions is related to the concept of 'life goals.' Life goals have been postulated by (Park & Mittal, 1985) as affecting the level of search behaviour and motivation to search for information. Students with vocational goals may differ in their choice processes to those with non-vocational goals.

Table 2-1: University choice options in Victoria. Source: Victorian Tertiary Admissions Centre (1999)

<i>Institution</i>	<i>Campus Locations</i>	<i>Type of institution</i>
Australian Catholic University	Oakleigh Ascot Vale Ballarat	Specialist Regional
Deakin University	Burwood Geelong Geelong Waterfront Clayton Toorak Warnambool	Metropolitan Regional
La Trobe University	Bundoora Albury/Wodonga Bendigo Mildura Mt Buller Shepparton	Metropolitan Regional
Monash University	Berwick Clayton Caulfield Gippsland Parkville Frankston Kuala Lumpur	Research Metropolitan Regional (varied)
RMIT University	City of Melbourne Bundoora Brunswick	Metropolitan Specialist
Swinburne University of Technology	Hawthorn Croydon Healesville Lilydale Prahran Wantirna	Metropolitan Regional
The University of Ballarat	Mt Helen Ballarat	Regional
The University of Melbourne	Parkville Burnley Creswick Werribee Terang Horsham Warragul St Kilda Rd	Research Specialist campuses
Victoria University of Technology	St Albans Footscray Melton Sunbury Werribee City of Melbourne	Regional / Metropolitan ⁹

In Victoria, the undergraduate school leaver ‘market’ is highly regulated and the student’s ‘choice’ is mainly contingent on the entry requirements of the institution. However, the

⁹ The Victorian University of Technology is regional in nature although it serves a market within a greater metropolitan area. Thus, it does not fit neatly into either the metropolitan category or the regional. Regional institutions in Australia are often seen as operating in rural environments. However, for comparison purposes with the international literature, I have adopted the position that regional institutions are identified by their focus on a local geographic area (e.g. Western suburbs). In addition, they are meeting specific needs within the local community.

courses and styles provided by Victorian institutions would seem to cover most educational options (see Chapter Three). Thus, while this study is limited in scope to a single 'location', the opportunities available appear to be representative of the population at large. Of course, caution needs to be applied when using a limited geographic location. The results may not be generalisable beyond the sample population.

Table 2-1 illustrates the statistics for students studying in Australia. It can be seen that the lowest level of attendance within the home state is the Northern Territory. This is because the Northern Territory has limited opportunities to study in terms of availability and suitability of courses. New South Wales and Victoria, the two largest states, provide the student with most opportunities to study within state. In these cases, over 90% of students choose to study 'at home.' The Australian Capital Territory (another small region) is geographically surrounded by New South Wales, consequently, there is substantial flow from the ACT to NSW. However, the flow is not applied in the other direction, students from NSW do not often choose to study within the ACT.

Table 2-2: Commencing students by state of permanent home residence and state of institution of study 1999 Source: Department of Education Training and Youth Affairs, (2000)

<i>State of residence</i>	<i>State of study</i>									
	<i>NSW</i>	<i>VIC</i>	<i>QLD</i>	<i>WA</i>	<i>SA</i>	<i>TAS</i>	<i>NT</i>	<i>ACT</i>	<i>MULTI</i>	
New South Wales	90%	3%	3%	0%	0%	0%	0%	2%	2%	100%
Victoria	4%	92%	1%	0%	1%	0%	0%	0%	2%	100%
Queensland	6%	2%	88%	0%	0%	0%	0%	0%	2%	100%
Western Australia	2%	2%	1%	94%	0%	0%	0%	0%	0%	100%
South Australia	4%	3%	1%	0%	91%	0%	0%	1%	0%	100%
Tasmania	6%	8%	2%	1%	1%	80%	0%	1%	1%	100%
Northern Territory	7%	5%	5%	2%	6%	1%	72%	1%	0%	100%
Australian Capital Territory	19%	6%	3%	0%	1%	0%	0%	68%	3%	100%
Subtotal	33%	25%	19%	9%	7%	2%	1%	3%	2%	100%

2.5.3.3 Sampling process adopted for the study

Each of the universities in Victoria institutions offering courses at the undergraduate level in Victoria was invited to participate. All institutions agreed to participate. However, only six of the possible eight institutions could arrange timely access¹⁰ to random selection and/or an appropriately qualified database of students. 400 students in each of the participating institutions were randomly selected and surveys were mailed during the first semester of study at the institution. Overall, 2,400 questionnaires were mailed.

2.5.4 Ethics approval

The University of Melbourne's Human Research Ethics committee granted ethics approval. Guidelines and procedures governing human research conducted under the auspices of The University of Melbourne can be found at:

<http://www.unimelb.edu.au/research/ethics/hrec/proc.html>.

2.5.5 Administration and return of mail surveys

A covering letter enclosed with the survey was sent to students indicating the importance of the study to the participating institutions and students were requested to return the survey within ten days. The first returned questionnaire was received within 48 hours, with the latest returns coming three months after they were sent. Students were reassured about the anonymity of their responses. The latter is important in a situation where the students' association with the institutions could be construed as coercion.

Students at participating institutions were provided with a reply paid envelope and the survey contained a reply paid address in case of loss of the envelope.

2.5.6 Survey distribution and response rate

The questionnaires were distributed by the participating institutions. Table 2-3 presents the distribution and response rate in order of response to the questionnaire. In the interests of protecting the anonymity of the sponsoring universities the institutions have been assigned pseudonyms.

¹⁰ The study required that students be surveyed within the first few weeks of the first semester. This method would ensure that students had made a choice and had enrolled at their preferred institution. In addition, this ensured that students had not used an extended experience with the institution to adjust their perceptions of what was important to them (criteria sets).

Table 2-3: Questionnaire distribution and useable response rate

<i>Institution</i>	<i>Questionnaires distributed</i>	<i>Usable Responses</i>	<i>% response</i>
Sandstone University	400	108	27.0
Post War University	400	113	28.2
Flexible University	400	101	25.2
University of Technology	400	104	26.0
National Specialist University	400	84	21.0
Metro Regional University	400	58	14.5
Other institution ¹¹		8	
Total	2400	576	24%

As this research is not concerned with identifying the specific characteristics of Victorian higher educational institutions, these pseudonyms are applied throughout the rest of this thesis.

2.5.7 Sample size justification

To determine the necessary sample size for hypothesis testing, four factors were taken into account. These four factors were: criterion for statistical significance, level of statistical power, statistical analysis strategy, and the size of an effect judged to be meaningful (Olejnik, 1984).

2.5.7.1 Statistical criteria for significance

The convention in marketing research is to use the .05 level of significance (Zikmund, 1986). This is consistent with the convention in the social sciences where .05 is also the arbitrary rule of thumb (Olejnik, 1984). Olejnik questions the use of the .05 level of significance because of its impact on sample size and suggests that for large effects a lower level of significance is possible. The higher the degree of significance required, ie: .05 or .01, is conventionally held to mean the lower the likelihood of a Type I error. A Type I error is when the null hypothesis is incorrectly rejected (Kenkel, 1989). This study requires at least .05 level of significance. However, an increase in sample size can produce spurious associations which are *statistically* significant at the .05 level, but are of no *practical* significance. Hence, caution in interpreting some correlations is necessary (Hair, Anderson, Tatham & Black, 1995).

¹¹ Students were given the option of nominating 'other institution' in their institute of enrolment. These students were only included in analysis that does not require the nomination of a university choice.

2.5.7.2 Level of statistical power

A second factor that affects the number of respondents needed in hypothesis testing research is statistical power. Statistical power measures the likelihood of a Type II error occurring. Type II errors are when the null hypothesis is accepted when in fact it should be rejected (Kenkel, 1989). That is, a relationship may actually exist but it is not observed. Olejnik (1984) suggests that statistical power should be no less than .70 although Kenkel indicates that it is possible to have a range as low as .50. A sample size of 200 would be sufficient to detect moderate effects and have a statistical power of .998 at the .05 level of significance. However, if the effect size is small, the level of statistical power declines to .516 (Hair et al., 1995 p11). Hence, this study will require factors to have a level of at least .50.

2.5.7.3 Effect size

The third consideration when assessing the sample size is effect size. If a prior study indicates that there is a large difference between population means, then the sample size can be decreased, as only a few subjects will be needed to detect a difference. Conversely, if the difference between populations is small then a large number of subjects will be needed to establish that the difference is real (Olejnik, 1984). This project is not attempting to determine differences between populations; hence, the effect size is not the main consideration in the sample size equation. The sample size of 2,400 with response rate of 576 will enable the research to identify differences between students within the population. It is not intended to generalise the results to other populations.

2.5.7.4 Data analysis procedure

A fourth factor affecting the size of the sample is the data analysis procedure. Olejnik (1984) suggests that for more complex factorial designs such as that used in this study, the total sample size needs to be in excess of 200 respondents for sufficient reliability to be attained (Olejnik, 1984). However, he also says that quantitative studies can have smaller sample sizes than qualitative studies if the results are definitive in nature.

Sekaran (2000) suggests that sample sizes for multivariate analysis should be at least ten times more than the number of variables in the study. Bearing in mind the multi-dimensional nature of the constructs, this is not feasible, as it would mean a sample in excess of that which could be manipulated by existing computer hardware and software equipment. Thus, a minimum of 500 respondents allows for both data manipulation and for detection of effects. However, analysing each group of variables in a step-wise manner makes some compensation for the variable-sample size requirement (Holmes-Smith &

Rowe, 1994). The step-wise technique ensures that the maximum number of responses is analysed in each component of the analysis.

2.5.7.5 Sample size

The sample size selected for this study was 400 per category of institution. This sample size is;

- Large enough to detect any differences should they exist
- Appropriate for higher order multivariate analysis and factorial designs
- It will have sufficient statistical power to reliably detect any medium effects¹²
- Be able to produce results at the statistical significance level of 0.05.
- Large enough to allow sufficient useful responses in case of non-response

2.5.8 Potential for sample error

The size of institutions varies. In the data analysis stages this variability was taken into account through the application of t-tests for variability related to the impact of sample size (Harrison & Tamaschke, 1993).

Each of the populations of the institutions was examined for variability of their demographic statistics to determine the representativeness of the sample population from the mean and therefore from each other.

Response errors were minimised by extensive testing of the instrument prior to final administration. In addition, the self-completion survey was designed to eliminate the potential for interviewer bias in the answering of the questionnaires.

¹² Olejnik (1984) suggests that a sample size of at least 121 would be required to detect medium effects but increases this to 700 if the detection of small differences is required.

2.6 Phase Six: Data analysis

Data analysis was conducted in a series of stages as outlined in Figure 2-4.

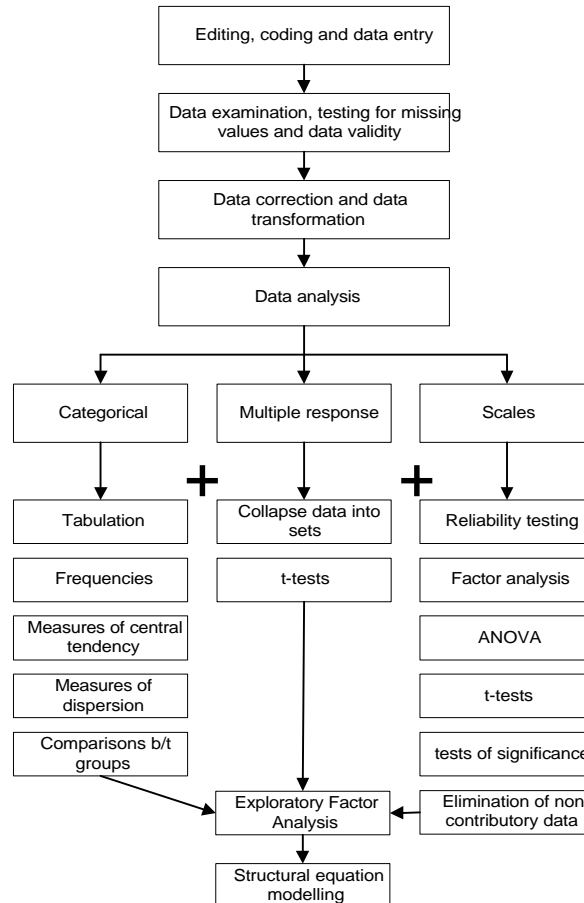


Figure 2-4: Method of analysis

There are a number of multivariate techniques that could be considered suitable for the analysis of the data in this type of study. For example, Williams, Hancher and Hutner's, (1983) study of school choice used loglinear analysis as the data was categorical in nature. Regression analysis was not appropriate in that case due to the nature of the data. Regression analysis requires continuous data to determine the regression lines (Kenkel, 1989; Rosenfeld & Peng, 1980). The data in this study will be both linear and categorical. Hence, it is not suitable for a complete analysis using only forms of regression. The technique, *structural equation modelling* is capable of assigning model weights to categorical data for the purposes of input into the model (Fornell & Larcker, 1981; Hayduck, 1987; Olsson, Andreasson & Wathne, 1997). Careful elimination of extraneous variables prior to developing the model study has been required as suggested by Lomax

(1985). The variables included in any structural equation models have been tested in the following manner:

1. Frequency analysis and measures of central tendency
2. Replacement of missing values by estimated means¹³
3. Reverse coding of negatively worded questions
4. Scale item reliability analysis
5. Review of scale items that did not load with the scale
6. Removal of scale items that were not consistent with the requirements of scale reliability or validity
7. Review of scale reliability with scale items removed¹⁴
8. Exploratory factor analysis to determine preliminary co-variances and correlations
9. Confirmatory single factor analysis on each of the identified factors
10. In order to minimise the number of items in the final analysis, scale items which stood up under confirmatory single factor analysis were averaged to produce a single composite item for input into the structural equation models

As a consequence of this rigorous exclusion of non-contributory variables, many items originally intended to be included in the model were excluded before reaching the final stages of data analysis. However, these results still provide an interesting insight into student university choice behaviour.

For the purposes of this research, the five-point scales used,¹⁵ have been assumed to produce linear or interval data as recommended by Sudman and Blair (1998). Where the initial development of five point scales was not possible, for example with objective expertise, collapsing the responses into categories generated the five point scales. These manipulations are explained in the relevant chapters and in Appendix D. In addition, where the data were not linear, these were excluded from the modelling process.

2.6.1 Explanations of the methods of analysis

The following explanations are to provide the reader with an overview of the statistical techniques used to analyse the data. This section is designed to ensure the accessibility of the thesis results to a wide audience who may be unfamiliar with the techniques used.

Three major methods of multivariate analysis have been used as methods of analysis in this thesis. Firstly, correlations using either a Pearson product-moment correlation coefficient or a Kendall's Tau depending on whether the data were continuous or categorical. Secondly, exploratory factor analysis was undertaken. Thirdly, structural equation modelling was used where appropriate. In addition, ANOVA was used in determining differences between students who were enrolled at the institutions in the sample. These methods are further explained in the following sections.

2.6.1.1 Explanation of correlation analysis

Correlation analysis determines the strength and direction of association between two or more variables. The output of a correlational analysis is a correlation coefficient expressed as a number from +1 to -1. A value of + or -1 is indicative of a perfectly linear relationship (Anderson, Sweeney & Williams, 1987). The assumptions underpinning correlation analysis are that:

- The variables under investigation are related
- The scale of measurement between the variables is interval or ratio (thus, can be treated as continuous)
- The data are normally distributed
- The relationship between the variables must be linear
- The variability in scores for one variable is approximately the same as that for the other variable (Coakes & Steed, 1996)

There are limitations to correlation analysis; while this form of analysis identifies relationships, it does not imply causation. Further, as sample size increases, statistically significant relationships may be identified which are spurious. Consequently, further analysis may be required to fully understand the relationships between variables.

2.6.1.2 Explanation of the exploratory factor analysis method

Exploratory factor analysis analyses the underlying structure of relationships (correlations). Factor analysis is a data reduction technique and is primarily used to summarise the data by analysing co-variance and/or correlation matrices and identifying potentially latent factors.

¹³ Estimated means is used by AMOS (SPSS) to estimate the mean of the variable using the patterns of response of the individual to questions. Thus, the replaced value is relative to the responses of the respondents. Where there were values missing for more than 5% of the questions, these questionnaires were excluded from analysis.

¹⁴ Scales with alpha of less than .50 were not included in later analyses.

¹⁵ See Appendix C – Questionnaire

Data reduction is achieved by calculating scores for each dimension and substituting the group score for the original variables.

Factor analysis is an interdependence technique in which all variables are considered in relationship to each other. The results produced by factor analysis are the identification of dimensions or factors produced by examining how the variables co-vary or are correlated. Exploratory factor analysis does not require *a priori* constraints on the number of components or the estimation method and as such, is often used for exploring patterns in data.

Assumptions underpinning the use of exploratory factor analysis are:

- Correlations exist between the variables and a matrix can be computed
- Sample size is in excess of 200
- Data should be normal and linear (although solutions can be produced if not)
- Some underlying dimension structure actually exists
- Interdependence relationships may be identified but causation cannot be inferred.

Exploratory factor analysis uses two main techniques to obtain factor solutions. *Common factor analysis* in which the factors are based on a reduced correlation matrix. The other form of factor analysis is *principal component analysis* in which the factors are based on the total variance. Principal component analysis is used primarily where the researcher is concerned about prediction or in minimising the number of variables needed to account for specific behaviours. Common factor analysis has more restrictive assumptions about error and variance and is often considered more theoretically sound. This thesis uses *principal components analysis*, except when undertaking confirmatory factor analysis.

Eigenvalues have been used to determine the number of factors to extract from the data set. The method of rotating the factors used has been SPSS Varimax rotation. However, in certain circumstances, oblique (Oblimin) rotation has been used in order to identify correlated factors.

Each method produces *factor loadings*, which are the correlations between the original variables and the underlying factors. Factor loadings of ± 0.30 are considered to meet the minimum level of acceptance as contributing to a factor. Loadings higher than this are preferable with factors in excess of 0.50 having practical significance.

2.6.1.3 Explanation of the structural equation modelling method

Structural equations modelling (SEM) is used to analyse relationships among variables that are connected in some type of multistage causal system (Sudman & Blair, 1998). This type

of analysis is known as *causal* modelling (Bagozzi, 1980; Bagozzi & Youjae, 1988), which implies that causes of behaviour can be identified and used as predictors.

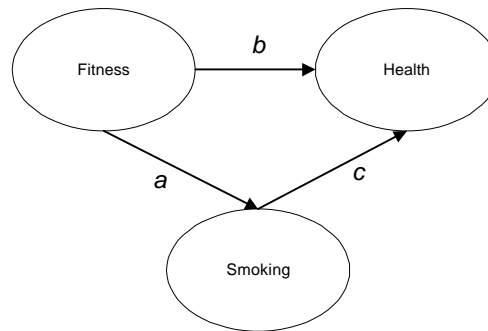


Figure 2-5: Example of a structural model

Figure 2-5 illustrates the concept of SEM. The arrows indicate a direction of influence for each variable on another variable. These influences can be expressed as mathematical equations, which indicate the direction of influence (positive or negative) and the strength of the influence. For example, smoking is likely to have a negative influence on health, people who are really fit are unlikely to be smokers, etc.

Structural modelling becomes an alternative to regression analysis when the model becomes complex (Bagozzi, 1980; Bagozzi & Youjae, 1988) or when some of the variables are non-linear in nature (Hair et al., 1995). In addition, SEM is important if there are likely to be latent variables, which is the case with the current study (Sudman & Blair, 1998). Latent variables are those that are not able to be directly observed and cannot therefore be examined empirically. Factors such as decision-making capability are not directly observable and therefore any relationships will have to be inferred from the data.

Structural equation modelling is based on correlation and co-variance and is sometimes called confirmatory factor analysis. The method used for interpreting AMOS output has been included in Appendix E.

2.6.1.4 Explanation of ANOVA (Analysis of Variance)

ANOVA is a technique that is used to determine whether or not samples come from populations with equal means. ANOVA is used to determine if the differences identified between students enrolled at particular institutions are statistically significant. The assumptions underpinning ANOVA are:

- The population is normal
- There is homogeneity of variance within groups

ANOVA examines the variance within groups and between groups and determines if the variance is due to error or if the differences between the populations are true. It uses t-tests

to assess the difference between two sample means and determines the level of significance required to be certain that a particular result is not due to error.

2.6.2 Reliability and validity

Reliability of the data has been assessed using Cronbach's alpha for the multi-item measures. The scales used have been tested in prior studies and estimates for reliability and validity exist see for example, Bearden et al. (1993). Scales items with alpha below 0.5 have been discarded.

Test-retest reliability is not possible within the scope of this study. The cohort under investigation needed to be in the very first stages of attendance at the particular institution so that their responses relate to a very recent experience of choosing an institution. Re-testing later in the semester may produce different results due to the effect of attendance at the institution changing the perception of what was important.

The final instrument was piloted in order to limit the potential for misunderstanding of the questions. Each of the constructs has been measured using multi-item measures, which decreases the reliance on a single measure for a particular construct under evaluation.

Discriminant validity has been established by the examination of the data through the use of exploratory factor analysis - principal component using varimax rotation - for multi-item, multi-trait measures. Factors that were indicated in the analysis were then tested for reliability using Cronbach's alpha.

The constructs under examination and the relevant questions in the questionnaire are listed in Table 2-4 (over page).

Table 2-4a: Constructs under examination and measurement scales

<i>Construct</i>	<i>Measure</i>	<i>Research paradigm</i>	<i>Questions (Appendix C)</i>	<i>Validation</i>
Choice				
	Options available	Education	C:3.1 – C:3.6.2	See Chapter Two
Criteria for developing a preference (attribute sets)¹⁶				
	Reputation / Image	Marketing and education	C:5.3, C:5.4	Developed for the thesis
	The institutional product		C:5.1.1 1-24	
	Costs associated with attendance		C:5.1.1 1-24	
	Services and amenities offered by the institution		C:5.1.1 1-24	
	Locational issues		C:5.1.1 1-24	
External information search				
	Promotional (commercial) sources of information	Marketing and education	C:4.4	Developed for the thesis
	General information provided by the institution (not persuasive)	Marketing and education	C4.2	
	Interpersonal sources of information	Marketing and education	C4.3	See Chapter Four
	Experiential sources of information	Marketing	C:4.5 – C:4.6	Edgett and Cullen (1992)
	Consideration set size	Marketing	C:3.1.2	
	Extent of search	Marketing	C:3.1.1	
	Belief in efficacy of information (marketer dominated)	Marketing	C:4.1 7-10	
	Belief in efficacy of information (non marketer dominated)	Marketing	C:4.1 11-14	
	Types of information relied upon	Marketing	C:4.7	
Motivation to search				
	Purchase decision involvement	Marketing	C:4.1 19-21	Mittal (1995)
	Product class involvement	Marketing	C:4.1 15-18	Mittal (1995)
	Risk importance	Marketing	C:4.1 27-30	Mittal (1995)
	Time pressure	Marketing	C:3.11 – C:3.14	Developed for the thesis
	Symbolic or sign value	Marketing	C:4.1 31-33	
	Status aspiration	Educational psychology	C:2.1 36-41	Lynn, Hampson & Magee (1983)
	Choice rule application	Consumer psychology	C:5.5	Developed for the thesis See Chapter Five
Decision-making capability				
	Subjective knowledge	Marketing	C:4.1 22-26	Edgett and Cullen (1992)
	Subjective expertise	Consumer psychology	C:4.1 34-37	
	Objective Expertise	Consumer psychology	C:3.6 – C:3.10	
	Locus of Control	Clinical Psychology	C:2.1 13-22	Srinivasan and Tikoo (1992)
	Self esteem	Education	C:2.1 42-45	Ethington and Wolfle (1988)
	Life optimism	Clinical Psychology	C:2.1 1-6	Scheier, Carver and Bridges (1994)
	Susceptibility to word of mouth influence	Marketing	C:1.1 1-12	Bearden, Netemeyer and Teel (1989) Lee and Olshavksy (1994)
	Need for cognition	Marketing	C:1.2 7-12	Petty, Cacioppo and Schumann (1983)
	Work ethic	Educational psychology	C:2.1 30-35	Lynn et al., (1983)
	Uncertainty orientation	Marketing	C:2.1 23-27	Smith and Bristol, (1994)

¹⁶ This list is generated from the literature and is summarised for the purposes of this thesis. For further details see Chapter Four.

Table 2-3b: Constructs under examination and measurement scales

Demographics		
Distance	C:6.1	Questions adapted from Australian Bureau of Statistics
Form of transport	C:6.2	
Gender	C:6.3	
Age	C:6.4	
Educational attainment	C:6.5	
Occupation	C:6.6	
Type of student	C:6.7	
Income	C:6.8	

2.7 Phase Seven: Deduction and generalisation of the model

The structural equation models that are produced are ‘normative’ in the sense that they are constructed from empirical data. However, the models contained in subsequent chapters are not generalisable outside the context in which the sample is taken.

The following chapter presents the context of the decision-making process as it is necessary to understand *what* can be chosen before beginning the discussion of *how* it might be selected.

Section II Background

This section examines the literature surrounding the issue of educational choice. It describes the 'educational product' from the university perspective. It explains *what* can be chosen by prospective students. The students' perspective on *how* and *why* they choose institutions is covered in the following section.

3 Structure of the decision and university choice

3.1 Introduction

The discussion of university choice in this chapter is provided as the framework for the argument and results presented in later chapters. This chapter discusses the issue of *what* is chosen by customers of higher education services. In order to understand this we need to first examine the alternatives that are available. The shaded area of the hypothetical research framework (Figure 3-1) is the focus of the chapter. This chapter is an overview of the options that are available to prospective students and illustrates the constraints on free choice that operate in the university decision. The purpose of this chapter is to provide a summary of the *context* in which the decision is made. However, it is recognised that a choice between institutions is in fact an *outcome* of all the other factors under consideration in this thesis.

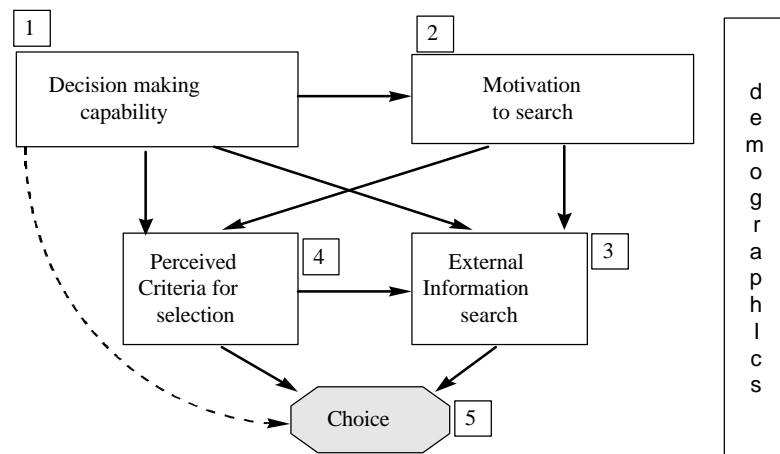


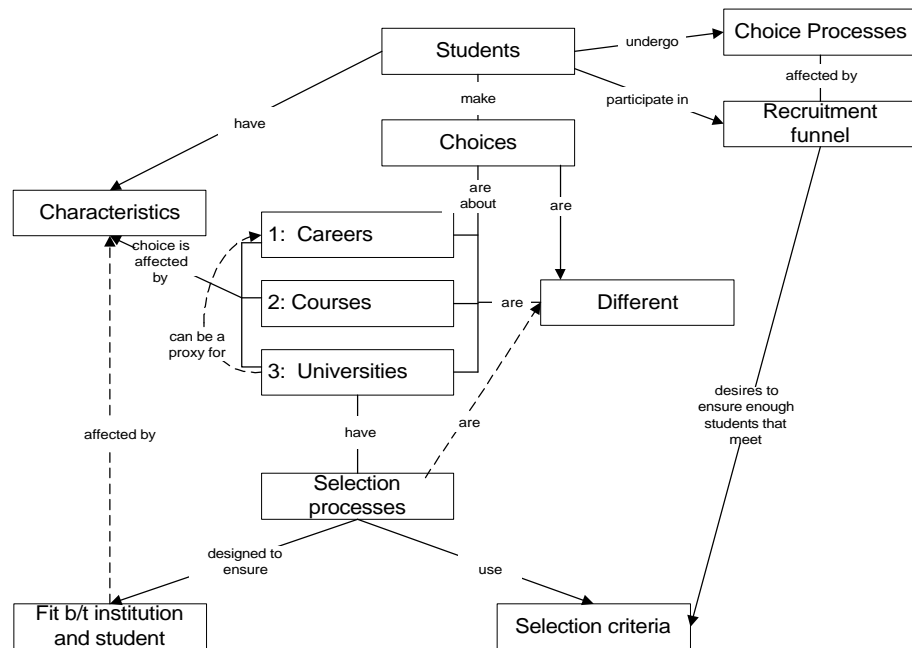
Figure 3-1 Hypothetical research framework – Choice

The consumer behaviour literature assumes free choice and almost limitless substitutability. The university environment in Australia is constrained by government funding allocations limiting supply, with a ‘university’ having almost no substitutes¹⁸. Of course, there are alternative methods of becoming *educated*. However, currently a degree can only be awarded by a university and there is no substitute for the *credential*. Therefore, if we are to understand students’ choices we must understand the context in which those choices are made.

¹⁸ There are Technical and Further Education institutions (TAFE’s) and colleges that are able to grant awards. However, these are not *universities* in the sense that they offer degree programs that lead to university level credentials. The distinction between TAFE, college and university is somewhat blurred by arrangements such as those entered into by VUT, Swinburne and Monash where the university and TAFE’s offer concurrent awards. However, it is argued in this study that university is seen as a different type of educational product to the TAFE or college.

3.2 Concept map of the university choice process

The following concept map represents a summary of the chapter discussion. This map is best read by starting at the box that says **students** and reading down the page and across. Unless the arrow indicates another direction, the map should be interpreted by reading *down* the page. Dotted lines indicate a linking between later concepts and ones that are discussed earlier. Concept maps are a communication tool rather than a scientific description of actual relationships. The map is not intended to represent hypotheses.



Conceptual map 3-1: Structure of the decision and university choice

3.3 University choice – an overview of the literature

Attempts to understand the student as a customer of higher education are not new. In 1981, Chapman proposed a model of university choice that contained elements similar to the generic customer behaviour model (Figure 1-1 Chapter One). Chapman’s model included student characteristics, external influences, general expectations of college life, the students’ choice of college and importantly, the colleges’ choice of the student.

Chapman’s (1981) model describes a series of influences on the choice process but makes no apparent effort to describe the process itself. Litten (1982) extends Chapman’s model and includes a series of steps undertaken by the student in the process of deciding which institution to attend. Litten also includes the impact of issues such as government policy,

university recruitment activities and selection processes on the decision-making process of students choosing institutions. Litten's model is extensive and more closely resembles the consumer choice process outlined in Chapter One.

Despite the similarities between consumer behaviour models and Litten's (1982) conceptual model, Litten does not refer to consumer behaviour literature in the process of exploring the decision-making process of students. However, Chapman (1984) expands Litten's model of choice and focuses on the marketing communication literature models of awareness building (Vaughan, 1979). It is at this point that the consumer behaviour literature and university choice literatures begin to have some points of convergence.

The incorporation of the consumer behaviour literature into university choice models leads to an apparent tendency to present the choice process as one in which the student has the ultimate power. However, students *and* universities choose. Universities use marketing activities to attract larger numbers of students into the recruitment process than they can possibly enroll in their programs. In marketing terms, this would be unacceptable. Marketers would prefer that there was no wastage in their marketing and communication strategies. With targeted marketing, there would be no superfluity of marketing effort. Customers would be attracted and would remain customers over an extended period of time. Marketers operating with finite communication budgets should question the wisdom of promoting a product, which relatively few people have access to, to people who fall outside the potential target market. However, the recruitment funnel aims to do just that.

3.4 The university recruitment funnel

The process by which universities attract students has been described as the recruitment funnel (Biundo & Crites, 1992; Webb & Allen, 1994). The principle behind the funnel is illustrated in Figure 3-2.

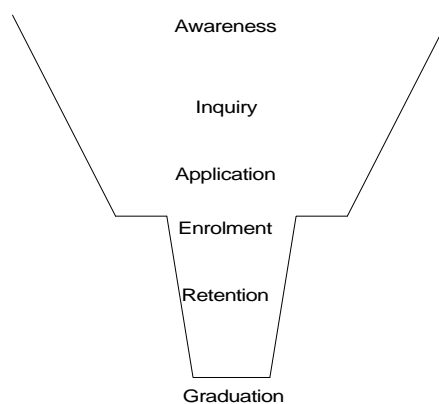


Figure 3-2: The recruitment funnel. Source: Adapted from Biundo and Crites (1992)

Marketing activities are designed to ensure that there is a steady supply of suitably qualified applicants into the university's programs (Marshall & Delman, 1984). For example, at the upper end of the funnel the university's objectives are to ensure that as many prospective families know about the university as possible. This phenomenon is commensurate with the awareness stage of marketing communication models (Shimp, 2000). The development of awareness might result in significant levels of wastage in terms of marketing communication costs (Howard, 1994), as only some of these prospects will be able to consider attending university (Sevier, 1994b).

Prospective students who have the *capacity*¹⁹ to attend university may continue through the funnel to the inquiry stage of the funneling process (Rosenfeld & Peng, 1980; Webb & Allen, 1994). Students who inquire may or may not be *capable* of attending. Capability to attend is determined by the students' characteristics and relates to their overall performance in the academic and social fields that enable them to study at a tertiary level. This stage can be considered similar to the pre-search stage proposed by Chapman (Chapman, 1984). The pre-search stage may take several years and the student may contrast their capabilities with the types of institutions that they may eventually qualify to attend (Bond & Woodall, 1994). Interestingly, while the issue of an institution's selection of students is mentioned, the impact of selection processes on choice does not appear to be examined.

Those students who have the capacity to attend and who have the appropriate characteristics (and are therefore capable), *may* proceed through the funneling process to the application stage. It is at the application stage that a university becomes aware of the possible success of their marketing activities (Wing & Rowse, 1986). The applications process may vary between universities and systems of education. A student's application to an institution may not imply an intention to attend the university (Hughes, 1994). Students may apply to multiple institutions and therefore the 'important' figure for the university is those students who proceed to enrolment. This is in direct contrast to the Australian environment where a student's application generally implies an intention to attend.

The final 'stage' is those students who are retained and who complete their programs. This is usually a smaller number than those who are admitted via the enrolment process (Davis-Van Atta & Carrier, 1986). The students who are not retained may leave for a number of reasons, however a consequential impact on student retention is the effect of student/institution fit (Wiese, 1994). Further, students who choose wisely are less likely to drop out of the institution before graduating (Villella & Hu, 1990).

The recruitment funnel is grounded in the USA literature and therefore may not have direct application to the Australian context. The Australian university applications process is discussed later in this chapter.

¹⁹ The capacity to attend university is determined by the student's access to the resources and support required for going to university. Capacity may relate to financial, emotional and social support.

3.5 Students' university choices are made in a constrained environment

There are levels of choice about institutions which prospective students consider. The first level of choice is the career decision. At this decision level, students will assess their talents and abilities and decide to look for career options that will enable them to best utilise their skills.

In a 1980 review of post secondary plans and choices Rosenfeld and Peng, (1980) suggested that students choose from a number of options, only one of which is post secondary education. The most salient option open to the student is the choice of career. However, careers can be undertaken without the apparent benefit of higher education. Therefore, students who perceive that post secondary education will provide them with better career options including monetary and status rewards will continue to post secondary education (Marginson, 1995). Customarily these students are selected as 'college track' when they are in years seven and eight (Bond & Woodall, 1994; Rosenfeld & Peng, 1980).

Prospective students have a reasonable level of knowledge about their career attainment possibilities (Powlette & Young, 1996; Rosenfeld & Peng, 1980) and they use this knowledge to select courses²⁰ and institutions which can enable them to achieve their aspirations (Little, O'Toole & Wetzel, 1997; Wiese, 1994).

In some courses, particularly those which are highly vocational, such as medicine, engineering and law, the choice of career leads inevitably to a smaller set of course and institutional options (Inglehart & Brown, 1990). Not all colleges and universities offer all possible combinations of majors and therefore students with a strong sense of vocation will seek only those institutions that offer majors in their chosen career paths (Little et al., 1997; Sekely & Yates, 1991).

However, there are some students who are not strongly vocationally oriented when they enter university (Inglehart & Brown, 1990). These students may select from broader fields such as business or humanities and select majors only after experiencing some university level subjects. In addition, there are some institutions that prefer students to enroll in undergraduate programs which are general in nature before self selecting majors that lead to specific occupations (Paulsen, 1990).

A majority of students enrolling in institutions nominate the potential career outcomes as a reason for choosing a particular institution (Chapman, 1993). However, many institutions can assist in fulfilling an aspiration for 'a career in business.' Thus, it would seem that, in some cases, students might be choosing the institution as a proxy for selecting a career path. They may be unsure of exactly what they want to do with their lives (and at seventeen years

²⁰ Courses refer to degree programs and groups of subjects that result in the student attaining a major subject sequence in a particular academic field.

of age this is not surprising); therefore, they enroll in an institution which they believe will help them to get a job after graduation (Esteban & Apel, 1992).

Students who are unsure of their life goals might be tempted to accept advice given by a significant other. However, Inglehart and Brown, (1990) suggest that the student who *accepts* their university goals from external sources, such as parents or careers counsellors, will have lower achievement levels than those who have a strong sense of their talents, interests and abilities. Hence a university selection process, designed to understand such student characteristics, will be important in assisting the student to achieve their life goals.

3.6 Student characteristics considered by institutions during selection

An institution uses student characteristics to determine those most likely to succeed in the study environment. Universities select students who they believe will fit in with the university's requirements both academically and socially. The selection process is designed to ensure a match between the university's capabilities and the students characteristics (Wiese, 1994). Student characteristics, which universities in the USA and the UK use to select students are qualifications, high school performance, occupational interest, ability and potential, social values and social fit. These factors might be useful in determining a propensity to succeed in the study environment. However, in Australia, it is not possible to determine factors such as social values and social fit during the selection process and these must be inferred from other variables, such as the high school the student attended and their performance.

3.6.1 Qualifications

Qualifications determine whether or not the student is able to attend an institution. However, qualification in this context does not imply that the student has a *formal* qualification. It means that students have reached some benchmark that entitles them to consideration for a university place. The type of qualifications sought by the university may be:

- Entrance examination results
- Prerequisite subject results
- GPA scores (Grade point averages USA)
- SAT results (Scholastic achievement test USA)
- ACT results (American College Testing USA)
- A levels (UK)
- Certificate results (Australia e.g. Victorian Certificate of Education, Higher School Certificate)
- ENTER (Equivalent National Tertiary Entrance Rank Australia)

The number of students who are able to meet the qualification criteria of an institution will depend on the institution's objectives (Marshall & Delman, 1984; Sevier, 1994a). Those with an objective to enroll *more* students will allow greater degrees of freedom in the selection criteria. Those institutions where the objective is to enroll only *qualified* students will have lesser degrees of freedom in the selection criteria. Thus, the number of students studying within an academically elite (selective) institution is constrained by the availability of appropriately qualified students, not the number of places that can be offered.

Selective admission is also a signal to the student that the course they seek to graduate from is a worthwhile credential (McGinty Stodt & Wagner, 1985). The evidence they have of high academic standards (a key criterion for preference) is that the institution denies entry to those who do not meet a minimum level of qualification (Kleemann & Richardson, 1985; Richardson & Stacey, 1993). This is commensurate with the consumer behaviour literature on prestige product choices. People who buy prestige products buy them because they are *not* generally available to all (Vigneron & Johnson, 1999). Hughes (1994) suggests that the less selective the institution, the more applications will follow, as students will apply to an institution that they believe will have them. However, the higher level students will not take up places at the more accessible institutions as they will gain places at more selective and therefore more desirable institutions (Hughes, 1994). Thus, selection processes become part of the criteria for choosing an institution.

The qualifications required by the institution, of a student upon entry to a course or program, must be ascertained well in advance of potential admission. Hence, careers counselors, teachers and schools play an important part in the admissions process. Students may not meet selection criteria if they are unaware of what may be required (Rosenfeld & Peng, 1980). Selective admissions institutions that do not communicate with prospective students about selection processes may have less numbers of qualified applicants in the recruitment funnel.

3.6.2 High school performance

Students may gain qualifications by passing examinations and assessment in addition to their assessment at high school. Universities may select students based on the students' high school performance. However, unless there is a direct link between the university and school, whereby the university can rely on the academic merit of the results, it is probable the university will require a more formal qualification. Notwithstanding this potential, Chapman (1981) and Litten (1982) both suggest that an important criteria for selection of students used by universities is high school performance; although neither Litten nor Chapman suggest how performance might be measured. High school performance has been linked to socioeconomic status (Hossler & Gallagher, 1987; Lynn, Hampson & Magee, 1983), and is an important surrogate for determining a student's potential to succeed in the

university environment (Yost & Tucker, 1995). Further, high school performance is related to the expectations imposed on students by their parents, peers and teachers (Purcell, Galble & Caillard, 1994). Therefore, the support for university study is likely to be available for students with higher performance scores.

Universities compete with each other to attract greater numbers of students with high levels of high school performance (Canterbury, 1989; Esteban & Apel, 1992; Hossler & Foley, 1995). There is some argument between measurement methodologies of performance in the USA (Chapman, 1993), as a consequence, high school performance is often linked to another form of test such as the SAT or GMAT. The assessment scores the student achieves in the latter years of high school measure high school performance in Australia. Performance is also measured by examinations and assessment at the state levels. There is a national level scoring system called the ENTER (Equivalent National Tertiary Entrance Ranking). However, each state has their own system of assessment and ranking.

Qualifications and high school performance are used as proxies for assessing the academic potential of the student. However, measurement of what *can be* (potential) rather than what *is* (performance) is very complex. While systems designed to measure *potential* are, in fact, measuring *performance*, the student, who has potential but has lacked access to the resources required to maximise performance, will remain outside the target market of the institution. Marketers of institutions should question if this is the intention of using selection criteria such as those described here.

3.6.3 Occupational interest

Another measure which universities use to select students is occupational interest. Students who are interested in the area they are studying are more likely to be satisfied with the higher education experience and remain at university or college (Avis, 1997; Villella & Hu, 1990). Wiese (1994) supports this contention although his research demonstrated that when students believe that their studies will lead directly to career outcomes, students will be more satisfied than when the institution does not support their career aspirations.

Universities that select students for their career interests are often interested in maintaining professional standards, such as those found by Ingelhart and Brown (1990). They found that students who had a strong sense of vocation (professional identity) made better doctors than those students who did not have a strong professional identity. In addition, students who are personally interested in the area they are studying are also likely to be easier to teach (Fraser, 1996) and more readily motivated (Biggs, 1982; Gnoth & Juric, 1996), thus the selection process can contribute to effective use of teaching resources.

Of course, students are not motivated simply by occupational interest. Students from a wide variety of backgrounds with no prior interest may find that a particular course of study ignites their curiosity and they subsequently find careers that relate to their relatively new

passion. These students, with talents and abilities that may not be evident or identified prior to attendance at an institution, are attracted for a different set of reasons than the students with occupational interests (Litten, 1982).

3.6.4 Social values

A number of authors also suggest that universities recruit students who will socially fit into the overarching career choice as well as the university (Elam, Johnson & Rosenbaum, 1997; Enoch, 1988; Francis, Barry & Fulton, 1993; Webb & Allen, 1994). These authors approach the issue from various perspectives. However, the contention is similar: if students are selected by institutions in a manner that upholds the students' value systems, these students will; firstly, make a contribution to the university they attend (and from which they graduate); and secondly, they will make a contribution to the society in which they live. For example, Stone and Dunlap (1995) suggest that students who are admitted into the teacher education program *after* demonstrating personal and social qualities suitable for teaching are better teachers upon graduation.

Selection for social values takes place in two ways: firstly, there are pre-enrolment tests for social values, which can be conducted at the same time as other performance-related examinations. Secondly, there are post enrolment selection processes, which identify students with the 'correct' propensities, such as interviews and reviews of post secondary study results. In Australia, the opportunity to select for social values is not possible due to the constraints of the centralised admission system (not to mention social equity considerations). However, medical courses have recognised the necessity of recruiting students with a strong sense of vocation for the caring professions and have expanded their selection criteria to include factors other than ENTER scores (Victorian Tertiary Admissions Centre, 1999). In addition, some courses are limiting themselves to post-entry admission to medical courses. This is where students must have demonstrated success at post secondary science before qualifying for admission to medical degree programs. Thus, while Australian institutions cannot select for social values (and therefore the ability to succeed in the chosen profession) they can adjust entry requirements to ensure that the outcome is a graduate who has self-selected and fits the necessary social profile.

3.6.5 Social fit

Social fit is slightly different from the support of social values and is more important in consideration of students' propensity to succeed with studying at university (as opposed to the chosen career). Harris (1994) suggests that students who fit within the social systems of the institution are more likely to be retained through the educational process and complete their degrees. He also suggests that affirmative action programs, which do not recognise students' need to feel as if they belong, are not sufficient in overcoming racial discrimination. In Australia, there are affirmative action programs for indigenous students.

However, the action requires that students apply on special grounds for a targeted assistance place, which most students in this category, unless adequately advised of their 'rights,' may not consider. In addition, students from diverse backgrounds may not want to be seen to require special assistance in their efforts to be equal (Heilman, Block & Lucas, 1992; Kravitz & Platania, 1993; Nacoste, 1990).

The contention that social fit is important to student success and retention has also been put forward by others in the field. Davis-Van Atta and Carrier (1986), for example, suggest that the students who fit the social profile of the institution will be more likely to persist with study and will be less costly to recruit. Francis et al., (1993) indicate that social class does not affect graduation performance. However, their results illustrate that some universities have variable selection processes depending on the social class background of the student. They could not interpret these figures, as they could mean that the institutions were selecting to a class profile or alternatively, students from particular backgrounds were applying for particular courses and were therefore more likely to be acceptable. In Australia, institutions are unable to select for social class; however, it is clear that the majority of students who are capable of meeting the entry criteria for the most selective institutions, is from a relatively limited demographic stratum.

The propensity to select within a relatively 'elite' group of students was also recognised by Webb and Allen (1994) who discussed the implications of this on equity of access for minority groups. Moreover, they proposed that instead of selecting within a small socioeconomic group, universities should provide more support for those from other groups. Australian institutions that wish to expand their target markets would have to consider recruitment outside current elite limits. This would be consistent with the present Australian Government's stated ideal of increasing access to education for the socially disadvantaged (Kemp, 1999). However, simply increasing capacity within selective institutions will not encourage them to be less elitist, either in principle or action, if they believe that elitism is academically meritorious.

Furthermore, Hossler and Gallagher (1987 p217) suggest that university 'courtship' activities can alienate students during the search process if students perceive a gap in the social profile of the institution and their own socioeconomic status. They point out that there is an inverse relationship between high-income student applications and aid grants. The more aid the institution is seen to offer to students, the less students without financial needs will apply to the institution. Further, the level of financial aid required to influence a student to move an institution from second to first choice is substantial. Hence, institutions may find that middle income applicants decline if there is too much emphasis placed on financial aid and/or social diversity as the middle students may believe they do not fit. This is supported by Vilella and Hu (1990), who suggest that student retention is directly related to recruitment efforts to match the demographic profile of the existing student body. Accordingly, institutions need to

design recruitment processes to attract an appropriate number of suitable students. Then institutions will employ selection processes to maximise the potential for student/institution fit.

3.7 Universities also apply selection processes

Selective admissions institutions apply an admissions process in order to select students. Some institutions have individual processes. The selection process is designed by the institution to ensure fit between the institution and the student.

The selection process in Victorian institutions is presented in Table 3-1. However, for comparative purposes, the selection processes of the USA and the UK countries are included in Appendix A. The Victorian selection process is outlined in the following table.

Table 3-1: Tertiary applications in Victoria Australia

<i>Stage in admission process</i>	Description
Goals and aspirations	Student develops an ambition to attend university and decides on career and life goals
Middle years of high school	Students make career related subject choices which determine their capability of attendance at particular courses and institutions
Years 11 and 12	Indicates capability ²¹
Socioeconomic status	Indicates capacity to attend ²²
Student application 1	Student may apply to twelve institutions through a centralised system of application such as VTAC (Victorian Tertiary Admissions Centre). The application takes place before the student has sat for the examinations that determine their ranking score.
ENTER	Determines qualifications and therefore the institutions to which the student will apply. The Equivalent National Tertiary Entrance Ranking is a score that ranks the students' performance on a national level. The result is a percentage score between 40 and 99.95 representing relative ranking within the age cohort (see (Loci, 1999)).
If not ENTER, STAT, DULSAT,	Special Tertiary Admissions Test Deacon University Law School Admissions Test Determines qualifications and therefore the institutions to which the student will apply
UMAT	University Medical Admissions Test for students who wish to study medicine. This is only for those students who achieve ENTER scores that are satisfactory for admission to medical degree programs.
Student application 2 (change of preference)	Student may change applications to twelve institutions on receipt of actual examination results. Applications must be expressed in order of preference.
Selection criteria is applied by the institution	Student may be acceptable to several institutions
1 st round offers	Institutions may send students' offers to VTAC, which then distributes the offers to students in order of their previously expressed preference. The student may therefore only receive one offer if it is their first preference. However, if the offer is not the student's first preference, the student may receive an offer in more than one round. Usually first round offers are made in the 1 st -4 th -preference band. (cont'd over page)

²¹ Capability is defined as the academic ability to successfully complete the course of study selected.

²² The capacity to attend university is determined by the student's access to the resources and support required for going to university. Capacity may relate to financial, emotional and social support. These support structures tend to be related to socio-economic status rather than simply income. For example, parental income may determine the capacity to pay fees, parental occupation may determine the subjects of interest chosen, etc.

<i>Stage in admission process</i>	Description
Offer is sent	Student may receive offers of two types 1: HECS based (Higher education contribution scheme) ²³ 2: Fee paying
Offer accepted	Student may accept offer however if their first preference is offered in another round, students may decline a previously accepted place
2 nd round offers	Institutions which did not fill course quotas with first round offers (students did not accept places) may offer places to students with lower preference orders
Offer accepted	Student may accept offer however if their first preference is offered in another round, students may decline a previously accepted place
3 rd round offers	Institutions which did not fill course quotas with second round offers (students did not accept places) may offer places to students with lower preference orders
Offer accepted	Student may accept offer
Offer may be deferred	Student may defer offer and take up the place in a succeeding year.
Attendance	Student attends one institution
Retention	Student remains to graduation (or not)

Source: Victorian Tertiary Admissions Centre (1999)

The major difference between international systems and Australian systems is the lack of a direct application to the institution, except in special circumstances. Internationally, direct application might facilitate the institution having information about the prospective student which could be of value (Marshall & Delman, 1984; Walters, 1994). However, it also increases the level of complexity in enrolment processes, as it appears quite possible that an institution may not know who will attend the institution until they actually arrive (Davis-Van Atta & Carrier, 1986).

To complicate further the decision-making process in Australia, the choice is between courses that students would like to undertake but in which they may not be offered a HECS based place. The same course may also be offered with slightly lower entry requirements for full fee paying students. Students must nominate 12 course options and these can be full-fee paying or HECS based, and will probably be both if the student has a particularly strong vocational interest. Students who nominate institutions that are unlikely to accept them may find themselves without a place at all. Consequently, students usually nominate one 'ambitious' preference and then realistically nominate the rest of their preference set, allowing for one 'safety net' preference at the bottom of the ENTER scale. The ambitious preference may be one that they might, under special circumstances, gain access to. However, students who have no special circumstances are discouraged from applying ambitiously in case they waste their preference applications. The safety net preferences may include TAFE options or full-fee paying versions of their higher order preferences.

Students have only 12 preferences they are able to state. They are constrained by the central enrolment process from stating more preferences. Students are strongly discouraged by

teachers, counsellors, parents and advisors from ‘gambling’ with their preferences by stating preferences where they have no real possibility of gaining access as there is no ‘second chance draw’ in the Australian system. The student has to gain a place in an institution via the ENTER system or they face exclusion from the higher education system until the following year (when they will compete with the new intake), or when they are able to qualify under the ‘mature aged’ entry scheme.

Students who would like to avoid fees may choose to apply only at those institutions where HECS based places are available. There are some scholarships available. However, at the undergraduate level, scholarships are not usually substantial and therefore do not form a large part of the decision for undergraduate education.²⁴

A further complication, in terms of marketing potential is – in Australia, there is no contact between the institution and the student until *after* the applications process has begun. Although there may be considerable pre-application contact, the institution is not aware which of students they have been in contact with will actually qualify to attend. Therefore, the student is already well within the applications process before contact is initiated. Further, the number of offers the student may accept is limited and regulated by a central decision-making organisation. In Australia, the institutions are unable to ‘court’ the high aptitude students at the expense of other categories of student *during* the applications process (although much courting takes place outside the process). Therefore, promotion to high aptitude students must take place well in advance of the applications process or after the student has enrolled (even if at another institution).

Students seeking specialist courses (high degree of difficulty of entry) are invited to sit for entrance examinations in addition to their high school certificate examinations. Eligibility for some courses is determined by results of these extra examinations. Once the student has sat an eligibility examination, their details may be made available to participating institutions. Accordingly, the level of direct communication between prospective students and institutions is limited during the applications process.

In the USA and the UK, direct applications to institutions increases the level of active interest in the student as potential customer (Muston, 1985). Furthermore, the passive acceptance of student applications from a centralised decision-making body makes the process simpler from the institutional point of view. However, the student is remote from the institution and from a marketing perspective this decreases the level of contact with the customer.

²³ The Higher Education Contribution Scheme is a system whereby students pay relatively nominal fees to attend a particular institution. These fees are set by the Australian Federal Government and are differentially related to course popularity and the perceived ability for graduates to repay upon graduation. These fees can be paid ‘up front’ at the beginning of each year or as part of the income tax deductions after graduation.

²⁴ Scholarships are usually given for academic merit or high school performance scores. If we accept the argument that academic performance is strongly associated with socio-economic status (cf Abbott - Chapman, Hughes and

3.8 There are different types of institutional options which students choose

Students' choices are constrained by the environment in which the choice is made. Notwithstanding these constraints, in which choice might feasibly be limited to a single institution, students will develop preferences for attending a particular institution from among those they perceive are available. Chapman (1984) posits that students choose institutions²⁵ from an applications set. This set of institutions includes:

- A group of institutions that the student would like to attend but which may not accept her/him
- A group of institutions that the student would be able to attend but which the student would rather not apply to
- A group of institutions that the student would not apply to in any circumstances.

The application set is similar in structure to an evoked set from the consumer behaviour literature. Evoked set theory implies that customers will buy from a group of brands that they remember (Sheth, Mittal & Newman, 1999). The brands may share several attributes, such as quality, but the brands are perceptually arranged in a certain way within the customer's mind. The perceptual arrangement of attributes limits the types of choices that the client will make. For example, people may perceive that milk is a relatively similar product but they will prefer to buy low fat milk. Therefore, fat levels of milk are the most salient attribute in the customer's mind when buying milk. However, if fat levels are not assessable, the customer may choose a brand according to another attribute such as package size. There are also 'inept sets' in consumer theory and these are brands that the customer will *not* buy, even if no other brands are available (Belonax & Javalgi, 1989).

In Australia, the decision is made primarily according to course and field of study and the institution is often a secondary consideration. Thus, in the USA the university is considered at both the *brand* and the *product* levels. Whereas in Australia, the university brand is secondary to the product (diploma or degree courses) that are covered within the overarching brand name. Choices are made at the terminal course (product) level; for example, between degree programs which lead to careers in accounting.

In considering courses and institutions, students will create an evoked set using attributes that are representative of their perceptions of the institutions. Thus, students create a perceptual typology. A typology of institutions of interest to policy makers²⁶ has been suggested by James, Baldwin & McInnis (1999). They posit that students choose within

Wyld (1992; Niles (1986)), then merit based scholarships will be granted to the students who are potentially least in need of financial support.

²⁵ In Australia, this would be courses rather than the institution.

²⁶ Students probably do not categorise institutions or courses in this manner. However, some *a priori* categorisation of institutional type is necessary to provide a setting for the research.

categories of institution such as research, metropolitan, regional and technical. There are similarities between this typology and choice attributes suggested by other authors (Brown, 1991; Chapman, 1981; Chapman, 1984; Chapman, 1993; Clinton, 1989; Cook & Zallocco, 1983; Dehne, 1994; Harris, 1994; Hossler & Gallagher, 1987; King, Kobayashi & Bigler, 1986; Litten, 1982; Parameswaran & Glowacka, 1995; Wiese, 1994). In order to compare the Australian studies with international studies, the term 'specialist' institution is used to describe technical or specialist skill development by institutions in the category. This categorisation is different from the Carnegie classifications of *research*, *doctoral degree granting*, and *comprehensive* (Kleemann & Richardson, 1985). However, the new categorisation is created in order to be more comprehensive of prestige and status differences and to include country based differences. It is recognised that prospective students may not actually use the suggested typology.

It is argued that prospective students will create evoked sets *within* a particular group of institutions. Furthermore, students may *collect* information from a variety of institutions in order to maximise their options but they will only *consider attending* a few institutions (or indeed, only one institution). The *a priori* groups from which students may choose are outlined in the following sections.

3.8.1 Research

Research institutions are relatively elite institutions which have evolved over longer periods of time and have research track records. They may offer courses with vocational outcomes but the focus is on higher learning, which may not lead directly to a job (Weiler, 1989). Research institutions may have a focus on postgraduate courses, including doctoral degree programs. They offer a wide variety of courses and have both general (e.g. arts and humanities) and specialist courses (e.g. law and medicine). The types of students who apply and attend tend to be in the higher socioeconomic status groups. Although this apparent social elitism is related to the highly selective admissions processes, which tend to favour students from high performing school environments (Rosenfeld & Peng, 1980). In Australia, these institutions are called 'Sandstone' universities. In the USA they are called 'Ivy League' universities and in the UK, one would include universities such as Oxford and Cambridge.

3.8.2 Metropolitan

Metropolitan institutions are located in major cities and tend not to be 'elite' in selection processes. Although these institutions still have selection processes, the entry requirements are not as stringent as the research institutions. The focus at these institutions is often on teaching and offering courses with vocational outcomes (Weiler, 1989). These institutions offer postgraduate courses but often in specialist fields rather than as an institution-wide postgraduate research effort. They offer a wide variety of courses and have both general (e.g. arts and humanities) and specialist courses (e.g. law and medicine). However, the specialist

courses may not be as highly sought after as those offered by research institutions because of the apparent lack of research track record. Often, metropolitan institutions are simply younger than the more established research institutions. The types of student who apply and attend tend to be from upper and middle socioeconomic status groups.

3.8.3 Regional

Regional institutions serve a regional area and as such tend to have more open selection criteria than either research or metropolitan institutions. The focus in regional institutions is often to provide a set of vocational educational opportunities to a relatively local community. From this perspective, the institutions often have a regional character and may provide educational opportunities that reflect the requirements of the local environment. For example, wine technology courses will be found in a wine-producing region. The regional institutions may have specialty offerings.

The socioeconomic status of the people who attend will be reflective of the local community. However, the people who attend are not necessarily local, there are a proportion of students who will attend from outside the region because the university seems to offer safe and home like environment (Coccarri & Javalgi, 1995).

3.8.4 Specialist / Technical

Specialist or technical institutions tend to be those that offer select courses in some areas and do not offer a wide variety of courses. They may be regional; for example, The University of Ballarat offers courses in a number of areas and specialist courses in mining technology. However, specialist institutions may also be found on relatively small campuses in inner urban areas offering highly specialised courses such as music, fine arts or military instruction. The focus is on teaching and skills development within a field of study. Specialist institutions may also be religious. Specialist institutions have very selective admissions processes and may have individual entrance examinations. They differ from research institutions in the narrow curriculum and the focus on vocational skill development. The type of student who applies and attends will be strongly attracted to the field of study and therefore may be from any socioeconomic status background. However, it is unlikely that students from lower socioeconomic status backgrounds will have the capacity to consider attendance except in special circumstances.

Students choose courses related to their career and life goals. However, not all institutions offer courses that are applicable to all types of student and a part of the institutional product is the type of offering available.

3.9 Students choose course and mode of delivery options

Course options at the university level are related to the subject offerings or majors offered and the type of delivery. Delivery in this context means whether the course is available for part time study or only for full time students. In addition, it may mean choosing between courses that are offered by distance education (external studies), or the emerging 'virtual' university course available on the Internet. Each of these choices will play a part in the development of an evoked set of courses and therefore institutions. For example, mature or late entry students will often choose part time or distance education study rather than give up income earning opportunities (Webb & Allen, 1994). Part time offerings are also evaluated by whether or not the institution offers evening classes (Buckley, Mahaffey & Turner, 1996). Most institutions will allow students to enroll on a part time basis, however if they do not offer evening classes, students will be required to join full time day classes. High school leavers will tend to choose full time, on campus study options and complete their tertiary education in three or four years (Weiler, 1989).

3.10 Précis of university choice and structure of the decision

Students make choices and develop preferences for institutions within constraints. The type of courses available and the institution that offers the courses are limited by government regulation. In this 'market,' demand exceeds supply for some institutions and some courses; therefore these institutions select the 'best' students to fill the limited number of available places. The selection processes of the institution are designed to ensure a fit between the institution and the student and to maximise the potential for the student to succeed. However, this process may also limit the availability of target markets for institutions, both those with selective processes and those with open entry.

This chapter has not attempted to answer the questions posed; its purpose has been to provide a background for the subsequent chapters. This chapter has provided an overview of the issues that affect the institutional offering. The part these issues play in the development of the preference set for choosing between institutions is discussed in the following chapter. The following chapters contain both discussion and results for each of the elements under examination.

Section III - University choice

This section comprises the four 'data collection' chapters. Each chapter considers a separate component of the hypothetical research framework (Figure1-2).

Chapter Four examines *why* students choose a university (criteria for preference). Chapter Five begins the discussion of *how* students choose a university and explains their information search activity. Chapter Six continues the discussion of *how* students choose an institution and details the issues relating to motivation to search for information. Chapter Seven completes the discussion of *how* students choose university and explores students' decision-making capability.

Each chapter is consists of a review of the literature surrounding the issues from a consumer behaviour and an educational point of view. The hypotheses generated from the literature are then put forward, followed by the results and discussion of the findings for each component of the hypothetical research framework.

Consequently, each chapter is presented as a 'stand alone' document explaining the concepts. However, while each chapter is designed as a discrete document, there will be some overlap between concepts covered in contiguous chapters. This overlap is necessary to explain the relationships between the constructs under examination.

4 Perceived criteria for preference

4.1 Introduction

The previous chapters have introduced the concepts under examination and have outlined the environment in which a prospective student makes a decision to attend university in Australia – *what* prospective students choose. This chapter closely examines the issues surrounding the criteria used by students in developing a preference for an institution – *why* prospective students choose.

The issue of *why* people choose between specific alternatives has been discussed extensively (see Appendix B for the list of papers that have contributed to the discussion). This chapter presents the criteria used by students in developing a preference for an institution to attend. The shaded area of the hypothetical research framework is the focus of the discussion (Figure 4-1). The purpose of this chapter is to present the extant literature relating to why students prefer one university to another. However, it must be recognised that preference is developed for a university within a relatively constrained decision-making environment (Chapter Three). It is argued that preferences are developed over time. Thus, preference development takes place after information search activities (either formal or informal) have taken place. In addition, preference development may be contingent on the students' decision-making capability and motivation to search for information. Further, the criteria used in preference development may not be directly controllable by the institution.

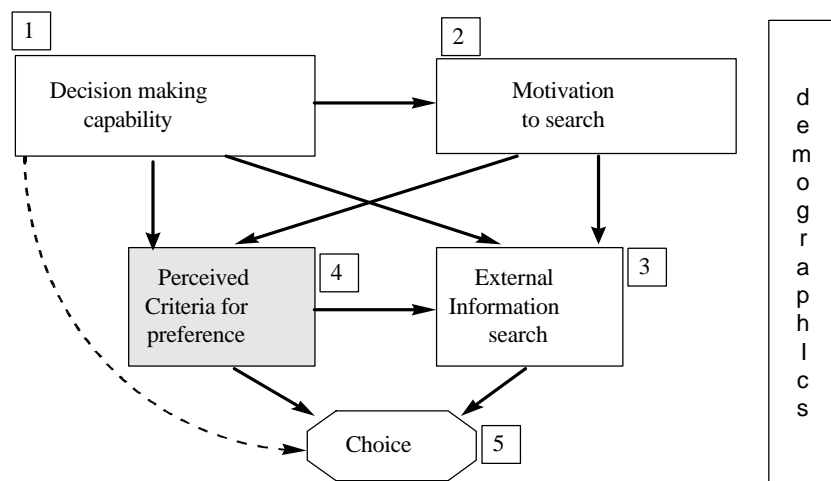


Figure 4-1 Hypothetical research framework - Criteria for developing a preference

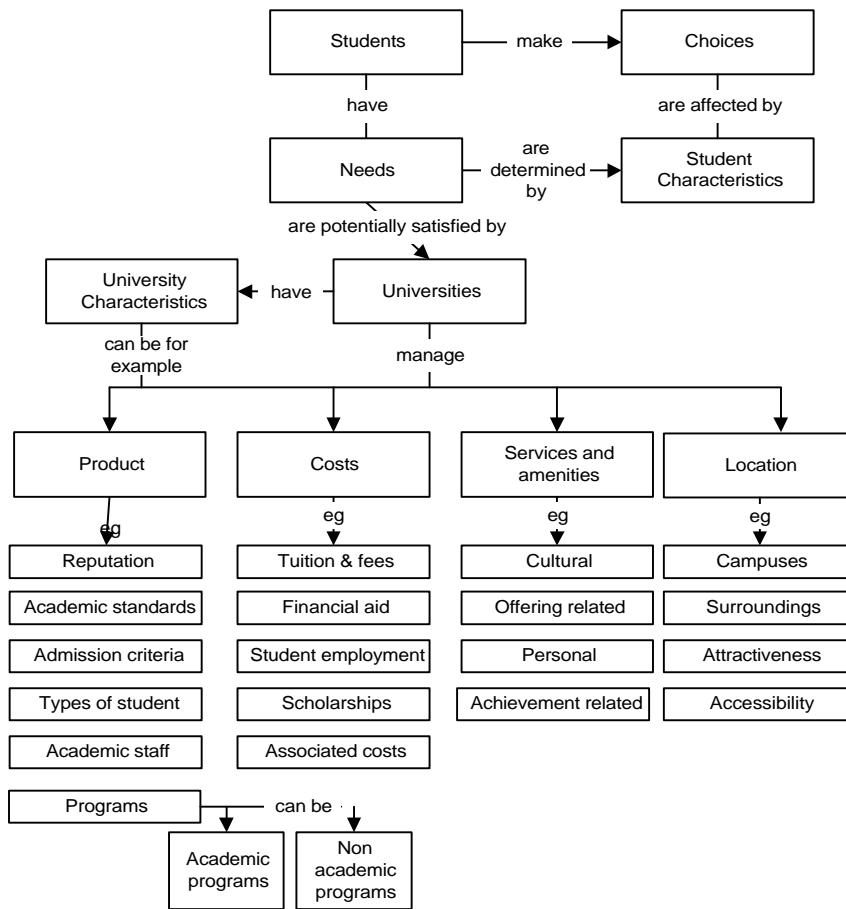
The issue of which criteria students use for developing a preference between institutions has been discussed extensively over the last 20 years (see Appendix B). However, this chapter does not aim to present an exhaustive study into the criteria for making a choice and their impact on decision making. A brief overview is necessary as the criteria for choice are postulated to vary with institutional type (James, Baldwin & McInnis, 1999) and student characteristics (Litten, 1982). Further, much of the previous work is based in the USA and UK; hence an Australian perspective must be developed.

This study posits that students make choices of course (and therefore institution) based on their self-perceived needs and objectives in addition to their capacity and capabilities. In addition, the student chooses from a set of assumed or perceived institutional characteristics²⁷. Students may also be influenced by external factors such as parents and significant others, and marketing communication efforts of the institution (Chapman, 1981; Chapman, 1984; Litten, 1982). In this chapter, the discussion will focus on the factors that an institution manages to create the university 'product' (Yost & Tucker, 1995). Factors, which may *influence* the decision, but are not *characteristics* held by the institution, are included in Chapter Five – Information Search.

4.2 Concept map of students' criteria for preference development

The concept map on the following page is an overview of the discussion in this chapter. The map is best interpreted by starting at the box marked **students** at the top of the page and read downwards unless the arrows indicate a direction. Concept maps are used as a communication tool rather than a scientific description of the actual set of relationships. The map does not represent hypotheses.

²⁷ Students may not know what the characteristics of an institution are when they are making a choice. For example, they may choose 'reputation' assuming that a good reputation will ensure the presence of other important characteristics.



Conceptual map 4-1: Criteria for preference

Chapman’s 1993 meta-study categorised institutional characteristics according to costs, quality, services and location (p 407). The issue of ‘quality’ is too broad to be discussed here, therefore, for illustrative simplicity; Yost’s (1995) concept of ‘institution as product’ will be used to frame the discussion of institutional characteristics which student use as criteria for choice. There is no doubt that students would all choose a ‘quality’ institution to attend. However, it is argued in this study that students may be unable to evaluate the quality of an institution because of its credence properties. Therefore, students may use proxies for assessing the quality of an institution such as those discussed here.

4.3 Students choose between institutional products

The institutional product is not readily defined. However, authors such as Licata and Frankwick (1996); Mullet (1985); Roche (1994) and Stewart (1991) have used the term *product* to refer to the set of factors that make up the institution and without which the institution could not operate.

4.3.1 Programs offered by the institution may influence students' choices

In contrast to the existing literature, which argues that location is the primary determinant of choice, it is argued in this study that the primary reason a student chooses a particular institution is because it offers the degree or course that the student wants to study. However, the student would not study at an institution that they perceived to be inferior. Thus, reputation and admission criteria as a proxy for quality are potentially more important than the program offering.

Institutions offer a variety of programs both academic and non-academic. Academic programs include; the degrees offered, for example, Bachelors, Masters or Doctorate levels, and the specific courses within the degree programs for example, medicine, business or law. In addition, institutions may offer research programs. As mentioned in Chapter Three, the type of course offering may be instrumental in the decision (such as when student seek a specific career path) or it may be incidental, such as when the student is unsure of what they want to do with their future lives. The level and type of program chosen may depend on the students' individual requirements and perceptions of their capability to undertake the field of study (see for example Bruwer (1996); Buckley, Mahaffey and Turner, (1996); Chapman (1993); Edgett and Cullen (1992); Little, O'Toole and Wetzel (1997); Powlette and Young (1996); Winzar and Morley (1994)).

Non-academically focussed programs may also influence the decision to attend a particular institution. Athletic programs (both quality and quantity) receive many citations in the literature relating to institutional choice (Brown, 1991; Bruwer, 1996; Chapman, 1993; Cook & Zallocco, 1983; Cullen & Edgett, 1991; Dolinsky & Quazi, 1994; Marshall & Delman, 1984; Mullet, 1985; Widdows & Hilton, 1989). The focus on athletic programs in American institutions is somewhat unique to America. It is argued in this thesis that students in Australia may choose universities with particular sporting (athletic) *facilities* but the emphasis on sporting *programs* is not as prevalent in Australian institutions.

4.3.2 The institutions' reputation may influence students' choices

Another component of the institutional product is the institution's reputation. However, reputation may be:

- *General* reputation - not associated with any particular characteristics of an institution (Hollenbeck, 1988; Webb & Allen, 1994)
- *Academic* reputation – associated with the academic programs and standards of the institution (Chapman, 1993; Davis-Van Atta & Carrier, 1986; Discenza, Ferguson & Wisner, 1985) and,
- *Alumni* reputation (Bruwer, 1996; Maguire & Lay, 1981; Webb & Allen, 1994).

Reputation is an *outcome* of an institution's *entire* set of activities (Vining, 1993). The components of a reputation in the corporate world are market leadership, product quality, service quality, brand image and performance (Saxton, 1998). There are inherent difficulties in adapting corporate literature to this context. For example, in the academic world, market leadership may be interpreted in terms of: *institutional size*, that is, a larger university size means more market share. Or, perhaps, *institutional output*, for example, the number of students graduating, research papers produced or applications from prospective students received. Further, market leadership could be claimed in terms of the number of alumni who become famous after graduation. Thus, market leadership in an academic sense becomes a relatively meaningless measure, as any institution may claim market leadership, depending on what they would like to be seen to lead.

Saxton's (1998) definition of reputation mirrors that of Yavas and Shemwell (1996 p76), who suggest that it is the sum of the students' perceptions of an institution which creates 'image'. In examining the image construct, they apply correspondence analysis to determine the perceptual space positioning of eight universities in a local area. However, they include choice criteria such as reputation and instructional quality. Both reputation and quality are intangible dimensions that cannot be evaluated easily without the provision of anchor points and complex descriptors. Further, if we refer to Saxton's definition, reputation *is* image and therefore may not be considered separately. Traynor (1981) used a similar multivariate methodology to examine the issues underlying the benefits that students sought and proposed a semantic differential scale which attempted to generate a concept of institutional 'reputation.' Traynor used anchor terms such as *tradition*, *research orientation* and *known* versus *unknown* to unbundle the reputation construct into something personally meaningful to the student. However, Traynor's work, while identifying the components of reputation, did not attempt to assess any underlying dimensions for institutional reputation.

Prestige, status and tradition are all components of an institution's reputation (Edgett & Cullen, 1992). These terms are used somewhat interchangeably within the literature (see for

example, Dehne (1995); Esteban and Apel (1992); Grace (1989)). However, students do not necessarily choose institutions with the highest levels of prestige (Grace, 1989; Dehne, 1995). They also choose institutions where they think they will fit into the social and academic life (James et al., 1999). Thus, reputation may be linked to prestige and tradition but it may be a reputation for elitism or being old-fashioned, which may not be positive (Grace, 1989). In addition, prestige is often associated with selective admission processes. Hence, prestige may be an outcome of exclusive selection processes. Therefore, the concept of prestige needs to be explored in the institutional context.

Finally, institutions may have different reputations for any of their campuses, or specific programs, courses and also levels of teaching that they offer (Straumanis, 1987). Institutions that offer programs at various levels may not place *emphasis* on a particular level²⁸. One of the determinants of an institution's reputation is its academic standards.

4.3.3 The academic standards upheld by the institution influences students' choices

The academic standards of the institution also form a part of the institutional product. In reviewing the literature on the importance of academic standards in the decision making process, it becomes clear that all institutions uphold the highest academic standards and it is only 'the others' who do not. Chapman (1993 p 419) calls this the *Lake Wobegon Effect*. Lake Wobegon is a mythical American city where every average college performs above average. This effect is brought about because asking existing customers to rate your products will always result in a positive picture. The customers who are unhappy have all gone somewhere else (Dorrell, 1992). Further, it is unlikely that a customer will admit that they have chosen an inferior product and may rationalise their decision even if they are somewhat dissatisfied (Sheth et al., 1999). Indeed, originally dissatisfied consumers may become ardent advocates of the product in order to assuage their dissonance (Haywood, 1989). Cook and Zallocco's (1983) and Bruwer's (1996) results support this observation. They found that students' perceptions of institutions in their region produced 'positive' results for the ones they actually attended, regardless of the authors' perceptions of the strengths and weaknesses of particular institutions.

Academic standards can be upheld in differing ways that facilitate choice decisions. Academic standards may be represented by workload, study hours, time on task requirements, quality of output requirements (reading, writing, computation) or independent learning requirements (Rosenfeld & Peng, 1980). Students may choose between a perceived

²⁸ The emphasis on a particular level of teaching (under graduate, post-graduate or research) is cited as being important to the decision to attend a particular institution (Kleemann & Richardson, 1985; Maguire & Lay, 1981; Widdows & Hilton, 1989). However, when constructing an evoked set, students at various levels are unlikely to look at institutions that are *not* offering courses within their degree level. Institutions, which are not seen to focus on the students' area of study, will be consigned to the inept set. Thus, the choice *between* institutions *within* an evoked set will be determined by other criteria.

high level of requirements or low levels according to their capabilities. Students will want access to the highest possible standards but will not choose to attend institutions where they may fail to succeed (Stanley & Reynolds, 1994). Thus, students seek institutions according to their perceived ability to meet the requirements of the study programs.

In addition, there is an assumption that higher academic standards leads to greater employability of the graduates (Braxton & Nordall, 1985). The students who are capable of meeting the admission criteria may assume that the institution will provide them with greater opportunities for employment. In many respects, this is a self-fulfilling prophecy. The higher quality students apply for higher standard institutions and are therefore sought out by those employers looking for high quality graduates.

Academic standards therefore become a proxy for potential employability, maximisation of students' capabilities and the overall quality of the institution. In services marketing terms the standards become a tangible measure by which the intangible factors are evaluated.

4.3.4 The admission criteria applied by the institution influences students' choices

A further component of the institutional product is the admission criteria applied by the institution in the selection of students who apply to attend. The admission criteria of an institution signals to the student the institutional standards and requirements (Braxton & Nordall, 1985). Students who are highly competitive and capable will ensure that they have the qualifications to gain admission and will maximise their potential number of choices (James et al., 1999). Students who are not as capable may seek institutions where access is more readily available, however they may maximise their choices within their self perceived capability (Hughes, 1994). A student's evoked set will consist of those institutions where they may meet the admission criteria. The inept set will comprise those that are not accessible, or those they would not consider attending. Hence, admission criteria will form part of the decision making between institutions within the evoked set.

In Australia, the admission criteria is dominated by the ENTER system (see Chapter Three). Thus, while institutions use selection processes to determine capacity to succeed, students use admission criteria as a proxy for other factors. This is a direct contrast to the USA where students may make multiple applications to multiple institutions with a chance of being selected by more than one institution. In this case, the student may make the final specific trade-offs between institutions when they have multiple options to consider. In Australia, the ENTER system ensures that the choice is made by the institution and the system and the student who makes a 'choice' must choose with relatively limited knowledge of how acceptable they will be to the institution.

The admission criteria, by selecting students with a specific set of suitable characteristics, determine the types of students who may attend the institution.

4.3.5 The types of student who attend the institution influences the choices of students.

The institutional product may also consist of the type of students who attend the institution. Bruwer (1996) suggests that students select institutions where they will fit into the social profile of the student body. Other authors discuss the concept of student type in relation to the quality of the student body (Ashar & Lane, 1996; Dehne, 1993; Edgett & Cullen, 1992; Grace, 1989). 'Feeling comfortable' with fellow students is one aspect of choice but in addition, the ability to feel that you will be with students "who are serious about learning" is equally important (Dehne, 1993 p 20).

In the USA, the type of student in attendance at the institution may also be viewed in race and gender terms (Barondess & Glaser, 1993). Barondess and Glaser found that students from minorities were less likely to take up study for medical degrees although they met all the admission criteria of institutions. Taylor's (1997) study supports this finding and suggests that many students from minority groups attending predominantly white institutions felt that they had to work harder than their white counterparts in order to succeed. Consequently, students from minority groups may select institutions in which they may feel that have equal opportunity and the ability to succeed regardless of their backgrounds.

In Australia, there are affirmative action programs for students from disadvantaged backgrounds. Disadvantage may be seen in terms of access to study opportunities (e.g. rural) or socioeconomic status, as well as indigenous Australian backgrounds. Special entry and bridging programs are usually available for students from these backgrounds. However, as Rosenfeld (1980) suggests, it is likely that students from these backgrounds may not seek access to higher education because they do not perceive that they have the capacity²⁹ to attend although they may have the capability³⁰. Further, students from these backgrounds may not perceive the relevance of higher education to their lives.

4.3.6 The institution's academic staff may influence students' choices

The institutional product consists of the academic staff who deliver the educational product. The literature relating to the impact of academic staff on student choice has focused on the quality of academic staff (Bruwer, 1996; Coccari & Javalgi, 1995; Discenza et al., 1985; Kleemann & Richardson, 1985). However, it is questionable whether or not prospective students are in a position to evaluate the quality of academic staff due to the credence qualities³¹ of the offering (Zeithaml, 1981). Firstly, there is no agreed definition of the term *quality* (see, for example, Baldwin (1994; Donaldson & Runciman (1995; Hall (1996)). Secondly, the students may be in attendance at the institution before they meet their first

²⁹ Economic and social support

³⁰ Intellectual and social capabilities enabling the student to succeed in the study environment

³¹ Credence qualities are where a service is highly intangible (e.g. education) and therefore the customer must rely on trust (credence) to evaluate the potential value of the service (Zeithaml, 1981).

academic staff member. In the latter case, the student has made an assessment of quality as being important, but has relied on other criteria as a proxy for assessing the quality of the staff. Consequently, students may believe that academic staff quality is important but they may not collect information regarding the universities' staffs.

In conclusion, the institution may be conceptualised as product consisting of a number of elements; program of study, reputation of the institution, academic standards upheld by the institution, the admission criteria the institution applies in the selection process, the types of students who attend and the academic staffing profile of the institution. The combination of these factors generates a value for the student and their family. This value may then be assessed in terms of the costs associated with attendance at the institution and the students' capacity to pay for access to the most valuable combination of factors.

4.4 Students may consider the costs associated with attendance at an institution

The costs associated with attendance at an institution is the second major concept examined in this chapter. It is argued that, in Australia at least, costs are not the most important factor in the decision because of substantial government subsidies for higher education. However, costs may be viewed in a number of different ways. Consequently, they require further examination in this research.

The creation of the product may be an expensive business for an institution (Yost & Tucker, 1995). Yost and Tucker (p 48) proffer the following:

Qualified buyers for private, selective-admission colleges and universities consist of those family groups which are ready, willing and able to pay for a service for which the list price is now a minimum of \$60,000 and often over \$80,000 for four years of tuition, fees, room and board. After the purchase of a house this is the largest purchase in the entire life cycle of many families.

The costs associated with attendance of the institution are therefore paramount to the families who choose to send their children to college in the USA. However, as Dehne (1993) suggests, students *expect* that financial aid will be available for excellent students. Therefore, aid, scholarships and student employment programs may ameliorate the total costs of attendance³².

In addition, families who intend to send their children to college or university plan to do so for extended periods of time. In the USA and the UK families save for their childrens' education for many years prior to researching specific institutions. Jackson (1978) and

³² In Australia, the costs associated with university are relatively small compared to the USA. The introduction of 'free' tertiary education by the Whitlam government in the 1970's has meant a generation of students with access to higher education regardless of financial status. However, the goal of egalitarianism was not achieved as access to university is based on academic standards (usually only achieved by those of higher socioeconomic status).

Hossler (1987) would call these students the '*whiches*'.³³ These students never seriously consider *not* attending an institution and the impact of costs when the decision is finally made is relatively minimal. When the time comes to find a specific institution to attend, the cost is no longer the key part of the choice process as the capacity to attend has been determined long before the search process begins (Chapman, 1984). However, institutions which offer financial aid or lower tuition costs may be compared on costs if all other factors are considered equal such as availability of programs and quality of facilities (Dehne, 1993).

In Australia, the costs associated with attendance comprise HECS or full fees and any living costs related to being away from home. Students in Australia do not travel as widely to access institutions as their American peers and tend not to travel interstate in order to study (Winzar & Morley, 1994). As a consequence, the costs of living away from home are not a major factor in choosing an institution to attend for urban students who can commute to university. For those students from rural areas, the costs of living away from home can be as substantial as their peers in the USA. The HECS fees are standard across institutions but they vary between fields of study. In addition, the levels of HECS fees are not as financially significant as in the USA. In some cases, HECS fees are as low as \$4,000 per year. Further, the fees can be paid after graduation via the taxation system. Thus, HECS fees do not create a strong differentiating factor between institutions or programs. In Victoria, only 4 of the 8 institutions offer full fee based places and these are in the high demand courses such as Medicine, Law and Business. Students with strong performance at high school can usually apply for and gain a HECS based place within their chosen discipline somewhere in Australia. As such, the fee-based places tend to be in high prestige courses where the entry requirements are very high and the selection criteria for admission very narrow. Thus, students who opt for a fee-based place may be very similar in socioeconomic status and academic ability to those who gain the HECS based places. Furthermore, students ascertain their capacity to attend the institution before beginning the choice process. Therefore, it is argued that fees and scholarships do not form a large part of the decision to attend an institution at the undergraduate level in Australia.

If the institution has an offering that attracts the student and the student has the capacity to attend university, the next set of criteria that may differentiate between institutions is the amenities and process of offering the services offered by the institution.

³³ Jackson (1978) categorises prospective students as '*whiches*', '*whethers*' and *nots*. *Whiches* always go to college or university although they may constrain their choices to match their capability and capacity. *Whethers* may decide to go to college depending on capacity and capability but equally may decide to enter the workforce. *Not*s do not consider college or university attendance at any stage.

4.5 Students may choose between the amenities offered and the processes of offering the institutional product (augmented services)

The amenities and processes of offering the services of the institution are different to the *product* discussed above. It is argued that the amenities and processes are not necessarily core activities of the institution. They are additional to core programs or are how the institution *chooses* to offer the product. As such, they are considered to *augment* the institutional product. For example, the research program (product) might be offered to a very select group of students and as such is not very available (augmented process). Further, the university may offer an undergraduate business degree (product) but it might be available via external studies and on campus (augmented process). Augmented amenities and processes that have been demonstrated to be instrumental in university choice are:

- *offering* related issues such as availability, flexibility, variety and accessibility of courses and programs
- *cultural* issues, such as co-curricular options, social activities and religious opportunities
- *personal* issues such as housing, opportunities to earn money while studying and safety
- *achievement* related issues such as career placement and academic advising and assistance.

4.5.1 The availability of programs may influence students' choices

The first augmentation to the institutional product considered, is the availability of the academic program. The institution *chooses* to make its programs available (or not), or a government may determine the number of places that the institution may offer. Nevertheless, the availability of courses and programs within the institution may be considered in terms of the prospective students' ability to gain *access* to the course offering(s). For example, a course in medicine may be offered by an institution but it may only offer a limited number of places to students. In addition, the places may only be available to certain types of students or to those with certain types of qualification. Accordingly, while a student may wish to attend an institution to study a particular discipline, they may not be able to, as the course of study is not available to them (although it may be available to others). Thus, availability is not part of the core product but it does form part of the decision to attend.

Students choose courses that relate to their interests and future careers. The *availability* of programs that will facilitate the student's future career is therefore, of extreme importance. While this may appear self evident, only 45% of authors reviewed cited the availability of the program as instrumental in the decision (see Appendix B). This is probably due to the

fact that most of the literature discusses the American college and university system. It appears that students choose *institutions* rather than courses and careers in the USA. This may not be an accurate reflection of the situation. However, the process of choosing career \Rightarrow course \Rightarrow institution, as discussed earlier, presupposes that the institution involved has the course available. It seems surprising, therefore, that the incidence of academic program availability is not cited as of key importance in the majority of papers.

4.5.2 The flexibility of the program offering may influence students' choices

Another augmentation of the institutional product is the flexibility of delivering the academic program. The availability of accelerated learning opportunities (including the ability to transfer credits earned elsewhere), part time study options, external education, and evening classes all form part of a flexible service offering. Some institutions are more flexible than others and these may be sought out by students with needs for flexibility such as mature age or graduate students (see for example, Ashar and Lane (1996); Ashley (1996); Buckley et al. (1996); Coccari and Javalgi (1995); Webb and Allen (1994).

In addition, the trend towards enhancement programs undertaken by prospective students may mean that exemptions for prior learning will be increasingly important to the decision. This study shows that flexibility of offering may be a key choice criterion for many students (See Section 4.8 beginning on page 72).

4.5.3 The variety of the program offering may influence students' choices

A further augmentation is the variety of course offerings, which is somewhat linked to the availability of programs of interest to the student. However, availability is different to variety. The first implies that the institution has the offering and makes it available to the student. The second implies that there are a number of different programs on offer. Students looking for institutions with a wide variety of courses may not have a clear idea of career interest (Rice, 1987). Conversely, students may seek institutions with specialist program offerings such as business or liberal arts (Braxton & Nordall, 1985; Jonas, 1992). Therefore, a general institution may be more desirable than a specialist one. Furthermore, students may seek institutions with a general academic program, rather than a specialist one, because they wish to be associated with a broad range of students. In addition, an institution offering general courses may seem to be more flexible and more available. For example, if someone wishes to study business at Metropolitan University and he or she does not gain a place, they may apply for a generalist Arts degree and attempt an internal transfer to the business course. Thus, a broad range of offerings may be a desirable attribute in an institution.

However, students may not be able to evaluate whether or not an institution has a general or specialist program of study. Indeed, if they are interested in a particular course of study, they may not care about the institution's range of courses at all. They may perceive that the institution is a specialist one, simply because it offers specialist courses in some areas or because they are considering a specialised degree.

4.5.4 The accessibility of the program may influence students' choices

The accessibility of the academic program is also part of the augmented product of the institution. The courses may be available and of the right variety but this does not indicate that the student may be able to *access* the product. Processes that facilitate accessibility might include such issues as access to academic staff and staff student ratios (Edgett & Cullen, 1992; Widdows & Hilton, 1989). In addition, there may be considerations of class size and the number of students who attend the institution, which determines the level of access that students have to the academic programs (Cook & Zallocco, 1983; Discenza et al., 1985). Students may choose between the personalised attention and increased accessibility of a small institution or the larger set of opportunities available at a larger institution (Esteban & Apel, 1992).

However, there is no guarantee that students have a clear understanding of the actual size of the institution. They may develop their perceptions from the overall institutional size or from the campus on which the course they wish to enrol is located. Consequently, a student may choose a large university but a small campus.

4.5.5 The facilities offered by the institution may influence students' choices

Further augmentations to the institutional product may be the facilities provided by the institution. Facilities may be considered as both academic and non-academic facilities. Academic facilities are those which contribute to the academic standards of the institution, such as libraries, computers, class rooms, lecture theatres and audio visual equipment (see for example Jonas (1992); Kellaris and Kellaris (1988); Kleemann and Richardson (1985); Webb (1993); Webb and Allen (1994); Webb, Coccari and Allen (1996)). Non-academic facilities are those elements of the institution, which add value but which may be considered peripheral to the service (Shostack, 1977). Examples of these are parking, shopping, leisure, disability facilities, childcare options, and eating facilities (see for example, Coccari and Javalgi (1995); Discenza et al. (1985); Fooks (1995); Roche et al. (1987)).

In contrast to other studies it is argued here that, while these criteria may form part of the attribute set, they are not *key* criteria. It is assumed that prospective students would not trade off a proposed course of study for access to parking and sporting facilities.

4.5.6 Co-curricular activities offered by the institution may influence students' choices

In addition to availability, flexibility and variety of core offerings, an institution may also offer a program of activities in support of their product. Co-curricular (or extra-curricular) activities are those that are in support of the academic program although there may be subject or course credits for studying them. Co-curricular activities may be academic or non-academic in nature. The definition of 'co' simply means external or complementary to the major program of study selected by the student. Authors who assert that co-curricular activities are important to the decision to attend a particular institution are; for example, (Brown, 1991; Buckley et al., 1996; Kellaris & Kellaris, 1988; Witthuhn, 1997).³⁴

4.5.7 Social activities offered by the institution may influence students' choices

A further component in the augmented product of an institution is the social activities offered or available at the institution. Many authors suggest the social life and the social activities of the institution are key criteria in the decision to attend a particular institution (see for example, Boyer (1986); Bruwer (1996); Cook, Krampf and Shimp (1977); Cullen and Edgett (1991); Dehne (1995); Grace (1989); Litten (1982); Mullet (1985)). In some cases the quality of the social life extends to the opportunities to go into the local community and be entertained and therefore social life may be linked to the surroundings or location of the institution.

In addition, the social life extends to the institutional regulations surrounding the social activities (Mullet, 1985). Mullet suggests that students seeking a good time may choose institutions with lower levels of restriction of the students' social life. Although, not surprisingly, he finds a gap on this dimension between what parents would seek for their children and what the children would seek for themselves. The regulation and provision of social lives for students becomes essential in universities which are located in remote areas such as San Antonio (Yost & Tucker, 1995) where the opportunities for social activities beyond campus boundaries are very limited. However, in Australia, most institutions are located in major metropolitan areas and, while there are regional campuses, they are associated with relatively major urban/rural locations. Thus, social life for students is not as highly organised as in American institutions, although it might be equally as important to the students studying at Australian institutions.

³⁴ The opportunity to participate in religious activities is also cited as an influence in the decision to attend an institution. Roche, Peters and Nelson (1987) and Jonas (1992) found that the religious environment was important to the students in selecting an institution. However, in Australia, there is only one religious university (Australian Catholic University) and hence the decision is not likely to be strongly influenced by religion. Most Australian universities offer religious experiences for students from many religious backgrounds. However, unless the course of study is theology, it is not a major choice criterion. In addition, religion is not a selection criteria used by the institutions (Victorian Tertiary Admissions Centre, 1999). Therefore, religion, as a criterion for choice in Australian institutions, does not impact on the creation of an evoked set. However, if one were of a non-Christian religion, one might include the Australian Catholic University in one's inept set.

4.5.8 Housing arrangements offered by the institution may influence students' choices

The institution's core product may also be augmented by housing arrangements for those students who choose to live away from home to attend university. A relatively unique aspect of Australian institutions is the fact that most students remain living at home while they are studying (Winzar & Morley, 1994). Housing offered by Australian institutions is often limited to a few 'halls of residence' or 'colleges' and is not a major focus of the institutional services offered. Thus, while it is a criterion suggested by many authors (see for example, Boyer (1986); Brown (1996); Carnegie Foundation for the Advancement of Teaching (1986); Yost and Tucker (1995), it may not be a key criterion in the Australian context, except for those students who must live away from home in order to attend their university.

4.5.9 Job placement programs and career services offered by the institution may influence students' choices

An additional augmented service, which supports the institution's core product is a career service. Coccari (1995 p 34) found that career services provided by the institution were ranked 15th over all and 18th by business students in terms of their level of importance in institutional selection attributes. Webb and Allen (1994) found that it ranked 10th overall in the decision making of a diverse student group. The students who ranked it most highly were likely to be of Asian origin or International visa students. Career services is mentioned by many authors as a criterion (see for example, Dehne (1994); Sanders (1990); Sevier (1990)). However, more important to the prospective student is the ability to get a good job on graduation, which is assumed to be part of the product (Peterson's, 1996; Powlette & Young, 1996; Webb, 1993). It is argued that the school-leaver does not consider job *placement* programs as part of choosing their university. They choose the course, *assuming* that they will be employable as a result of their study program. Consideration of the process of becoming employed (transition to work) is left until the student has the potential to graduate.

4.5.10 Academic (course and subject) advising and assistance with study programs offered by the institution may influence students' choices

The augmented services offered by an institution may also include academic advising. Assistance with study and the provision of academic advice beyond the classroom, is a feature in the institutional choice process (Brown, 1991; Coccari & Javalgi, 1995; Dehne, 1993; Richardson & Stacey, 1993). Ashar (1996) suggests that for mature age students, particularly those returning to formal study after a long absence, assistance with study is very important. However, Widdows and Hilton (1989) indicate that high school leavers do not expect a large degree of advising and therefore it is not a key criterion for their choices. In addition, the studies which indicate that advising and assistance are important, are

recommending that prospective students ask about advice and assistance, rather than indicating that the students themselves are asking prior to being prompted (see for example, (Dwyer, 1993; Kleemann & Richardson, 1985; Peterson's, 1996-97). This is potentially due to the level of confidence that the students have in themselves. Those seeking to attend university are unlikely to believe that they'll need help with study once they get there (however much they might need it). The transition literature is replete with examples of students whose beliefs about themselves are challenged after embarking on a university degree. As school-leavers entering undergraduate programs are the focus of this study, this criterion will be excluded from further examination.

4.5.11 Safety on and off campus may influence students' choices

An augmentation to the core institutional product, which is potentially not directly controlled by the institution, but which may have an influence on institutional choice is the personal safety of the students who attend. In particular, an important influence for international students studying in Australia is their personal safety when on campus (Lawley, 1995). Mullet (1985) suggests that personal safety was ranked 9th in importance by the prospective students in their study and 8th in importance by their parents. It seems surprising that safety, as a criterion, is not mentioned by more authors, when Mullet published this finding in 1985/86. Since this time, authors citing safety as a criterion have been focusing on diverse populations (Coccaro & Javalgi, 1995; Harris, 1994) although Kellaris and Kellaris (1988) cited this factor in relation to students seeking the perceived safety of a religious study environment. Dolinsky and Quazi (1994) used personal safety as a criterion. However, they were conducting post enrollment satisfaction analysis, not assessing pre-purchase choice criteria. Thus, personal safety, as a criterion requires further investigation.

4.6 *Students consider aspects of the institution that are related to the institutions location*

The final major concept under discussion in this chapter is the institutional location. The location of the institution is cited in many papers, as it is often ranked the as the most important attribute students look for in an institution (see for example, Buckley et al. (1996); Chapman (1993); James et al. (1999); Jonas (1992)). When considering location, students may choose according to a number of dimensions.

First, there is the location of the campus, which may be in an urban or rural location or perhaps located in a large city. Students may choose to commute to university, particularly those living in a large city. Alternatively, they may choose to study in a rural environment (either on campus or living in housing nearby). A key question in choosing the institution to attend will be 'can I live at home?' If the answer is 'no' – then the options considered are enlarged. Included in this is a consideration of aspects of accessibility enter into the decision

to attend a particular institution. Accessibility consists of factors such as; the availability of transport to the campus, the distance the campus is from home (either close to or far away depending on the student) and the ease of getting home from the campus during breaks (Chapman, 1993; Litten, 1982; Maguire & Lay, 1981; Webb, 1993).

Second, the campus will have surroundings such as a local town or city. Surroundings might become important if the prospective student is looking for the opportunity to work during semester (Chapman, 1993; Marshall & Delman, 1984) or the opportunity to leave campus for recreational activities (Brown, 1996; Edgett & Cullen, 1992). Further, it might be important when considerations of safety arise (Sevier, 1994).

Third, there is the attractiveness of the campus. Campus attractiveness extends to the buildings, trees and landscaping as well as the overall upkeep of the facilities (Dehne, 1995).

Finally, each of these options, *commuting potential*, *work and recreation amenities* and *ambiance*, is chosen for individual reasons and students might trade off an unsafe environment for access to a prestigious institution (Sevier, 1994b).

4.7 Précis of criteria for preference discussion

To summarise the discussion so far; students potentially choose courses, and therefore institutions, which offer them life-altering prospects. However, they choose within a constrained choice environment. Student needs are potentially met by institutional offerings, which may be categorised as:

- ***Core educational product***; the student chooses reputation (and all that a reputation represents), the academic standards that the institution upholds, the admission criteria which supports the academic standards, the types of student who attend and the impact of the type of student on the study environment, the academic program, and the academic staff who support the program.
- ***Costs associated with attendance***; the student considers, fees, financial support, living away from home costs and the availability (or not) of student welfare.
- ***Amenities and processes of delivery (augmentation)*** of the core educational product; the student considers the way that an institution chooses to make their core product available to the student, such as availability, flexibility of offering and the variety offered. In addition, students may consider the support programs such as co-curricular offerings and social activities. They may also consider the availability of housing and career services.

- **Locational aspects;** such as whether or not the institution is in an urban or rural location. The style of campus and campus attractiveness as well as the accessibility of the campus via public transport.

The student trades off these ‘variables’ to best meet their self-perceived needs. In many circumstances, what is important to one student may be entirely unimportant to another.

For the purposes of this study, it is postulated that students primarily choose the institution for its academic programs and reputation and that other factors are *considerations* in the decision. Thus, students may constrain their evoked set to those institutions which appear to offer the ‘best’ course for them and which have an adequate reputation. Once the student’s evoked set is constructed, the student may then consider other variables in order to determine the institution which they will eventually attend. Further, it is argued that the concept of ‘best’ for the student is relative to their capacity to attend and their educational capabilities. Consequently, it is suggested that there is no single set of criteria that will be important to all types of student from all backgrounds.

4.7.1 Hypotheses

The preceding discussion highlights the existence of many potential differences between the literature and the higher education decision in Australia. However, a replication of existing studies would not answer our key question – are students operating as rational consumers in an open market system? In order to examine this question, we must first leave aside the issue of structural barriers to entry and examine if there are differences in students’ wants given that they are making choices, if limited ones. The four hypotheses that were eventually chosen as consequential to the answering of the question and which arose from the previous discussion were:

Students who have made an active choice regarding the best alternative for their future study could be expected to feel good about the institution that they eventually attend.

Thus:

H₄₁ Students at different institutions will perceive the reputations of their institutions positively

The Australian government promotes institutions as directly comparable ‘products’ and offerings. However, from a marketing perspective, it is unlikely that all students perceive all institutions similarly. Thus:

H₄₂ Different institutions will convey different image perceptions to their students

Students may not choose to attend an institution that they believe to be inferior even if the program of study is available and accessible. Thus:

H4₃ Reputation and admission criteria are potentially more important to the prospective student than program offering

Students who choose an institutional product can be expected to choose from a variety of options. However, it is anticipated that students enrolled at the various institutions will have actively chosen the institutions based on observable criteria. Thus:

H4₄ The criteria which are important to students varies with their choice of institution

4.8 Results

In order to examine the hypotheses, the following discussion is framed around the present study's results pertaining to each hypothesis. However, in the interests of presenting only pertinent information, much of the statistical detail is included as a supporting appendix (see Appendix D).

4.8.1 H4₁ Students at different institutions will perceive the reputations of their institutions positively

In order to examine this hypothesis, students were asked to place a mark on a visual scale (see Appendix C, Section 5.3). Each of the lines was coded 1 to 22 (including both anchor points). The original 22-point scale was collapsed into five categories³⁵ to facilitate input into the later structural equation models. Table 4-1 illustrates that students do view their institutions positively, with the majority of the responses skewed towards the 'excellent' end of the scale.

Table 4-1: Student's rating of their university image

<i>Code category</i>	<i>Frequency</i>	<i>Percent</i>
1 (poor)	1	0.2
2	8	1.4
3	55	9.5
4	332	57.6
5 (excellent)	180	31.3
Total	576	100
<i>Mean 4.18</i>	<i>Std Dev 0.66</i>	<i>Std Err 2.78</i>

More interesting than finding that institutions are viewed positively by their students, is the finding that more students (57.6%) rated their institutions as less than excellent. This is either a case of modesty (after all there are very few truly excellent institutions) or students have made a trade off between their capabilities and the institution's reputation. Thus, while they would choose an institution with a good reputation, it is not as good as they believe is

³⁵ 1-4 = 1 (poor), 5-8 = 2, 9-12 = 3, 13-17 = 4, 18-22 = 5 (excellent).

available within the market. Furthermore, there are students (10%) who choose to attend institutions whose reputations are less than good. These students are potentially those who were unable to get a place an institution with a good or excellent reputation.

Table 4-2 contains the composed reputation scale analysed by the institution of choice using ANOVA.

Table 4-2: Students' impression of the reputation of the institution of choice (ranked by mean)

	<i>Mean</i>	<i>Std. Dev</i>
Sandstone University	4.60	.52
Post War University	4.38	.55
Metro Regional University	4.15	.67
Flexible University	4.03	.63
University of Technology	4.02	.58
National Specialist University	3.79	.72
Other	3.87	.99
Total	4.18	.66

ANOVA Significant .000

Students at Sandstone University perceive the reputation of their institution to be excellent while students at National Specialist University perceive the reputation of the institution to be less than excellent. The standard deviation for National Specialist University would suggest that there are some students who believe the reputation of their institution is better than good, but that there are others who do not feel as positively about the reputation of their institution.

Thus, H4₁ is not accepted; not all students view the reputation of their chosen institution positively.

4.8.2 H4₂ Different institutions will convey different image perceptions

It is important for institutions to understand the underlying dimensions of institutional reputation and how each institution differs from others, in order to make sure that each student believes they have made the *best* choice.

In this thesis, an institution's reputation is proposed as a multi dimensional construct. It is considered to be an outcome of the activities of an institution. For the purposes of measuring the reputation of the various institutions, the scale developed by Traynor (1981) which measures an institution's image has been used (see Appendix C – Questionnaire). This is a semantic differential scale, which uses anchor terms that are personally meaningful to students such as traditional vs non traditional, known vs unknown. The full frequency data supporting the following chart is provided in Appendix D Section 5.4. The data were analysed using ANOVA by institution of choice.

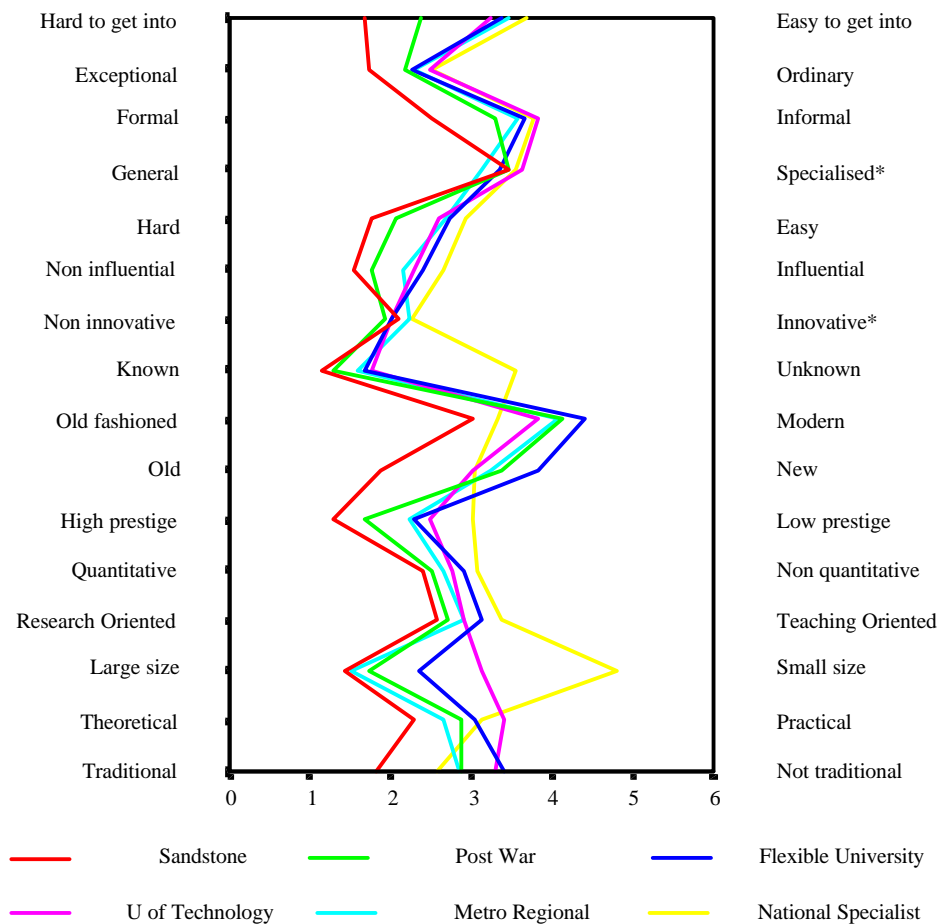


Figure 4-2: Students' perception of the image attributes of their institution

* Indicates results which were not significant at the 0.05 level. All other results significant at 0.000 level.

The results show that students have differing views of the image of their institutions. For example, Sandstone University students see their institution as hard to get into, exceptional and relatively formal. In addition, while they do not exactly see their institution as old fashioned, students at other institutions see their institutions as more modern than the students at Sandstone see their institution.

4.8.3 The underlying dimensions of image

The data were further analysed using exploratory factor analysis to determine if there are underlying dimensions to institutional image. Table 4-3 (over page) illustrates the results of the exploratory factor analysis.

Table 4-3: Rotated component matrix - Institutional image attributes

	Component				Alpha
	1 <i>Status</i>	2 <i>Style</i>	3 <i>Tradition</i>	4 <i>Approach</i>	
Prestige	.788				
Influence	.702				
Knowledge	.687		-.160	.369	
Size	.672			.421	
Easy/hard	.632		.391		
Admission requirements	.622		.227	-.173	
Exceptional	.620			-.192	.8214
Innovation		.704	-.419	-.376	
Quantitative		.680			
Research orientation		.540		-.197	.2954
Modern		-.240	.797		
Old			.718		
Tradition		.168	.661		
Formality		.324	.515		.6717
General		-.228		.734	
Theoretical		.212	.356	.453	.2699

Extraction Method: Principal Component Analysis; Rotation Method: Varimax with Kaiser Normalization, Rotation converged in 9 iterations.

Due to the item loadings on multiple factors, as indicated by the shaded sections in Table 4-3, the components were further analysed using Cronbach’s alpha to determine underlying covariance and reliability. However, the items in Factor Two - *Style* innovation, quantitative and research and Factor Four – *Approach*, were not reliably associated with each other (alpha .2954). Consequently, while there appear to be dimensions of image, the items used to identify the dimensions are not sufficiently differentiated from each other to be categorised within a single dimension.

Notwithstanding this result, by reviewing Figure 4-2, it can be seen, for example, Sandstone University students view their institution as both specialised and practical in the institution’s *approach* to curriculum. In addition, Sandstone University’s students see that the institution’s *style* is not innovative, while being quantitative and research oriented. Thus, it could be said that Sandstone University’s style is conservative in the eyes of its students. Furthermore, Sandstone University’s students see the institution as modern but relatively old, traditional and formal. The institution’s students also see Sandstone University as being high in *status* (prestige, influence, well known, large sized, and difficult to both study at and get into).

Conversely, National Specialist University students perceive their institution’s image as being relatively low in status. That is, it is easy to get into and study at, somewhat ordinary, relatively unknown and small sized. National Specialist University students also perceive that their institutions approach to curriculum is practical and specialised. Further, they

perceive that National Specialist University is relatively modern (although not new) and relatively informal.

Accordingly, H4₂ is not rejected; the various institutions do convey very different image perceptions to their prospective students.

4.8.4 H4₃ *Reputation and admission criteria are potentially more important to the prospective student than program offering*

The data used to examine this hypothesis were analysed using a one-sample t-test. The results indicate that the degree offering is the most important factor in the decision to attend a particular institution. Table 4-4 illustrates the criteria students ranked in the top five. The top five criteria are 1) the degree program offering, 2) location, 3) relevance of the degree to the students' career aspirations, 4) the image or reputation of the institution, and 5) job related outcomes.

Table 4-4: Criteria ranked in the top five for developing a preference (ranked by raw count)

<i>Criterion</i>	<i>Count</i>	<i>Percent of responses</i>	<i>Percent of respondents</i>
Degrees offered	318	13.0%	55.1%
Location	300	12.3%	52.0%
Relevance	263	10.8%	45.6%
Image or reputation	237	9.7%	41.1%
Job placement	210	8.6%	36.4%
Fees and costs	157	6.4%	27.2%
Attaining the right grades	130	5.3%	22.5%
Prestige courses	119	4.9%	20.6%
Exemptions	104	4.3%	18.0%
Educational facilities	95	3.9%	16.5%
Size	75	3.1%	13.0%
Social life	73	3.0%	12.7%
Part time	68	2.8%	11.8%
Prestige staff	63	2.6%	10.9%
Familiar	52	2.1%	9.0%
Extracurricular	28	1.1%	4.9%
Campus facilities	26	1.1%	4.5%
Easy to get into	26	1.1%	4.5%
Type of people	25	1.0%	4.3%
Difficulty	21	0.9%	3.6%
Safety	19	0.8%	3.3%
Financial aid	13	0.5%	2.3%
Access to shopping	12	0.5%	2.1%
Parking and sporting facs	11	0.4%	1.9%
Total	2445	100.0%	423.7%

All differences significant at the 0.000 level. One sample t-test

This result demonstrates that students in Australia may be more concerned with degrees than location and are also very vocationally oriented with three criteria relating to vocation/career and jobs being ranked in the top five. In addition, the results demonstrate that Australian students, whilst ranking image and reputation in the top five, do not rank image as more important than the degree program or location.

Thus, H4₃ is rejected when applied to the general population of Victorian university students.

4.8.5 H4₄ *The criteria which is important to students varies with their choice of institution*

In order to test this hypothesis, students were asked to rate on a five-point scale (1=not important 5=very important), the level of importance of particular criteria to the decision to attend the institution of choice (see Appendix C, Section 5.1). Table 4-5 illustrates the mean importance ratings analysed by the students' institution of choice. The bold figures represent the highest mean for each row item.

Table 4-5: Criteria mean importance ratings analysed by institution of choice (mean average)

	<i>Sand stone</i>	<i>Post War Uni</i>	<i>Flexible Uni</i>	<i>Uni of Tech</i>	<i>Metro Regional</i>	<i>National Specialist</i>
Degrees offered	3.68	3.71	3.73	3.61	3.86	3.68
Location***	3.44	3.55	2.92	3.47	3.74	3.93
Relevance	3.50	3.77	3.70	3.88	3.76	3.88
Image or reputation***	3.86	3.52	2.65	3.01	3.12	3.02
Job placement***	3.26	3.12	2.53	3.45	3.24	3.43
Fees and costs**	2.07	2.58	2.91	2.57	2.71	2.55
Attaining the right grades**	2.98	3.03	2.51	2.81	3.36	3.15
Prestige courses***	3.20	2.96	2.21	2.85	2.74	2.64
Exemptions***	1.77	2.20	2.72	2.46	2.40	2.05
Educational facilities	2.81	2.82	2.90	2.69	3.00	2.62
Size***	2.45	2.45	2.03	2.35	2.22	3.15
Social life**	2.85	2.44	2.25	2.48	2.78	2.69
Part time ***	1.46	2.00	2.67	2.44	1.93	2.20
Prestige staff**	2.86	2.60	2.27	2.64	2.91	2.70
Familiar	2.61	2.46	2.14	2.39	2.31	2.19
Extracurricular***	2.51	2.18	1.84	2.14	2.38	2.44
Campus facilities***	2.62	2.42	1.90	2.08	2.66	2.36
Easy to get into**	1.56	1.73	1.78	2.06	2.16	1.85
Type of people*	2.44	2.19	1.89	2.21	2.26	2.30
Difficulty	2.24	2.19	2.19	2.27	2.29	2.10
Safety	2.05	2.29	2.04	2.35	2.34	2.40
Financial aid	1.69	1.82	1.78	1.92	1.84	2.13
Access to shopping***	2.06	1.72	1.52	1.99	2.17	2.17
Parking and sporting facs**	1.98	1.88	1.78	2.15	2.41	2.36

*** Significant at the 0.000 level, ** significant at the 0.01 level, * significant at 0.05 (ANOVA)

The discussion will be limited to those factors that have a rating of at least three on the five-point scale. Ratings of less than three may be influential. However, the most important

factors will be those that rate more than the arithmetical midpoint of 2.5 on the five-point scale.

4.8.5.1 Criteria considered most important to Sandstone University students

Students who are enrolled at Sandstone University consider the image or reputation of the institution to be the most important attribute they consider when choosing between institutions. The degree programs, relevance of the program to career outcomes and location, then follow image and reputation. Hence, while not *all* students choose image and reputation over degree program (Hypothesis H₄) it appears that it is more important to Sandstone University students. Sandstone University students also consider job placement and prospects and the prestige of their courses to be important criteria in their choice of institution.

4.8.5.2 Criteria found to be important to Post War University students

Post War University students nominated the relevance of the degree program to their career choices as the most important criterion, followed by the degrees offered and the location of the institution. Post War University students also thought image or reputation was important to their choice but rated it less important than these other criteria. Job placement and prospects were also important to Post War University students. However, another also important criteria, was that of attaining the right grades to get in to the institution. Thus, it appears that applicants to Post War University are concerned with the admission standards of the institution while Sandstone University students are not as concerned.

4.8.5.3 Criteria found to be important to Flexible University students

Flexible University students nominated degree offering and relevance to career as most important to their choice. No other criteria were considered important enough to rate a 3 on the five-point scale. This is not surprising considering break down of type of enrolment and type of student. Further, while location is an important issue to full-time, on-campus students, it is not as relevant to students studying by distance education.

4.8.5.4 Criteria found to be important to University of Technology students

University of Technology students rated relevance to their chosen career as the most important criterion in their choice of institutions. Following this criterion were degrees offered and location. Job placement and career prospects was rated fourth most important and image and reputation rated fifth.

4.8.5.5 Criteria found to be important to Metro Regional University students

Metro Regional University students considered more criteria as important to their decision than other institutions' students nominating seven criteria three or more on the five-point scale. The first rated criteria was degree offering, second was relevance to their chosen

career and then location. Location is important to Metro Regional University students because of the regional nature of some of their campuses. Attaining the right grades to get in was rate fourth most important to the decision at attend Metro Regional University. Interestingly, Metro Regional University students rated this as more important than job placement and career prospects, indicating that in some cases, students at Metro Regional University may choose a course which will allow them to enter the university system rather than a course which will provide them with a direct career path. Metro Regional University students also rated image as important, although it is rated sixth. Metro Regional University students were the only group of students who considered the educational facilities of the institution as important to their choice. However, the difference between students' ratings on this criterion was not statistically significant.

4.8.5.6 Criteria found to be important to National Specialist University students

National Specialist University students considered the location of the institution as most important to their decision. This might also be influenced by the relative importance of access to the local shopping facilities that are associated with National Specialist University's campuses. National Specialist University students also rate the degree offering and job placement as important to the decision with a rating of 2nd and 3rd respectively assigned to these criteria. Attaining the right grades to get in is rated 4th. Institutional size is rated 5th and National Specialist University students are the only students to rate size in their most important considerations. Contrasting this with the results relating to institutional image (Figure 4-2 p74) it would appear that National Specialist University students are looking for a small institutional size and that they consider this size important to their decision. National Specialist University students also think institutional image is important ranking it 6th overall.

Consequently, Hypothesis H4₄ is not rejected; there are significant differences in criteria of choice between students attending their institutions of choice.

4.8.6 The underlying dimensions of students' choice criteria

Table 4-6: Rotated Component Matrix - Student's criteria for preference

	Component			
	1	2	3	4
Extra curricular activities	.795			
Parking and sporting	.768			
Shopping	.752			
Campus facs	.745			
Social opportunities	.734			
Type of people who attend	.575	.507		
Safety on campus	.574			.398
Size of institution	.518		.358	
Educational facs	.411	.390	.336	.286
Hard to study	.395	.362	.301	.281
Prestige of course		.756		
Image or reputation		.729		
Prestige of staff	.371	.729		
Familiar with university	.323	.404		
Relevance to career			.722	
Location	.322		.635	
Degrees offered			.604	
Attaining the right grades	.358		.600	
Job Placement	.359	.334	.535	
Part time study				.757
Exemptions				.658
Fees				.552
Financial aid	.457			.548
Easy to get into	.334	.237	.155	.352

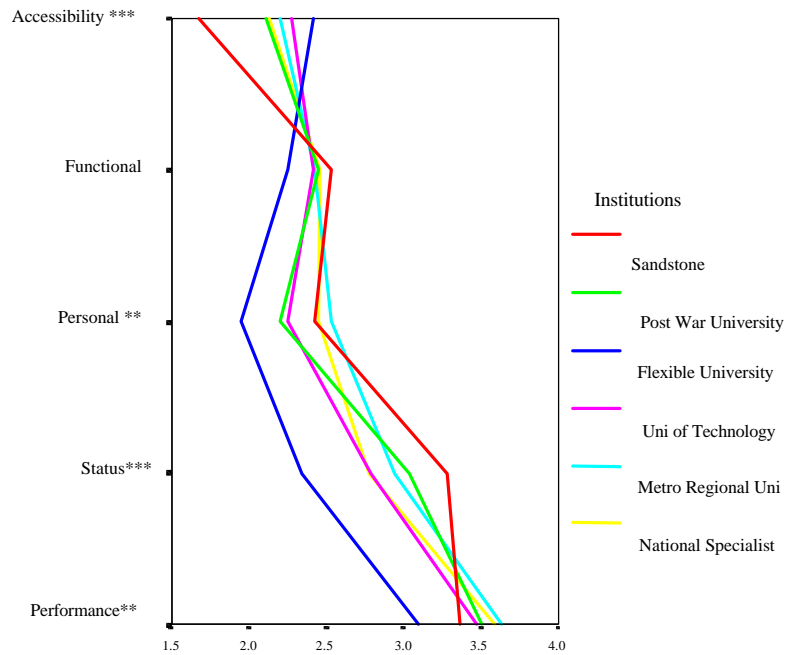
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. a
Rotation converged in 7 iterations.

In reviewing Table 4-6, it can be seen that a number of criteria are significantly related to each other on a number of dimensions. The shaded rows indicate variables that load significantly on more than one dimension. As a consequence of these multiple loadings, the relationships were further analysed using Cronbach's alpha in order to determine the underlying co-variance structure reliability. This resulted in a five-factor solution with higher inter-item reliability and alphas over 0.60.

Table 4-7: Reliability coefficients for underlying dimensions of students' criteria for preference

Dimension	Items	Alpha	Standardised Alpha
Personal	Safety on campus	.8912	.8927
	Shopping		
	Parking and sporting		
	Social opportunities		
	Campus facilities		
	Extra curricular activities		
Functional	Type of people who attend	.7669	.7688
	Size of institution		
	Hard to study		
	Familiar with uni		
	Educational facs		
Performance	Attaining the right grade	.7729	.7728
	Degrees offered		
	Job Placement		
	Relevance to career		
	Location		
Accessibility	Exemptions	.6374	.6445
	Part time study		
	Fees		
	Financial aid		
	Easy to get into		
Status	Prestige of course	.8105	.8121
	Prestige of staff		
	Image or reputation		

These five factors were further analysed by the student's institution of choice. Figure 4-3 contains the results of the dimensions analysed by institution of choice.



*** Significant at the 0.000 level, ** significant at the 0.01 level, * significant at 0.05 (ANOVA)

Figure 4-3: Dimension of student's criteria for preference

The influence of each of the major groups on criteria for preference was then analysed using confirmatory factor analysis (AMOS). The results are indicated in Figure 4-4.

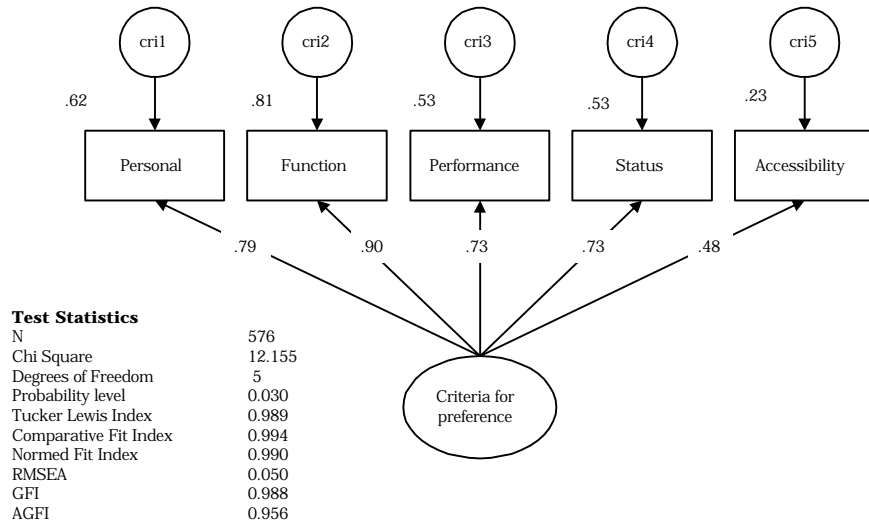


Figure 4-4: Structural equation model of criteria for preference

The results demonstrate that the model indicated in Figure 4-4 is acceptable within this cohort of students. The factor loadings indicate that apart from accessibility criteria, all dimensions contribute to the variance in the students' criteria for preference. In all cases other than accessibility, the squared multiple correlations are greater than 0.30, which is the minimum acceptable level for inferring that the variance in the model is explained by that factor (Sharma, 1996). Functional criteria make the strongest contribution to the variance with a factor loading of 0.90 and a squared multiple correlation of 0.81. Whilst factors with loading close to 1 are desirable, factors of over 0.50 are practically (if not statistically) significant (Hair, Anderson, Tatham & Black, 1995). Consequently, while little of the variance in the model is determined by accessibility criteria, it should not be discarded entirely. Indeed, within the Sandstone University cohort of students, it would appear that increasing accessibility would be a negative factor in the decision (Figure 4-3).

4.9 Discussion

<i>Hypotheses</i>	<i>Findings</i>
H4 ₁ Students at different institutions will perceive the reputations of their institutions positively	Rejected; some students did not perceive the image of their institutions in a positive light. Indeed, some students rated the reputation of their institution as poor. This confirms the idea that students are chosen by their institutions rather than making an active decision to attend the institution.
H4 ₂ Different institutions will convey different image perceptions	Not rejected; the different institutions students had internally consistent (within the university) but varied (between universities) images of their respective institutions. Education is, therefore, not an homogeneous product in the eyes of the consumer.
H4 ₃ Reputation and admission criteria are potentially more important to the prospective student than program offering.	Rejected; when examined at the aggregate level, the results show that students <i>in general</i> do not rate reputation and admission criteria more highly than program offering. However, students at <i>selected</i> institutions do rate reputation and admission criteria more highly than the academic program.
H4 ₄ The criteria which are important to students vary with their choice of institution	Not rejected; The criteria that are most variable within the student cohorts are those which relate to how the educational product functions for the student. Functional criteria are the educational facilities, the type of people who attend, the degree of difficulty of the academic program, students familiarity with the institution and institutional size. The least variation in students' requirements is in institutional <i>accessibility</i> criteria.

In conclusion, the key variables involved in Victorian students' choice are not location or costs associated with attendance but product availability and accessibility. Furthermore, Victorian students are more interested in the outcome of the educational experience (career path and employment prospects), than they are in the educational product itself. While these might not be mutually exclusive (a quality education might lead to a quality career), the implication for marketers of institutions is that they must understand and value their prospective students' career aspirations in order to attract the student to both the institution and the courses. It may not be enough to provide access to the educational product; institutions may have to explain the relevance of the product to the proposed career paths of the students.

In addition, Australian students are concerned with admission requirements as one of the most important criteria considered in their choice. "I will choose the university that chooses me" is a heuristic used by the student in developing their evoked set. As such, the institutions within the evoked set of students must compete, not only in terms of providing a desirable educational product; but also in terms of making it as accessible as possible. However, bearing in mind the potential impact of increased accessibility on the primary demand of high calibre students (Hughes, 1994), any increase in accessibility is likely to be accompanied by a decrease in desirability (Vigneron & Johnson, 1999). This phenomenon is

illustrated particularly when one considers the students who choose (or are forced to choose because of no other available options) to attend institutions that they believe have less than excellent reputations (compare Table 4-2 and Figure 4-2). One would think that dissonance-reducing behaviour would ensure that all students believed their institution is excellent and this is clearly not the case.

In reviewing the literature on *why* students choose institutions, it is possible to believe that the entire spectrum of criteria is important (and it may be to greater and lesser degrees). However, it is clear that the cohort of students entering university in Victoria in 1999 were not substantially interested in factors other than the degrees offered; including career related outcomes, the location of the institution, the image or reputation and accessibility of the institution; including entry criteria and costs. Thus, much of the current marketing expenditure associated with attracting students to the more tangible aspects of the institution is not as fruitful as it might be.

Moreover, aspects of the institutional product which have been demonstrated to be important to the USA and UK market for higher education are largely irrelevant to the cohort of students examined here. For example, *social life* is more important to Sandstone University students than others. However, when this result is combined with the response to the *type of people who attend*, it is clear that Sandstone University students are not necessarily considering the 'playful' aspects of social interaction, more likely it is the potential social and cultural experiences they derive from attending Sandstone University.

Finally, while Victorian students appear instrumental and career focussed, they are also likely to use intangible image factors to evaluate their institutions. The reliance on credence factors for choosing between institutions is likely to lead to greater levels of interpersonal search. The following chapter addresses the issues of information search behaviour of Victorian university students. It also begins the discussion of *how* students choose between institutions.

5.1 Introduction

The previous chapters have examined the university choice environment and the reasons prospective students prefer one institution over another. This chapter focuses on the information search activities of prospective students in choosing an institution to attend. It is the first of the three chapters aimed at demonstrating *how* people choose an institution. The shaded area of the diagram illustrates the current focus. The purpose of this chapter is to present the arguments relating to *how* prospective students search for information in the process of choosing a university.

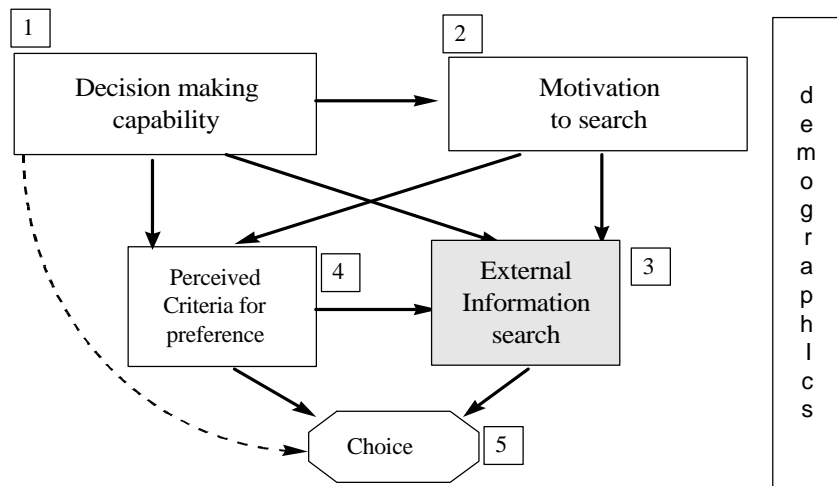


Figure 5-1: Hypothetical research framework – Information search activities

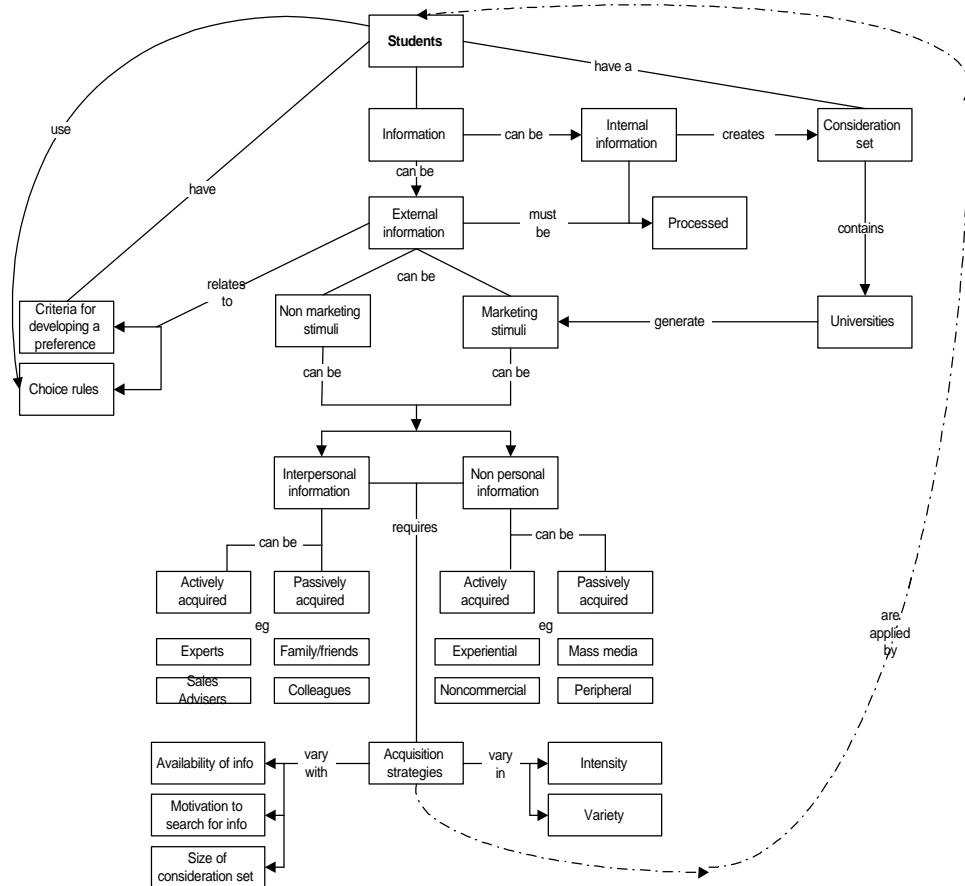
External search for information is a problem solving strategy employed by a prospective student in the decision-making process. Before students search for information in order to solve their decision-making problem – which university shall I attend? - The student must first recognise that information search will be beneficial to the problem-solving task. In addition, the student must believe that they are capable of solving the problem (decision-making capability) and must be motivated to search for appropriate information.

Consequently, the decision-making capability of the student and their motivation to search for information are hypothesised to be antecedent to information search activities. However, the structure adopted for this thesis has been to present choice outcomes before antecedent constructs, as this structure facilitates the synthesis of the literature for educational choice into the consumer behaviour literature. Therefore, this chapter has two major components: firstly, the consumer behaviour literature relating to information search activities is presented. Secondly, the literature associated with educational choice information search and

sources of information is discussed. Finally, the findings of the research are presented and explained.

5.2 Concept map of students' information search behaviour

The following diagram represents the conceptual coverage of this chapter. The map is best interpreted by commencing at the box that says **students** and working down the page unless the arrows indicate a direction. The map indicates connections between the concepts discussed here and earlier chapters. The map is not intended to represent a series of hypotheses.



Conceptual map 5-1: Students' information search activity

Consumers facing purchase decisions obtain information about products and services from interpersonal sources and non-personal sources. When purchasing *products* the search qualities are relatively high. Most tangible products can be evaluated prior to purchase, thus search for information and evaluation of alternatives is relatively easy. However, *services* are high in experience or credence qualities (Zeithaml, 1981). Education is a service very high in

credence qualities, which places it at the upper end of Zeithaml's (1981) continuum. Credence qualities are very hard to determine in the search process. Indeed, in many cases, the consumer is never able to evaluate the quality of the service, even after experiencing the service many times. Thus, search for information in the educational choice domain requires special consideration.

5.3 Students' information search behaviour

People facing purchase decisions search for information in two ways: internal information search and external information search. Internal information search is memory based and relies on the consumer's prior experience with the product or their previous information search activities (Sheth, Mittal, & Newman, 1999). External information search is concerned with how the consumer acquires new information for a particular purchase decision (Beales, Mazis, Salop, & Staelin, 1981). This thesis is concerned with the *external* information search activities of prospective students. Therefore internal information search will not be considered further.

5.3.1 Students' may undertake passive versus active search

External information search represents a motivated and conscious decision by the consumer to seek new information from the environment (Furse, Punj, & Stewart, 1984; Murray, 1991). Therefore, external search is an *active* process designed to assist the consumer with a purchase decision task and as such, is goal directed (Dickinson, 1982). However, information may also be acquired passively over an extended period of time (Krugman, 1965; Krugman, 1977). For example, Houston and Rothschild (1978 p 185) propose that information search and acquisition are "*the active and passive processes by which product related information is sought and/or acquired.*" This definition recognises that not all information search is active in nature. Consumers can (and do) collect information which has no immediate use in a decision-making task (Carlson, Walsh, Laczniak, & Grossbart, 1994; Dickinson, 1982). Dickinson also argues that consumers have a tendency to collect information continuously. Furthermore, consumers who collect information for a specific decision-making task immediately before purchase, show lower levels of planning overall. Thus, an intense information search process might be indicative of a disorganised (rather than a highly interested) consumer.

Consequently, it is argued for the purposes of the present study, that prospective students may be categorised as passive or active searchers for information relating to the decision to attend university. Students who have collected information continuously in an active or passive manner may not collect further information. Those students, who decide further information is necessary in order to make a decision, may conduct an intense search over

varying periods of time. The more intense and short term the search process, the less likely the student will have sophisticated search strategies. Therefore, the earlier students decide they will attend university, the more refined their choice will be. However, students who have made up their minds early may not seek further information outside the existing consideration set.

5.3.2 Students' consideration set construction

Students do not only need to decide to attend a course and a university. They need to decide *which course* and *which university*. Therefore, once the prospective student has determined that they wish to attend a course at a university, the information search process begins (Rosenfeld & Peng, 1980).

Not all universities may be equally acceptable to the prospective student. The student must construct a consideration set of institutions. Sheth, et al (1999) posit that the construction of a consideration set is in three stages.

1. The *awareness set* consists of those universities of which the student is aware. However, the student may not have them 'top of mind' when constructing their preferences
2. The *evoked set* consists of those universities that the student remembers at the time of decision-making. The evoked set may also include institutions that the student would *not* attend - these would be consigned to the *inept set* (Belonax & Javalgi, 1989)
3. The *consideration set* is those institutions which the student would actually consider attending and from which they would seek information.

Accordingly, students' consideration sets are formed over time and may not contain all possible alternatives. It is argued in this thesis that the consideration sets of students will show a relationship between the institutions that a student actively considers in the choice process. Furthermore, it is argued that the institutions from which a student collects information will also be related but may not be represented by the institutions in the active consideration set.

5.4 ***Antecedents to students' active information search activity***

In order for consumers to be motivated to search for information that will assist them in their decision-making task, they must first believe that the information will be useful (Duncan, 1982). In addition, they must believe that information is available and accurate (Moorthy, Ratchford, & Talukdar, 1997). Furthermore, the consumer must also believe that they will be able to evaluate the information they gather (Maute & Forrester, 1991). Arndt (1967) suggests that in some cases the consumer does not seek information or deliberate upon the information that they already possess, as they are not confident of their decision-making

capability. Arndt (p 209) likens this to ‘a state of panic’ in which the consumer escapes from the enormity of the problem by purchasing the first product in his/her evoked set, thereby circumventing further decision-making. This is supported by Shugan (1980) who found that the greater the degree of self-confidence in the consumer’s ability to meet the demands of the decision-making task, the more likely the consumer was to undertake external information search. This elusion of the information search process is particularly evident in high credence quality services where the decision is considered highly important (Maute & Forrester, 1991).

Maute and Forrester (1991) argue that consumers will rely on search and experience qualities to evaluate a product unless they are very confident of their decision-making capability. In addition, they contend that consumers who are not confident of their decision-making capability will not seek information relating to credence qualities of a service. They say:

Only the most knowledgeable and determined consumers possess sufficient expertise to support an informed evaluation of credence qualities information (p 647).

Maute and Forrester argue that this form of information seeking is rational (although they concede that it would appear not to be). They suggest that a consumer’s propensity to seek information is related to the consumer’s weighing up of the potential costs and benefits of search behaviour. However, it is argued that *affective* considerations such as the perceived risk associated with purchase are not rational in the economic sense (Dabholkar, 1994). Dabholkar argues that affective components are often difficult to build into multi-attribute models that are based on the consumer as a rational decision-maker.

5.4.1 Students may trade off the perceived costs and benefits of search

An important antecedent to information search activity is consumers’ motivation to search for information. Consumers are problem solvers and may only search for information if they have a decision-making problem to solve. Thus, external information search is greatest in complex decision-making tasks (Payne, 1976; Shugan, 1980). The choice of an educational institution is considered to be a complex decision-making task due to the high risk and high credence nature of the product.

However, the student who is motivated to search for information would only search for further information if they did not have sufficient information with which to make a satisfactory decision (Brooks, 1957). Prospective students may undertake external information search if they believe that the benefits of search outweigh the costs of search (Schmidt & Spreng, 1996). Hence, external information search is initiated when the student

believes that they do not have sufficient information and they will benefit from searching for more information.

In some circumstances, purchase decisions are made with a single brand in the consideration set (Houston, 1984). The student who has the capacity and the capability to attend the institution of first choice may not search for information regarding alternatives. Duncan (1982) found that if there is a clearly differentiated and superior alternative, consumers did not search for information. In addition, Consumers may not search if they perceive low levels of difference between the offered alternatives (Duncan, 1982; Maute & Forrester, 1991). Consequently, search may follow a U shaped curve when consumers perceive differences between products. For prospective students; external information search regarding universities may only be undertaken if, a) they believe that the universities are essentially different to each other and, b) if they have not decided that there is already a clearly superior alternative.

External information search expands the number of brands in the consideration set (Dickinson, 1982). Therefore, consumers wishing to *decrease* the size of their consideration set in order to facilitate a less effortful decision-making process, may not seek further information regarding multiple alternatives. In these circumstances, there is no external information search activity as the consumer is not concerned that their level of information is inadequate. Thus, it is quite possible for a decision to be made where a student has not conducted *any* prior search for information relating to the decision.

5.5 *Students have available to them a variety of sources of information*

The literature implies that once a consumer has constructed their consideration set, determined a set of attributes that will be important in evaluating alternatives and decided that they require more details before making a choice, they will search for information from a variety of sources. This may or may not be true in the higher education setting. However, this series of steps will be assumed to be followed by students as consumers of the educational product.

Cox (1967) suggested three basic forms of information available to consumers: *marketer dominated* communication channels, *consumer dominated* channels and *neutral* sources of information. Each of these sources of information provided different benefits to the consumer and is associated with various costs of collection of information.

Marketer dominated (marketer controlled) information is commercial (and usually persuasive) in nature and is more easily accessed by the consumer. However the cost of such an easy search strategy is the consumer's perception that the information is not reliable or

trustworthy (Arndt, 1967). Thus, most consumers search beyond the information provided by the marketers of products.

Consumer dominated information is informal in nature and may be as easy to access as asking family or friends (Arndt, 1967; Cox, 1967). However, it may be difficult to obtain, particularly if the decision is relatively high risk and an expert or opinion leader is necessary to provide sufficient information for the decision-maker (Beal & Rogers, 1957).

Neutral sources of information are those sources which are neither consumer dominated or marketer dominated such as consumer reports and media articles (Cox, 1967). Cox argues that consumers may not use all sources of information in a purchase decision task and may choose to minimise search effort when the risk associated with purchase is small. However, as the risk associated with educational choice may be an important factor, it is hypothesised that all students will undertake a relatively high level of external information search.

Beales (1981) expands on Cox's (1967) original categorisation of information sources and adds direct inspection of the product to the typology of information sources. This is consistent with the later findings reported by Furse et al. (1984). They found that there were five dimensions of search:

1. Store visits - number of visits and time spent on visits indicating intensity of search
2. Cognisance of advertising message - number of advertising messages perceived and sources of advertising messages
3. Use of independent others to facilitate decision-making – recognising that many decisions are not undertaken in isolation of others and indeed, some decisions are delegated entirely.
4. Use of interpersonal sources of information – word-of-mouth
5. Use of product related experiences – trial, purchase, or reviews

This classification, while building on Beales' work, does not recognise the difference between personal and non-personal sources of information. Personal sources of information are those that are collected from interpersonal contact. Non-personal sources of information are often commercial sources of information but may also be third party sources. Murray (1991) found in services marketing situations, personal sources of information were more important and considered more reliable even if the personal contact is a sales person.

Accordingly, there appear to be four major types of information of interest in educational choice: 1) product related experiences, including campus visits and observations, 2) interpersonal sources of information, such as family and friends, also including sales personnel, 3) independent 3rd parties, such as experts and careers advisers, and 4) commercial sources of information which are non personal in nature. The influence of these sources of information on student decision-making is discussed in the following sections.

5.5.1 Students' experiential information sources

Experiential sources of information are those sources of information to which the student has direct and personal access. In addition to open days and formal marketing directed experiences, a student may also have university-related encounters throughout their high school years. For example, accelerated learning programs often involve the student in university life before they are actively seeking a university to attend.

Personal experience has been found to be instrumental in purchase decisions as it is seen to be the most reliable and unbiased source of information available to a consumer (Maute & Forrester, 1991). However, (Duncan, 1982) suggest that if consumers believe they are unable to judge the product's attributes, they may bypass personal inspection and rely on word-of-mouth or other sources of information. Thus, while personal experience of the product or service is important in the decision-making process (Tellis, Gaeth, & Clark, 1985), inexperienced or unconfident consumers may rely on other sources of information. Students may find that they can readily evaluate the search qualities of an institution through experiential information. However, they may use interpersonal word-of-mouth to access information regarding the credence qualities of the institution. As credence qualities represent the highest levels of social and affective risk, seeking social support for these qualities is also important.

Direct inspection of the product is difficult with a service product because of their experiential nature (Murray, 1991). University *buildings* and *facilities* may be inspected but the university, as a *product* may not be trialled prior to purchase except in special circumstances. The intangibility of both the educational product and the potential outcomes of education make an inspection of the institution exceedingly difficult. While, the majority of interaction with the university may be through attendance at an open day (or similar events). The nature of open days is persuasive and marketer dominated. Hence, much of the information gathered through these experiences may be discounted. Overt selling and advertising threatens the consumer. Thus, the advertising message is often rejected by the consumer in favour of word-of-mouth (Dichter, 1966).

In addition, inspection of consumer goods is often used for screening (Beales 1981) and thereby excluding these products from further information search activities. In educational choice, it needs to be determined if inspections (campus visits) are used as a screening device or are they the culmination of search for other information. The impact of a campus visit on university choice is very strong (Yost & Tucker, 1995). However, it is not known if attendance is part of an active information search process, and prospective students are persuaded by what they see, or if a campus visit is a mechanism for familiarising the student with the institution that they have already decided to attend. It is expected that attendance at open days will be positively correlated with attendance at the institution (Yost & Tucker,

1995). However, it is quite possible that students may not have attended an open day at their current institution as part of their information search activities.

Students who are unable to access experiential information of their own, may seek information from others with similar experiences. According to Zeithaml (1981) consumers may obtain experiential information vicariously from others with prior experience. Consequently, we may expect students to seek information regarding the university from others who attend. However, if a student attending Sandstone University is not available for discussion, a student from Metro Regional University who knows someone from Sandstone University may be used as a proxy for experiential information. Thus, information gathered in this manner is likely to be both vicarious and imprecise. However, while this information is even less reliable than advertising, it is seen as more credible and therefore more acceptable.

In conclusion, it appears likely that personal experience contributes significantly to a prospective student's decision to attend a particular institution. However, some students may not be persuaded by marketer-dominated information such as open days. It is expected that students primary source of information for the university choice decision may be interpersonal sources of information.

5.5.2 Interpersonal sources of information that may be used by students

Interpersonal sources of information are those informational sources where social *interaction* takes place between two or more people (Beal & Rogers, 1957). Hence, it is quite possible (although not probable) for a student to visit an institution on an Open Day (experiential search) and not interact with the university's personnel.

The most active interpersonal search process may be undertaken when the product is highly visible (Mowen, 1990), when the product is highly complex (Payne, 1976) and when it cannot be easily evaluated (Haywood, 1989; Murray, 1991). Interpersonal search is undertaken at the *evaluation of alternatives* stage of the decision-making process (Arndt, 1967) (see Figure 1-1 Chapter One). Students who are actively seeking interpersonal information are looking to either increase or decrease the size of their consideration set (the number of alternatives to be evaluated). In addition, they may be attempting to reduce their perceived risk of purchase by seeking social support in the framing of their decision alternatives (Arndt, 1967). Consequently, the nature of the decision should lead students to be heavily reliant on interpersonal search.

The level of influence an interpersonal source of information may have on the decision is affected by the prospective students susceptibility to interpersonal influence (Bearden, Netermeyer & Teel, 1989). The more a consumer is susceptible to interpersonal influence,

the greater the tendency to use peer preferences in evaluating products (Mochis & Moore, 1979). However, susceptibility to interpersonal influence does not moderate the influence of *levels* of interpersonal information seeking. Although this is counterintuitive, it suggests that *most* consumers rely on word-of-mouth as part of their decision-making strategy (Fitzgerald Bone, 1995). However, it has been found that susceptibility to interpersonal influence may influence the *type* of information sought and the sources used in the decision-making process (Bearden et al., 1989). Susceptibility to interpersonal influence is discussed further in Chapter Seven – Decision-making capability.

Consumers who are susceptible to interpersonal influence may be expected to seek information more intensively from interpersonal sources. However, interpersonal search may be *informal* (friends, family, neighbours, relatives, etc) or *formal* (agents, experts, paid advocates and advisors). It is argued in this study that informal sources of information are more easily accessed by prospective students and are therefore more heavily utilised in the decision-making process. In addition, informal sources of information are applied to more often when the consumer perceives a high degree of risk (Arndt, 1967). Formal sources of interpersonal information are less easily accessed. However, formal sources may be more believable if the product is perceived to be highly technical (Moorthy et al., 1997). Accordingly, it is postulated that students who believe the educational product is complex may seek more formal sources of information.

5.5.2.1 There are degrees of influence for students' interpersonal sources of information

There are degrees of influence with word-of-mouth referral groups (Haywood, 1989; Johnson Brown & Reingen, 1987). It is argued that family and friends represent the strongest relationship ties (and therefore influence on decision-making). Furthermore, family and friends are perceived as having the greatest degree of source credibility and their advice is much more believable. The weakest ties are those people who may be acquaintances and not closely associated with the product or service, therefore their opinion is not sought in the beginning in relation to the decision-making task. For prospective students, this is likely to mean that the primary source of interpersonal information may be family and friends, followed by those closely associated with the student such as teachers, and other colleagues from school. Other sources of information might be those associated with universities, such as staff and students. Interpersonal sources of information may also be associated with the career outcomes of the student.

Consequently, in university choice, it is argued that there may be levels of interpersonal search intensity characterised by extent of search at its lowest when the sources of interpersonal information are most informal. The highest extent of search may be when the sources of information are experts and opinion leaders. The number of sources used will be used to indicate the extent of search. Figure 5-2 illustrates this hypothesis.

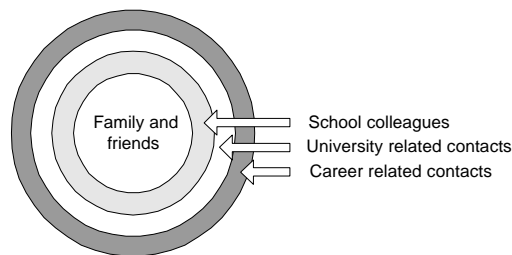


Figure 5-2: Level of influence and extent of search of prospective students

5.5.3 Students may use independent sources of information

It is possible that students seeking expert opinion may not always use interpersonal sources of information. Some formal sources of information may be external to students' close friends and colleagues from school and are therefore considered independent from the student. Independent and formal sources of information may be both personal and interpersonal sources of information. However, for the purpose of creating mutually exclusive categories of information, this thesis classifies the sources of information used into independent, commercial and interpersonal (formal and informal).

Independent sources of information are those sources to which the student has access, which are not commercial in nature and are not interpersonal. These sources are for example, 'how to' guide books, course information booklet, informative materials provided by others and independent Internet information³⁶.

Seeking this type of information costs time money and effort for search (Beales et al., 1981). However, as the risk of purchase increases, the potential costs associated with lack of information increase. Thus, information search from independent information sources may increase with high-risk products (Dowling & Staelin, 1994). Independent information is more likely to be referred to in a high credence service, where the consumer is unable to effectively evaluate the product (Beales et al., 1981). In these cases, the consumer is minimising the risk associated with purchase by seeking independent and expert information.

However, in some circumstances, the consumer may be unable to evaluate the information provided, particularly if the information is of a technical nature. As a result, students may be expected to seek independent sources of information at a greater rate if they are highly

³⁶ The Internet as a source of information can consist of both advertising material (provided by the sponsoring organisation) and independent information. Due to the nature of the information provided by Australian universities (cf. Australian Catholic University (1999); Monash University (1999)), this category has been included as non-commercial, as its purpose it is not designed to *persuade* the individual decision maker. In addition, while there is a great degree of advertising material available on the WWW, there is a commensurate amount of non-commercial information. It is assumed that in seeking information from the Internet, prospective students would seek relatively non-commercial data. They would be well aware of the bias attached to overt advertising messages (Mascarenhas & Higby, 1993).

involved in the decision and they believe that they cannot rely on their other sources of information.

In addition, independent sources of information may be too general to be genuinely useful (Beales et al., 1981). Students with very specific needs may not have enough information provided by a handbook that describes everything in general terms. For instance, a star rating system such as that provided by the Good Universities Guide overlays a system of criteria which may not match that of a particular student (The Australian, 1999). For example, the high achieving student may prefer a relaxed environment to study but the guide may implicitly assume that students with high levels of achievement may wish to continue an accelerated pace of learning. Thus, general careers or information guides may not meet the information needs of an individual student. The level of usefulness of these sources of information needs to be examined in the context.

5.5.4 Non personal commercial sources of information (promotional) that may be used by students

Non-personal commercial sources of information are readily available and usually easily recognised as advertising and selling. Thus, they are the least influential in the consumer decision-making process (Katz & Lazarsfeld, 1955). Consequently, consumers of services tend to rely on word-of-mouth for decision-making. For students, this is not the case as much commercial information is readily available. Thus, the seeking of interpersonal information is more likely to be related to the perceived lack of credibility of commercial sources of information (Mascarenhas & Higby, 1993).

Beales et al. (1981) suggest that commercial sources of information:

- Are least costly for the consumer to collect
- Are most readily available
- Combine persuasion with facts
- Are perceived as biased and unreliable
- Are difficult to compare between products and services

Notwithstanding these failings, the accessibility of commercial sources of information makes them a primary source of information for consumers with a degree of expertise. Experts are able to effectively evaluate the advertising message and may ignore irrelevant or spurious information (Maheswaran & Sternthal, 1990). Prospective students who are experts may be expected to limit their search to only those sources of information that fill gaps in their knowledge base (Park & Leissig, 1981). Therefore, students who are experts are expected to use commercial sources of information more than non-experts do.

5.6 Sources of Information for students seeking information about educational institutions

The typology that has been adopted for the purposes of defining the sources of information used by consumers in the decision-making process is *experiential*, *interpersonal*, *independent* and *commercial*. This typology has been adapted from that originally proposed by Beal (1957). Some adjustments have been made for the significant changes in marketing communication strategy and technology that have taken place since the 1950s. Beal (p 632) categorised sources of information used by consumers in the adoption process as:

1. Mass media
2. Agencies
3. Informal sources
4. Commercial
5. Self (experiences, expertise and inferences)

For the purposes of this thesis, *Self* will be denominated *experiential*, in order to more closely align with the terminology of existing studies relating to search, experience and credence qualities of a product. The term agency has been denominated *independent*. The term agency has come to mean 'paid, commercial advocate' or person who acts for another in business (Oxford English Dictionary, 1998). Therefore, the term agency, as used by Beal (1957), does not imply an independent source of information. It is argued that independent sources of information are sought by consumers more often in purchase decision tasks where there are high credence qualities (Tellis et al., 1985; Zeithaml, 1981).

Students' interpersonal sources of information may be formal and/or informal. Formal sources of information may include university staff. While it is recognised that university recruitment staff may be considered commercial information (paid advocates), it is argued that their primary role is the provision of information. Hence, a university recruitment officer's role is not one of a sales person (Dehne, 1993).

Commercial sources of information are those sources of information that the prospective student may use in the decision-making process provided by a sponsoring institution. These sources may range from mass media advertising messages (indirect) to targeted information brochures providing course and career information (direct). Table 5-1 lists the sources of information postulated to be influential in university choice.

Table 5-1: Sources of information for educational choice³⁷

	<i>Search strategy</i>	<i>Type of information</i>
<i>Commercial sources of information - Indirect Mass media</i>		
General advertising	Passive	Non personal
Newspapers	Passive	Non personal
Radio	Passive	Non personal
Television	Passive	Non personal
Cinema advertising	Passive	Non personal
Magazines and journals	Passive	Non personal
Signage	Passive	Non personal
Billboards	Passive	Non personal
<i>Commercial sources of information - Direct</i>		
Information brochures	Active	Non personal
Displays	Passive	Non personal
Direct marketing	Passive	Non personal
<i>Independent sources of information</i>		
Information provided by professionals	Active	Interpersonal
The internet	Active	Non personal
How to guides	Active	Non personal
Tertiary admission guides	Active	Non personal
Careers information	Active	Non personal
Study Link CD-ROM's	Active	Non personal
In-depth Newspaper articles (not advertising)	Passive	Non personal
Government information services	Active	Non personal
<i>Experiential sources of information</i>		
Campus visits	Active	Non personal
Open Days	Active	Non personal
School information sessions	Passive	Interpersonal
Trial (classes, seminars, courses)	Active	Interpersonal
<i>Interpersonal sources of information - Formal</i>		
Personal contact (Direct representative)	Active	Interpersonal
Sales agents (3 rd Party)	Active	Interpersonal
Training and development staff	Active	Interpersonal
Members of accreditation bodies	Active	Interpersonal
Government organisational staff	Active	Interpersonal
Careers counsellors	Active	Interpersonal
<i>Interpersonal sources of information - Informal</i>		
Family	Passive	Interpersonal
Friends and extended family	Passive	Interpersonal
Students from the university being considered	Passive	Interpersonal
Students from other universities	Passive	Interpersonal
Teachers	Passive	Interpersonal

³⁷ List generated from the following sources: (Anderson, 1994; Bond & Woodall, 1994; Brown, 1996; Bruwer, 1996; Buckley, Mahaffey, & Turner, 1996; Bush, Ferrell, & Thomas, 1998; Canterbury, 1989; Chapman, 1984; Cullen & Edgett, 1991; Dehne, 1993; Dehne, 1997; Department of Vocational Education and Training, 1997; Dolinsky & Quazi, 1994; Edgett & Cullen, 1992; Esteban & Apel, 1992; Heinzen & Rakes, 1995; Hollenbeck, 1988; Hossler & Foley, 1995; Hossler & Gallagher, 1987; Inglehart & Brown, 1990; Jonas, 1992; Jugenheimer, 1995; Kellaris & Kellaris, 1988; King, Kobayashi, & Bigler, 1986; LeClaire, 1987; Maguire & Lay, 1981; Marshall & Delman, 1984; McDonough, Antonio, & Trent, 1997; Motes, 1988; Murphy, 1981; Rice, 1987; Richardson & Stacey, 1993; Sanders & Perfetto, 1993; Sevier, 1990; Sevier, 1994; Webb & Allen, 1994; Webb, Coccari, & Allen, 1996; Yates, 1990; Yost & Tucker, 1995)

5.7 Précis of information search discussion

The extent of search behaviour may be determined by the time spent on search, the amount of active search (site visits), options considered and variety of sources of information used by the consumer (Newman & Staelin, 1972). Prospective students will seek information only if they believe they need further information to facilitate decision-making. There are prospective students who may not be motivated to seek information because either they believe they have sufficient information, or they believe they are unable to evaluate information that they receive. This thesis argues that these students are not behaving rationally in the economic decision-making sense. In addition, marketers of institutions need to be aware of the potential for an affective decision-making style that does not involve any overt search.

5.7.1 Hypotheses relating to students' information search

The preceding discussion highlights the existence of many principles underpinning consumer behaviour information search that may be applied in the higher education decision. Understanding students' information search activity is an important element in determining if students are making rational decisions in an economic sense.

In order to examine this question, the following five hypotheses were eventually chosen from among the many questions that presented themselves.

In a high involvement decision such as educational choice, all students can be expected to be active in the information search process. Thus:

H5₁ All students will have relatively high levels of search intensity and high usage of available sources of information

Students choose institutions from pre-selected groups of alternatives. Thus:

H5₂ There is a relationship between institutions in students' consideration sets

In educational choice, students will limit the extent of their information search activity by limiting their consideration sets. Thus:

H5₃ Students information search activities increase with the size of their consideration sets

A service which is high in credence qualities, will motivate the information searcher to seek interpersonal sources of information. Thus:

H5₄ Students use more interpersonal sources of information more than other sources of information

In a service which is high in credence qualities, a prospective consumer, would if given the opportunity, use personal experience to evaluate the service product. Thus:

H5₅ Attendance at an institution's information day will be positively correlated with enrolment at the institution

These hypotheses are considered in the following sections.

5.8 Results

5.8.1 H5₁ All students will have relatively high levels of search intensity and high usage of available sources of information

To examine this hypothesis, it was necessary to determine, firstly the students search intensity (see Appendix D, Section 3.1). The level of intensity was estimated by the level of agreement the student had with a series of statements regarding information search activities. Secondly, the level of *information source usage* was determined by dividing the number of sources used by the number of sources available. The students' use of available information is positively correlated with the students' *Intensity of search*.

Table 5-2: Correlations between % of sources of info used and intensity of search

	Percent of sources used	Intensity of search
Percent of sources used	1.000	
Intensity of search	.360**	1.000
N	576	576

** Pearson Correlation is significant at the 0.01 level (2-tailed).

This association is illustrated in Figure 5-3, where it can be seen that for students with low levels of information usage there is a strong association between their use of information and their reported search intensity. However, this association is not perfect, with other levels of information source usage demonstrating various levels of information search intensity.

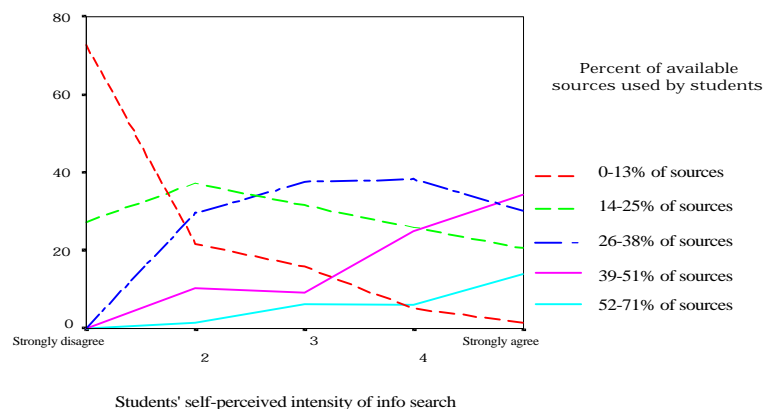


Figure 5-3: Chart of intensity of search by level of usage of available sources of info

Consequently, while it may be said that there are students who demonstrate low levels of information search activity and reported intensity of search, the relationship is not perfectly linear across all categories. It is, however, feasible to infer that students with low levels of information source usage and low levels of reported search intensity are passive in their information acquisition strategies.

Thus, H5₁ is not accepted; all students do not actively seek information in the higher education choice process.

5.8.2 H5₂ There is a relationship between the institutions in the students' consideration sets (ie students consider sets of institutions)

In order to test this hypothesis, students were asked to nominate the institutions they 1) considered attending and 2) enrolled in (see Appendix C, Section 3.1).

Table 5-2: Student's consideration sets – correlations between institutions considered³⁸

	<i>Sand stone</i>	<i>Post War</i>	<i>Inst of Tech</i>	<i>Flexible</i>	<i>Uni of Tech</i>	<i>Metro Regional</i>	<i>New State</i>	<i>National Specialist</i>	<i>Inter state</i>	<i>Inter nationa l</i>	<i>Other</i>
Sandstone	1										
Post War	0.265**	1									
Inst of Technology	0.162**	0.130**	1								
Flexible Uni	-0.019	0.110*	0.091*	1							
Uni of Technology	-0.009	0.094*	0.184**	0.113**	1						
Metro Regional	0.029	0.056	0.138**	0.175**	0.120**	1					
New State	-0.043	-0.053	0.122**	0.104**	0.099	0.202**	1				
National Specialist	-0.117**	0.06	-0.019	0.162**	-0.007	0.118**	0.122**	1			
Interstate	0.068	-0.032	-0.049	0.019	-0.042	-0.016	-0.06	-0.048	1		
International	0.046	0.019	-0.067	0.014	-0.028	0.014	0.011	0.058	0.095*	1	
Other	-0.046	-0.023	0.019	-0.013	-0.094	-0.073	-0.017	0.105*	-0.01	-0.025	1
	576	576	576	576	576	576	576	576	576	576	576

** Kendall's Tau_b Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

There are moderate correlations between Sandstone University and Post War University with some association between these institutions and Institute of Technology. The group of relationships identified by these correlations is also characterised by being negatively associated with National Specialist University. Thus, students who seek admission at those institutions are unlikely to consider National Specialist University.

³⁸ Kendall's Tau_b is used for determining correlations between non-parametric statistics. The data were coded using 1=yes considered the institution or 2= did not consider the institution.

Flexible University is unique, as it is somewhat associated with all other institutions except Sandstone University (non-significant negative association). From a marketing perspective, this places Flexible University in a difficult position, as it is unlikely to be located in a clearly defined place in the prospective student's mind. Students choosing under pressure may choose a clear leader in a particular attribute rather than undertake a significant evaluation task such as that involved in actively comparing all institutions (Tybout & Artz, 1994).

Metro Regional University, University of Technology, New State University and National Specialist University form another group of institutions. The strongest associations in this group are between Metro Regional University and New State University.

Interstate and overseas institutions are considered by 12.5% of students and are associated with each other.

Consequently, H5₂ is not rejected; students do not consider all institutions equally and there is a relationship between certain institutions in the consideration set of prospective students.

5.8.3 H5₃ Students information search activities increase with the size of their consideration sets

In order to examine this hypothesis, it was first necessary to determine the number of institutions in the student's consideration sets. Table 5-3 contains the results for the size of the students evoked sets.

Table 5-3: Size of student's consideration sets by institution of choice

	Mean	No other	No of institutions considered by students						
			1	2	3	4	5	6	7
Sandstone University	2.64	7.4%	13.0%	25.9%	29.6%	14.8%	5.6%	2.8%	0.9%
Post War University	2.68	7.1%	13.3%	22.1%	32.7%	16.8%	4.4%	1.8%	1.8%
Flexible University	2.73	4.0%	18.8%	23.8%	28.7%	10.9%	7.9%	4.0%	2.0%
University of Technology	3.01	10.6%	15.4%	10.6%	21.2%	18.3%	18.3%	3.8%	1.9%
Metro Regional University	3.02	5.2%	17.2%	20.7%	17.2%	13.8%	19.0%	6.9%	0.0%
National Specialist University	3.55	4.8%	6.0%	14.3%	23.8%	22.6%	16.7%	8.3%	3.6%
Total	2.87								

ANOVA Means significant at the 0.000 level

Students at Sandstone University considered the least numbers of other institutions. Students at National Specialist University considered the most number of institutions. However, students at University of Technology had the greatest degree of variance within their responses. University of Technology students had a relatively high mean at 3.01 institutions considered but the highest level of students who did not consider more than one institution.

This implies that University of Technology students are potentially determining which institution will accept them before ‘considering’ (compare relative ENTER scores). Alternatively, some students are so sure that University of Technology will accept them with their qualifications that they are not concerned with increasing the size of their consideration set.

In addition, by overlaying the whiches, whethers or nots typology of Jackson (1978), it appears that Sandstone University students are potentially ‘which university’ students and recognise this at an early stage in the decision-making process. ‘Which university will I attend’ is, to a certain extent, the opposite of ‘which university will have me’. A student who asks ‘which university will have me’ is likely to seek less information overall than a student who is actively choosing between institutions. To establish if this was the case, it was necessary to examine the overall level of search activity of students and compare this data with the students’ estimated ENTER scores.

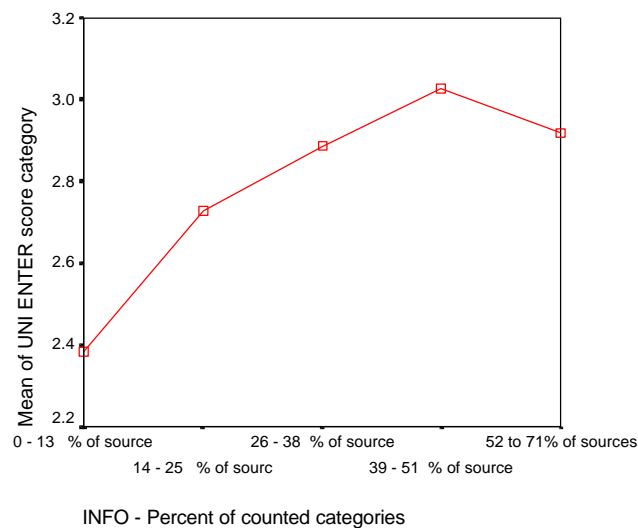


Figure 5-4: ENTER score category by overall information search

The level of activity for each type of search was determined by generating an index of the number of sources of information used in the information search process³⁹. Table 5-4 and Figure 5-4 illustrate the correlations between ENTER score and overall percentage of sources of information used.

Table 5-4: Correlations of ENTER score category by overall information search

	ENTER score category	Percent of all sources
ENTER score category	1.000	.
Percent of all sources	.113**	1.000
N	576	576

** Pearson Correlation is significant at the 0.01 level (2-tailed).

³⁹ The total number of sources of information used categorised into five relatively equal groups.

While this result is illustrative of the pitfalls of assuming that *all* students make *active* choices, it does not answer the question entirely. It was also necessary to determine if some students have larger evoked sets than others do. In order to determine this final question, the overall extent of search index variable⁴⁰ was correlated with the total number of institutions considered. Table 5-5 indicates that there is a significant positive relationship between students' consideration sets and their overall extent of search.

Table 5-5: Correlations between number of institutions considered and overall extent of search

	<i>Count of universities considered</i>	<i>Overall extent of search</i>
Count of universities considered	1.000	.307**
Overall extent of search	.307**	1.000
N	576	576

** Pearson Correlation is significant at the 0.01 level (2-tailed).

Consequently, it appears that some students are more active searchers for information than others are, and that they use information search activities to *increase* the size of their consideration sets. Therefore H5₃ is not rejected.

However, if we are cognisant of the relative ENTER scores of students, it is possible that students who have the *capability* to attend any available institution may consider more options simply because they can. Hence, the students' *intensity* of search was correlated with the student's ENTER score to determine if search is an artifact of the student's ENTER score (and therefore their capability of attending an institution).

Table 5-6: Correlations between students' ENTER score category and intensity of search index

	<i>ENTER score category</i>	<i>Intensity of search index</i>
ENTER score category	1.000	.
Intensity of search index	.022	1.000
N	576	576

Pearson Correlation - Not significant

Table 5-6 shows that there is no significant relationship between the students ENTER score category and their search intensity index. Therefore we cannot conclude that the students search intensity and their capability of attending a wider variety of institutions are related.

To summarise, it appears that students who construct relatively large consideration sets are more active searchers for information than others are. Furthermore, the size of the students evoked set is not related to their capabilities. Thus, institutions cannot rely

⁴⁰ Overall extent of search = Index of (General sources of information + Promotional sources of information + interpersonal sources of information + Number of Open Days attended)/4

on students with higher ENTER scores to consider all available options. Consequently, H5₃ is not rejected.

5.8.4 H5₄ Students use more interpersonal sources of information than other sources of information

In order to examine this hypothesis, it was necessary to determine the extent of usage of the various sources of information. Four sources of information were identified earlier: 1) Commercial (called Promotional), 2) Independent, 3) Experiential, and 4) Interpersonal. The various sources of information used by prospective students in their information search activities were counted for the number of times the students indicated that they used the source of information. The data were then indexed⁴¹ in order to smooth the potential effect of numbers of sources available skewing the results. Then, each of the sources of information was categorised in order to generate a five-point scale⁴². The categories can be read as 1 = low levels of information search extent and 5 = High levels of information search extent. The bold figures represent the highest figure in the column.

Table 5-7: Means of search extent (using % of sources available) by institution of choice

	<i>General info</i>	<i>Promotional</i>	<i>Interpersonal</i>	<i>Experiential</i>	<i>Overall extent*</i>
Sandstone University	3.20	3.22	3.31	1.97	2.78
Post War University	3.08	3.08	3.02	2.14	2.68
Flexible University	3.14	2.92	2.72	1.90	2.54
University of Technology	2.84	2.90	2.91	2.08	2.59
Metro Regional University	3.12	2.91	3.05	2.10	2.66
National Specialist University	3.12	3.31	3.02	2.25	2.81
Other	2.13	1.75	2.00	1.62	1.81
Total	3.07	3.05	2.99	2.06	
N	576	576	576	576	
Significance level	0.236	0.043	0.062	0.420	0.478

ANOVA

Promotional sources of information are most used by National Specialist University students and least by University of Technology students. Interestingly, there is relatively little promotional information surrounding National Specialist University, thus, the reliance on commercial information must relate to information search about institutions *other* than National Specialist University. This may also be consistent with first generation university students who have to conduct an intensive commercial and general information search due to the lack of available interpersonal sources.

⁴¹ Results were indexed by total number of sources of information available in each category of information. The number generated is expressed as a percentage.

⁴² Categorize Variables converts continuous numeric data to a discrete number of categories. The procedure creates new variables containing the categorical data. Data are categorized based on percentile groups, with each group containing approximately the same number of cases. For example, a specification of 4 groups would assign a value of 1 to cases below the 25th percentile, 2 to cases between the 25th and 50th percentile, 3 to cases between the 50th and 75th percentile, and 4 to cases above the 75th percentile (SPSS Help menu).

Interpersonal sources of information were most used by Sandstone University students and least used by Flexible University students. This is not surprising given the relative age differential between the student populations of the universities (See Section 1.7 in Appendix D).

Open Days were most attended by National Specialist University students and least by Flexible University. When contrasted with the results in Section 3.6 in Appendix D, it appears that National Specialist University students attend more Open Days than students at other institutions but are less likely to have attended an Open Day at National Specialist University. Flexible University students were less likely to have attended any Open Day; this is also not unexpected considering the enrolment profile of the cohort.

General sources of information were most used by Flexible University students, indicating a desire for relatively independent and informative material. University of Technology students least used general sources of information.

While the differences are not statistically significant, the correlations between type of information (Table 5-8) indicate that there is some merit in examining the types of relationships between types of information search.

Table 5-8 : Extent of search for information – Correlations between type of search

	<i>General</i>	<i>Promotional</i>	<i>InterPers</i>	<i>Experiential</i>
General	1.000			
Promotional	.339***	1.000		
InterPers	.440***	.418***	1.000	
Experiential	.158***	.397***	.259***	1.000

*** Pearson Correlation is significant at the 0.000 level (2-tailed).

The correlations between students extent of information search activity were examined using exploratory factor analysis. The results are displayed in Figure 5-5.

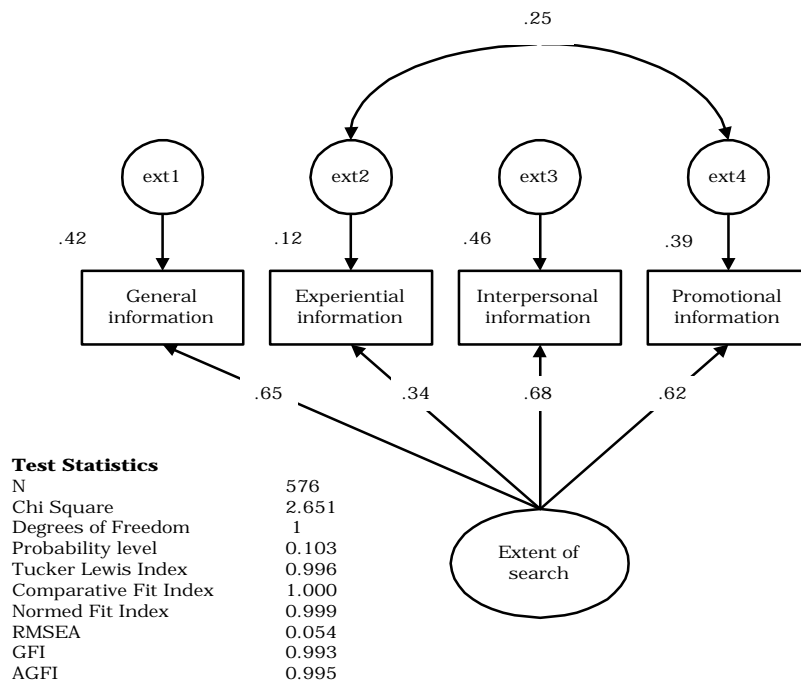


Figure 5-5: Model of students' extent of information search activity

The results of the structural equation model are significant at the 0.05 level. Students extent of search, as measured by the number of sources used by the student in seeking information about institutions, is most influenced by interpersonal information the Factor Loading (lambda) is 0.68 and the Multiple Squared correlations is 0.46. These results indicate that interpersonal sources of information contribute the greatest weight to the latent variable in the structural equation model – *extent of search*.

Thus, $H5_3$ is not rejected; students within this cohort appear to rely on interpersonal sources of information more than other sources of information.

Each of the types of information was further analysed to establish the differences between students information search activity at the type of information level.

5.8.4.1 General sources of information used by students

The information distributed by the various institutions, which does not have a promotional purpose such as course material, is considered to be general information. Students were asked to nominate which information they collected and how useful they found the information. The data were analysed using exploratory factor analysis to ascertain if there were any underlying relationships between the types of general information collected. Four factors or dimensions were identified (Table 5-9, below). Students appear to collect information relating to *admission* criteria, their *personal* interests, information, which will enable them to *differentiate* between institutions and *general* information. Some items

loaded on multiple factors; these are highlighted in the following table. Consequently, further analysis was necessary to identify the strength of relationship between the items in each factor.

Table 5-9: General sources of information - Rotated Component Matrix

	<i>Admission</i>	<i>Personal</i>	<i>Differentiation</i>	<i>Unspecialised</i>	<i>Alpha</i>	<i>Std Alpha</i>
Admission information	.953	.171	.136	.166		
Individual subjects	.709		.117	.134		
Courses (degrees/diplomas)	.698			.192		
Fees and scholarships	.630	.237	.162			
Admissions policies	.600		.148	.116	0.7805	0.8085
Sporting		.666		.250		
Arts programs	.118	.660	.225			
Students socialising		.598		.227		
Boarding facilities	.157	.569	.247			
Overseas study	.225	.523	.199			
Social programs	.173	.522	.294	.274		
Map of Uni	.161	.507	-.125	.433	0.7487	0.7581
Academic research			.730	.143		
Video of Uni		.223	.672			
Academic achievements	.178		.670	.152		
Mission statement			.537	.453		
Merchandise		.340	.517			
Student welfare	.223	.372	.469		0.7174	0.7333
Brochure	.147	.144		.630		
Handbook	.321			.584		
Newsletters and magazines		.277	.327	.464	0.4671	0.4670

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 8 iterations.

The four factors were analysed using Cronbach's alpha. These factors represent *both* the collection rate and level of perceived usefulness of the information to students' decision-making. Hence, Factor Three contains items that students largely did not collect or did not find particularly useful. To this extent, the students who collected this type of information were seeking to *differentiate* the institutions on selective criteria.

Four composite variables were generated relating to general information and the following structural equation model was developed.

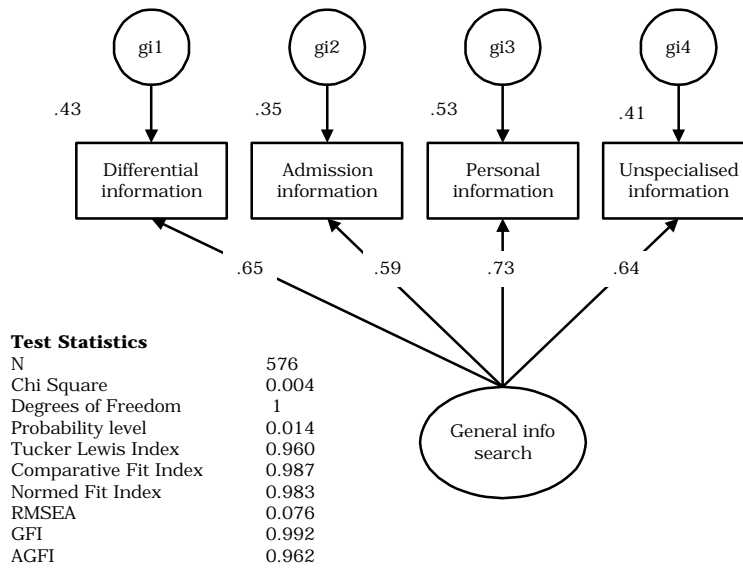


Figure 5-6: Model of students' use of general information provided by the institutions

The results are significant at the 0.10 level. The factor containing the items relating to *personal* requirements (sports, arts, etc.) contributes the greatest level of variance to the model (0.58). In addition, *Admission* information contributes the least variation to the model (0.29). This is to be expected, as all students would tend to both collect admission information and to find it useful.

5.8.4.2 Interpersonal sources of information used by students

Students were asked to nominate which sources of interpersonal information they used and how reliant they were on the opinions the people they spoke to. Table 5-10 shows the relative level of reliance on each of the interpersonal sources of information sorted by total level of reliance and tabulated by the institution of choice.

Students were most reliant on family and friends, followed by careers counsellors and then students already attending the university of choice. This latter result is somewhat unexpected, as the level of contact of school-leavers with students already attending university must be relatively limited. However, it clearly demonstrates the need for 'customer service' for existing students if prospective students both seek their advice and find their opinions valuable.

Table 5-10: Students interpersonal sources of information - sorted by total level of reliance, analysed by students' institution of choice

	<i>Sandstone</i>	<i>Post War</i>	<i>Flexible</i>	<i>Uni of Tech</i>	<i>Metro Regional</i>	<i>National special</i>	<i>Other</i>	<i>Total</i>
Family**	3.15	2.74	2.18	2.09	2.79	2.55	1.88	2.57
Friends	2.50	2.36	2.04	2.50	2.64	2.13	2.00	2.35
Careers counsellors**	2.33	2.18	1.61	2.02	2.41	2.50	.50	2.13
Students at University*	2.49	2.19	1.79	1.74	2.07	1.63	1.75	1.99
Teachers and Staff from Uni	1.15	1.23	1.71	1.47	1.26	1.70	.50	1.40
Students from other Unis	1.46	1.07	1.09	1.55	1.47	1.70	.50	1.36
Extended Family	1.30	1.19	.86	.94	.78	.89	.13	1.01
Staff from other Unis	.64	.64	.74	.61	.63	.73	.75	.67
Members of accrediting bodies	.29	.18	.38	.62	.29	.37	.75	.36
Training and development staff	.22	.25	.45	.56	.29	.30	.75	.35
Others	.19	.16	.52	.54	.31	.18	.50	.32
Government organisations*	.16	.13	.15	.48	.14	.30	.25	.23

ANOVA *** significant at 0.000 level ** significant at 0.01 level * significant at 0.05 level

Sandstone University students appear to be more reliant on interpersonal sources of information than their peers in other institutions with the highest means for three categories of contact. It appears that students do not rely on professional sources of information such as training and development staff and government organisations. Thus, students who do use these sources of information could be said to be conducting an *extensive* search.

The data were further analysed using exploratory factor analysis to identify any underlying relationships between sources of interpersonal information.

Table 5-11: Interpersonal sources of information - Rotated Component Matrix

	<i>Career</i>	<i>Colleagues</i>	<i>Close Campus</i>	<i>Alpha</i>	<i>Std Alpha</i>
Training and development staff	.768				
Government organisations	.656	.183	.196		
Members of accrediting bodies	.648		.145	0.5342	0.5440
Friends		.633	.304		
Students from other Unis	.179	.609	.168	.170	
Students at Uni	.211	.586	.114	.138	0.5213
Family	-.170	.243	.668		
Careers counsellors		.168	.636		
Others*	-.111	.522	-.607		
Extended Family	.201	.256	.447	0.4713	0.4673
Teachers and Staff from Uni	.101	.108	.811		
Staff from other Unis	.158		.806	0.5519	0.5680

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 7 iterations. * deleted from further analysis due to high loadings on multiple factors and insufficient level of contact overall.

These factors were used to compute composite variables. The composite variables were analysed using confirmatory factor analysis. The results of this analysis are presented in Figure 5-7.

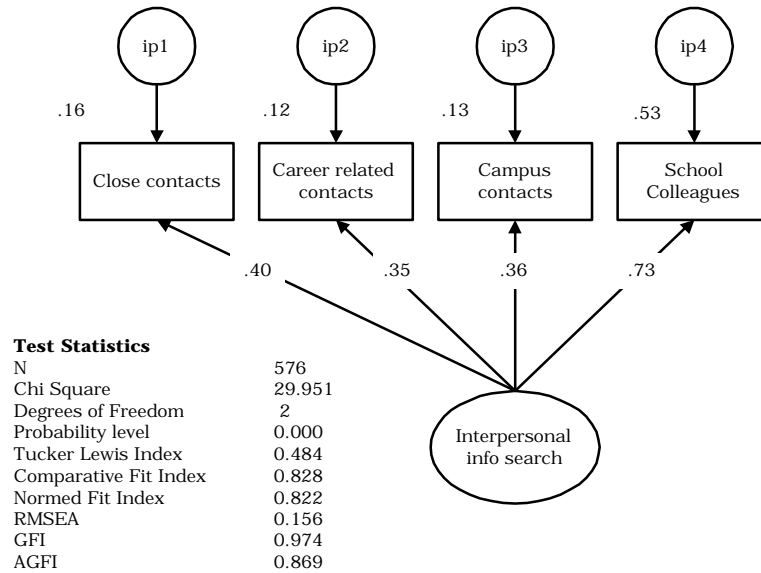


Figure 5-7: Model of students' interpersonal search activity

This model is not significant at the 0.05 level; and the Tucker Lewis Index (TLI) indicates that the data do not fit the model well. The results (Appendix D) show that, in the main, students do not use career-related contacts thus, variance in behaviour may be linked to the use of these sources of information. The model has low squared multiple correlations of less than .30 for each of the variables, further illustrating that the sources of interpersonal information used by students are potentially unrelated to each other and thus, students may not have an overall interpersonal search strategy. Furthermore, while interpersonal sources of information are important to the information search process, the primary influence within interpersonal sources is informal sources such as family, friends and colleagues.

5.8.4.3 Promotional information used by students

Promotional information is commercial information provided by the institution and others where the primary purpose is to persuade (promotion). However, some information of this nature is also perceived as independent as it may come to the student via 3rd party sources, such as How to Guides that are using information provided by the institution to generate their advice. Table 5-12 contains the frequency results of promotional sources of information sorted by mean.⁴³

⁴³ Mean derived from dichotomous variables. 1 = Not collected 2 = Collected. Means closer to 1 indicate most students did not use the information sources.

Table 5-12: Promotional sources of info used by students sorted by total mean, analysed by institution of choice

	<i>Sandstone</i>	<i>Post War</i>	<i>Flexible</i>	<i>Uni of Tech</i>	<i>Metro Regional</i>	<i>National Special</i>	<i>Other</i>	<i>Total</i>
Admission guides	1.61	1.53	1.45	1.49	1.55	1.63	1.37	1.54
Internet	1.45	1.42	1.42	1.34	1.39	1.38	1.12	1.40
Careers info**	1.45	1.36	1.30	1.28	1.31	1.45	1.00	1.39
Personal visits*	1.51	1.41	1.28	1.34	1.32	1.42	1.37	1.38
Uni visits	1.35	1.27	1.21	1.24	1.31	1.25	1.25	1.27
How to guides*	1.27	1.23	1.38	1.29	1.15	1.22	1.12	1.26
In school visits*	1.33	1.28	1.15	1.18	1.15	1.23	1.12	1.23
Advertising**	1.12	1.19	1.19	1.30	1.22	1.29	1.00	1.21
Professionals	1.18	1.18	1.13	1.17	1.20	1.14	1.00	1.16
Newspapers	1.05	1.14	1.14	1.09	1.10	1.11	1.00	1.10
Metro paper	1.05	1.08	1.07	1.07	1.06	1.14	1.00	1.08
Magazines	1.05	1.07	1.10	1.06	1.05	1.05	1.12	1.06
Study link	1.08	1.06	1.03	1.02	1.08	1.10	1.00	1.06
Agents	1.06	1.05	1.07	1.04	1.05	1.01	1.12	1.05
Billboards and signs	1.03	1.02	1.05	1.07	1.01	1.05	1.00	1.04
Cinema	1.02	1.02	1.01	1.02	1.03	1.02	1.00	1.02
Other sources	1.01	1.02	1.02	1.04	1.03	1.00	1.00	1.02
Bus or transport	1.01	1.00	1.00	1.01	1.00	1.01	1.00	1.00

ANOVA *** significant at 0.000 level ** significant at 0.01 level * significant at 0.05 level

Important sources of information to prospective students were admission guides, Internet resources, careers information and personal experience via visits and visits to the school by the university. The data were further analysed using exploratory factor analysis. The resultant matrix indicated a number of underlying relationships between the promotional items (Table 5-13).

Table 5-13: Promotional sources of information - Rotated component matrix

	Component			Alpha	Std Alpha
	<i>Interpersonal</i>	<i>Commercial</i>	<i>Independent</i>		
Personal visits	.699		.147		
In school visits	.639		.157		
Uni visits	.638	.106	.101		
Careers info	.567	-.212	.139		
Agents*	-.292	-.126	.213		
Study link*	.227			0.5991	0.6015
Advertising		.638	.157		
Newspapers	-.197	.590	.155		
Metro paper		.560			
Cinema		.439	-.197		
Billboards and signs	.120	.422			
Magazines		.388	.119	0.4805	0.4713
How to guides			.612		
Internet	-.152	-.103	.602		
Professionals		.165	.532		
Admission guides	.167	.130	.418		
Other sources*	-.164		-.335		
Bus or transport*				0.3670	0.3764

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 5 iterations. * Excluded from further analysis due to low factor loadings and insufficient numbers of students using the information sources.

Composite variables were generated for these dimensions using a different technique to that used in prior analysis. Firstly, due to the dichotomous nature of these responses, the computation for the composite variables was additive (rather than averages). Secondly, the dichotomies make it difficult to attain an adequate alpha level.⁴⁴ Accordingly, a variable was computed which could be scaled in a similar manner to other variables.

In order to reduce the aggregated data to a five-point scale, the aggregated numbers were converted to categories starting from 1 = 0 sources of information used, 2 = 1 source of information, etc. The resulting categories were analysed using AMOS confirmatory (single) factor analysis.

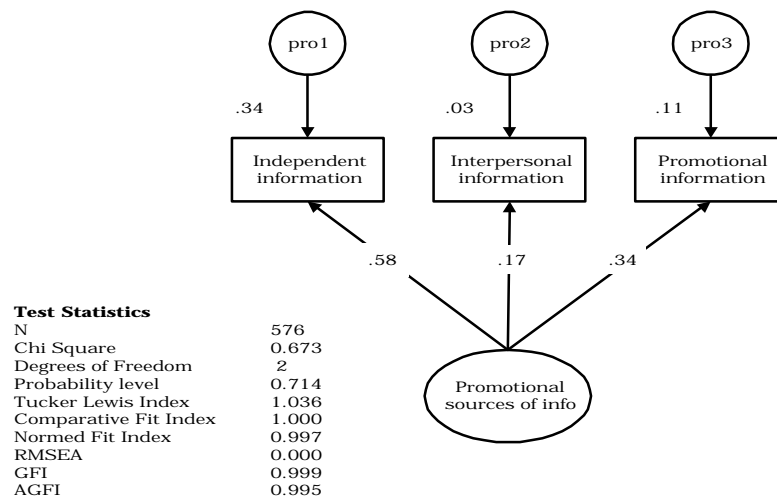


Figure 5-8: Model of students' use of promotional sources of information

The model is significant at the 0.05 level. The Factor loadings for *interpersonal* sources of promotional information at 0.17 and Squared Multiple Correlations at 0.03 indicate that interpersonal sources of information explain little of the variance of student information search for *promotional* sources of information. The greatest variance in the model is explained by independent sources of information.

⁴⁴ The answer to the question is either 'yes' or 'no' – hence variance cannot be 'scaled'.

5.8.4.4 Overall model of information search activity

The associations between the types of information search were analysed to determine if associations exist between the variables. Table 5-14 indicates that there are associations between most variables.

Table 5-14 Correlation analysis of students' information search activity

		Experiential		Promotional		General				Interpersonal			
		OPEN	Commercial	Independent	Interpersonal	Admission	Personal	Differential	General	Career	Colleagues	Campus	Close
Promotional	Open day search	1.000	.126**										
	Commercial	.155**	1.000										
	Independent	.248**	.183**	1.000									
	Interpersonal	.350**	.063	.131**	1.000								
General info	Admission	.277**	.200**	.277**	.136**	1.000							
	Personal	.175**	.251**	.304**	.196**	.413**	1.000						
	Differential	.031	.181**	.294**	-.046	.362**	.507**	1.000					
	General	.202**	.162**	.260**	.176**	.430**	.452**	.031	1.000				
Interpersonal	Career	-.026	.098*	.070†	-.076	.129**	.182**	.406**	.191**	1.000			
	Colleagues	.194**	.196**	.242**	.220**	.213**	.333**	.236**	.298**	.238**	1.000		
	Campus	.171**	.229**	.152**	.057	.225**	.250**	.286**	.226**	.288**	.234**	1.000	
	Close	.208**	.122**	.196**	.377**	.181**	.352**	.226**	.176**	.057	.329**	.091*	1.000

** Pearson Correlation is significant at the 0.001 level (2-tailed). *Correlation is significant at the 0.05 level (2-tailed). † Correlation is significant at the 0.10 level (2-tailed).

These data were further analysed using exploratory factor analysis, which produced the results in the following table.

Table 5-15 Exploratory factor analysis of information search activity

	Factor			
	Descriptive information	Interpers – informal	Experiential	Interpers – formal
GEN Admission information	.912			
GEN General info	.656	.361		
GEN Personal information	.603			
GEN Differential information	.525			
PRO - Independent sources	.438			
WHO - Close contacts		.774		
WHO - Colleagues		.727		
OPEN - Percent categories			.832	
PRO - Interpersonal sources		.320	.733	
WHO - Campus contacts				.929
WHO - Career contacts				.405
PRO - Commercial sources	.243			.274

Extraction Method: Principal Components Analysis, using covariance matrix. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 7 iterations.

The factor analysis identifies a number of dimensions to students' information search activity. The first, most contributory, factor is denominated *descriptive* sources of information, which is comprised of the sources of information provided by the institutions that *describe* the institution and the study program. This factor includes information provided by sources of information that students perceive as being independent. Consequently, this type of information is more important to the student than overtly promotional information. The next most contributory factor is *informal sources of interpersonal information* such as family and friends and school colleagues. *Experiential* information such as open day visits and school visits by institutional staff are included in the third factor. The fourth factor consists of *formal interpersonal* sources of information such as campus and career related contacts. Commercial- promotional sources of information do not load on a single factor and therefore can not be considered as contributing significantly to the students' information search activity.

The level of association between multiple variables and dimensions renders this data unsuitable for further modelling which requires not only linear relationships, but also uni-dimensionality.

In conclusion, students' information search activity has been demonstrated to consist of a number of interrelated sources of information. The most important source of information is interpersonal. The least influential are experiential and overtly promotional sources of information such as open days and commercial information. Therefore, H5₄ is not rejected, interpersonal sources of information are more influential in the institutional decision-making process.

5.8.5 H5₅ Attendance at an information day will be positively correlated with enrolment at the institution

Prospective students reported attendance at an Open Day or information session was used to measure their experiential information search activities. This measure was used because other forms of experiential information, while influential in the decision, may occur over many years and are not consistently applied by the institutions involved in the study. Table 5-16 presents the results for attendance at Open Days or information sessions by students' institution of choice.

Table 5-16: Attendance at Open Days or information sessions by institution of choice

	OPENDAY – Attendance at CURRENT institution		OPEN - Attendance at OTHER open days		
	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>Total</i>
Sandstone University	58	50	58	50	108
Post War University	43	70	58	55	113
Flexible University	40	61	47	54	101
University of Technology	43	61	48	56	104
Metro Regional University	19	39	33	25	58
National Specialist University	30	54	51	33	84
Other	4	4	3	5	8
Total	237	339	298	278	576

Not significant .103
ANOVA

Not significant .365

The results between institutions are not significant. Therefore, it cannot be concluded that students at particular institutions attend Open Days or Information sessions more or less than at any other institution. However, in order to examine the question regarding the relationship between experiential information and institutional enrolment, correlations between the variables were examined (Table 5-17).

Table 5-17: Correlations between institutional enrolment and Open Day attendance

	<i>Institutions enrolled in</i>	<i>Attendance at other open days</i>	<i>Open day attendance</i>
Institutions enrolled in	1.000		
Attendance at other open days	-.021	1.000	
Open Day attendance	.084*	.337**	1.000
N	576	576	576

Kendall's tau_b * Correlation is significant at the .05 level (2-tailed). ** Correlation is significant at the .01 level (2-tailed).

There is a slight non-significant negative correlation between attendance at the institution of final choice's open days and institution of enrolment. There is a stronger (significant) correlation between attendance at *other* open days and the institution of enrolment than there is attendance at the open day of the institution of enrolment. This result suggests that there is not necessarily a causal relationship between attendance at Open Days and institutional enrolment as suggested by others (Yost & Tucker, 1995). To examine this potential, the results were analysed using correlations between institution of choice and open day attendance.

Table 5-18: Attendance at Open Days analysed by students' institution of choice

	<i>Sandstone</i>	<i>Post War</i>	<i>Flexible</i>	<i>Uni of Technology</i>	<i>Metro Regional</i>	<i>National Specialist</i>
Attendance at CURRENT institutions open day	.123***	-.031	-.014	.002	-.057	-.046
Attendance at OTHER institution open day	.021	-.002	-.056	-.051	.036	.076‡

Kendalls Tau_b correlation significant at the 0.001 level ‡ correlation significant at the 0.10 level.

There is no association between attendance at Open Days at the institution of choice except for the students enrolled at Sandstone University. There is a slight, non-significant association between attendance at other open days and National Specialist University students, suggesting that these students may attend open days at institutions that they may not eventually enter.

5.9 Discussion

Table 5-19: Hypotheses and findings relating to students' information search activity

<i>Hypotheses</i>	<i>Findings</i>
H5 ₁ Passive information searchers will have low levels of information search intensity and low usage of available sources of information	Not rejected; while the relationship is not perfectly linear across all categories, there is an association between intensity of search and extent of search for information. Some students conduct a very limited search and are therefore considered passive.
H5 ₂ There is a relationship between the institutions in the students' consideration sets	Not rejected; there are groups of institutions that a student considers. Some students consider only one institution, few students consider all available institutions. Students also appear to create inept sets – institutions that they would not consider attending.
H5 ₃ Students information search activities increase with the size of their consideration sets	Not rejected; students information search activity increases with the size of their consideration set. Further, there is no difference between students who seek information because they have greater access and those who have lower levels of access.
H5 ₄ Students use more interpersonal sources of information than other sources of information	Not rejected; students use interpersonal sources of information more extensively than other sources of information. Then, students use general information provided by the institution, followed by promotional information and lastly, experiential information such as open days.
H5 ₅ Attendance at an Open Day will be positively associated with attendance	Rejected; some students do not attend open days at all. Only Sandstone University students who attend open days are likely to subsequently enrol at the institution.

In conclusion, it appears that students do not always actively search for information about institutions. Furthermore, their search is based largely on interpersonal and informal sources of information. Consequently, marketers of institutions will have difficulty reaching those students who are not active 'in the market place.' These students are at both ends of the

capability spectrum and promotional messages designed to persuade one group might alienate the opposing end of the spectrum.

Students also consider institutions in 'sets.' This has implications for marketers of institutions who wish to be considered as part of a group of institutions to which the student does not assign them. For example, if a university wishes to be known for its research excellence, it may find this position difficult to promote as the other institutions in the consideration set are promoting their excellence in teaching. Accordingly, the student may use the directly comparable criterion (teaching) rather than introduce a new variable to consider when comparing institutions. In this case, the university would find that the student more *actively* considers the *other* institutions in their consideration set. This is particularly pertinent for those students with large consideration sets, as their information search activities are more intense than those with smaller consideration sets. Consequently, those students with large consideration sets and active search profiles may seek to minimise the number of criteria they use to compare institutions in the consideration set. The students may seek to minimise comparative criteria in order to decrease search costs.

Finally, the results question the impact of experiential information on eventual attendance at the institution of choice. More students *did not* attend an Open Day or information session at the institution of choice than did attend a session. Consequently, while there is a significant relationship between experience with the institution and attendance, institutions must increase the overall level of interaction to enable the students who do not attend an experiential information session to interact with the institution.

This chapter has examined in detail the information search activities of prospective students. The following chapter develops an argument for the factors that motivate students to actively seek for information about institutions.

6.1 Introduction

The previous chapters have illustrated the complexity of decision-making in the university choice environment in addition to the reasons students develop preferences between institutions. Further, the topic of *how* students seek information relating to the decision-making task has been discussed. This chapter focuses on the decision-making capability of the prospective student in choosing an institution to attend. It is the second of the three chapters aimed at demonstrating *how* students choose an institution. The shaded area of the diagram illustrates the current focus. The purpose of this chapter is to present the arguments relating to *how* students are motivated to search for information about a particular purchase decision. This chapter contains material which overlaps with both Chapter Five and Chapter Seven. The overlap is considered necessary to the structure of conceptually discrete chapters but recognises that there is significant inter-relationship between the topics under examination. Each chapter approaches the issues from a different perspective.

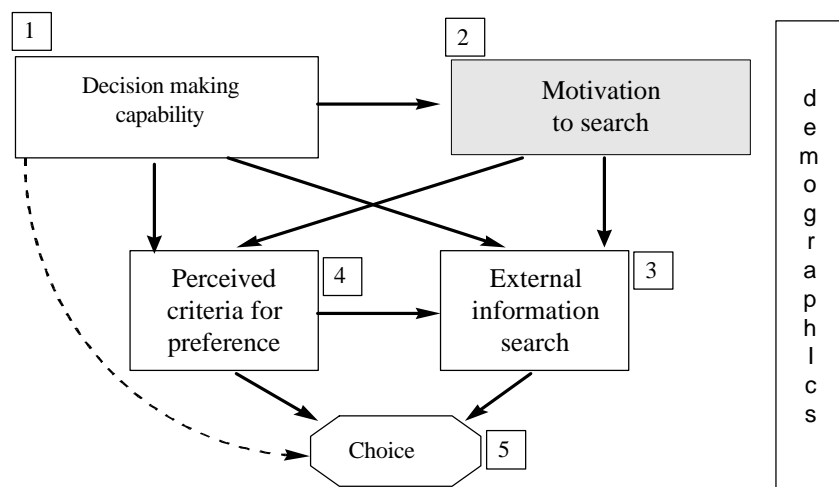


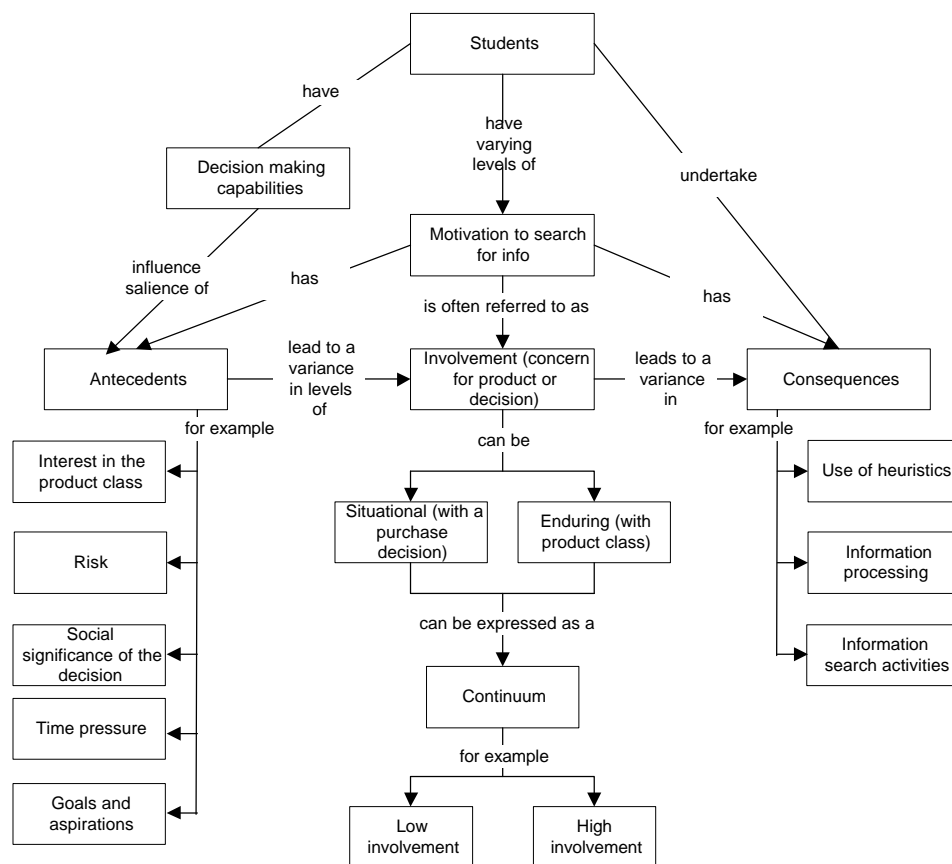
Figure 6-1: Hypothetical research framework – Motivation to search

The information search activities discussed in the previous chapter are an *outcome* of the student’s motivation to search for information. However, before we can understand how students are motivated to search for information we need to understand what information is available and how students might access that information. This chapter argues that a student’s motivation to search for information is a consequence of the student’s decision-making capability and that motivation to search for information influences the students information search activities. Marketers of institutions will benefit from understanding both

the antecedents and consequences of information search activities, in order to adapt marketing communication strategies to best meet the information needs of prospective students.

6.2 Concept map of the theoretical perspectives surrounding students' motivation to search for information

The following diagram represents the conceptual coverage of this chapter. It is best interpreted by commencing at the box entitled **students** and working down the page unless the arrows indicate a direction. This concept map indicates linkages between the concepts discussed here and earlier chapters. The reader is reminded that it provides a visual road map of the issues and is not intended to present hypotheses.



Conceptual map 6-1: Motivation to search

6.3 Motivation to search – a new method of viewing existing theories

Motivation to search for information is hypothesised as being comprised of multiple dimensions. A consumer's motivation to search is their felt need to search for information relevant to the purchase decision. Motivation to search for information is affected by the perceived importance of the product. Further, it is influenced by the perceived consequences of making a mistake and consumers' perceptions of the probability of making a mistake. In addition, it is postulated that the symbolic and social significance of the product to the consumer, as well as the consumer's needs and aspirations may influence their level of motivation. Also, the level of motivation to search for information is hypothesised to affect the amount of time the consumer believes they have available to search of appropriate information. Finally, motivation to search for information is affected by the consumer's interest in the product, in this case, the students' interest in the educational product.

The term *motivation to search* for information is used here in preference to the more familiar, consumer behaviour based, terminology of *involvement* due to the inconsistencies in the prevailing arguments regarding the involvement construct (cf Bergadaa, Faure & Perrien (1995); Day, Stafford & Camacho (1995); Kapferer & Laurent (1993); McColl-Kennedy, Fetter & Dahringer (1995); Richins, Bloch & McQuarrie (1992); Zaichkowsky (1994)). Motivation to search is used in preference to the term involvement as it:

1. encompasses the concept of *involvement* in its varying types
2. includes such motivational variables as aspiration and risk perception
3. is more clearly related to a consumer's state of motivation (as opposed to a cognitive response to an advertising message as suggested by (Greenwald & Leavitt, 1984; Krugman, 1965)

Notwithstanding the necessity to adopt an appropriate and inclusive terminology, the concept of involvement is still a central construct of the buyer behaviour literature. In the following discussion, involvement is differentiated from its antecedents and consequences.

6.4 The construct of 'Involvement'

Definitions of involvement have varied since the early days of Sherif and Cantril (1947). However, it is now commonly accepted that involvement is a motivational and goal directed emotional state that determines the personal relevance of a purchase decision to a buyer (Rothschild, 1984).

Another common definition of involvement is that put forward by Zaichkowsky (1985 p 342);

A persons' perceived relevance of the object based in inherent needs, values and interests

This definition builds on Rothschild's original and is used by other authors (cf Celuch & Evans (1989); Day et al. (1995); McQuarrie & Munson (1992); Mittal (1995). However, Zaichkowsky (1994) changes her definition to include the word 'advertising' thus, subtly changing the focus of the examination from involvement with the product to involvement with the purchase situation or advertising message. This is more consistent with earlier research (Cohen, 1983) but further distances her work from that of Mittal and others.

Typically, researchers have linked the term *involvement* to a modifying concept to distinguish between *types* of involvement (Havitz & Dimanche, 1990). However, both Kapferer and Laurent (1986) and Mittal (1989) suggest that the addition of prefixes to the term 'involvement' leads to a tendency to believe that the source of involvement is the determining factor in the research. Thus, as prophesied by Rothschild (1984) the examination of involvement with specific sources has inevitably led to a proliferation of types of involvement.⁴⁵

For example, Zaichkowsky's research stream relates to the concept of purchase decision involvement (or situational involvement)⁴⁶ rather than product class involvement (or enduring involvement)⁴⁷. Thus, there may be variation in degree of involvement for a specific purpose (buying situation) and for a particular class of product which endures beyond a specific choice task (Mittal, 1995). By way of illustration: a consumer may be highly involved in the purchase of a new vehicle but may have no enduring interest in cars beyond that necessary to make a purchase. Further, a consumer who has an enduring interest in and a concern for cars beyond a vehicle purchase decision is said to have enduring or product class involvement. For the purposes of this thesis, the terms *product class involvement* and *purchase decision involvement* are used to differentiate between the two major types of involvement. Furthermore, these terms more precisely describe the type of involvement under examination.

A third type of involvement has been posited which Houston and Rothschild (1978) called *response involvement*. However, response involvement has since been demonstrated to be a

⁴⁵ See for example (Andrews, Durvasula & Akhter, 1990; Celsi & Olson, 1988; Celuch & Longfellow, 1992; Cullen & Edgett, 1991; Greenwald & Leavitt, 1984; Hawkins & Hoch, 1992; Higgie & Feick, 1988; Johnson & Eagley, 1990; Kapferer & Laurent, 1993; McColl-Kennedy et al., 1995; McQuarrie & Munson, 1992; Mittal, 1989; Muehling, Laczniak & Andrews, 1993; Park & Mittal, 1985; Petty, Cacioppo & Schumann, 1983; Reid & Crompton, 1993; Richins et al., 1992; Zaichkowsky, 1987; Zaichkowsky, 1994)

⁴⁶ For further illustration of this conceptualisation see (Celuch & Evans, 1989; Houston & Rothschild, 1978; McQuarrie & Munson, 1987; Zaichkowsky, 1986; Zaichkowsky, 1987; Zaichkowsky, 1994)

⁴⁷ This conceptualisation is illustrated in the following papers (Bergadaa et al., 1995; Bloch, 1982; Higgie & Feick, 1988; Houston & Rothschild, 1978; Mitchell, 1979; Richins et al., 1992).

combination of product class involvement and purchase decision involvement (Richins et al., 1992). As a consequence, this type of involvement is not examined further in this thesis.

A fourth 'type' of involvement is that of *involvement with the advertising message* (Gill, Grossbart & Lacznik, 1988; Greenwald & Leavitt, 1984; Krugman, 1965; Zaichkowsky, 1994). This is often measured using both purchase decision and product class involvement scales (Muehling et al., 1993). However, the potential for a consumer to be manipulated into an involvement state by exposure to an advertising message is restricted in the educational domain where the decision takes place over a long period of time with relatively limited access to overt advertising messages. Thus, involvement with the advertising message will not be included further in this study.

Hunt, Keaveney and Lee (1995) attempt to overcome the 'type of involvement' situation by advising that an 'object' can be: *physical* (as in a product), an *activity* (purchasing activities such as shopping, or hobbies), an *idea* (which may be a goal or objective) or an *issue* (as in a social cause). Hence, a consumer can be said to be involved if they are concerned with an object, even if this object is an advertising message. In their examination of the two major categories of involvement (purchase decision involvement and product class involvement), Hunt, et al. found that purchase decision involvement and product class involvement were not measuring the same concept. High levels of purchase decision involvement could exist without commensurately high levels of product class involvement. For example, a prospective student may indicate that choosing an institution was a very important decision to them (purchase decision involvement) but may not be intrinsically concerned about universities. Thus, researchers examining involvement should measure both elements, as one is not a direct proxy for the other.

6.4.1 Involvement as a continuum of motivation, interest or arousal

Involvement is often conceptualised as a dichotomy and the consumer is said to have high levels of involvement or low levels of involvement (Day et al., 1995). However, as discussed by Houston and Rothschild (1978), involvement is more likely to be a continuum although, in operational terms, a continuum is harder to measure. This thesis adopts the position that involvement is a *continuum* of unobserved motivation, arousal or interest of a consumer in a product class or decision (Reid & Crompton, 1993). It is recognised that involvement may vary between a specific decision and a product class.

In addition, there may be some products that are inherently involving due to the nature of the purchase (Zaichkowsky, 1994). However, it is argued in this study that products *per se* are unable to be intrinsically involving. For example, shampoo may be both high involvement and low involvement depending on the circumstances surrounding the purchase decision. A high involvement shampoo purchase might be characterised by (for example) a first independent shampoo purchase, the consumer is unfamiliar with the product, the consumer

may have had a previously poor experience with shampoo, they may have allergies or be concerned about social issues (such as materials not being tested on animals), and so on. Thus, the characteristics assigned to low involvement products by advertising involvement researchers⁴⁸ may not hold in all circumstances.

Furthermore, there may be some high involvement products that may not be purchased by highly involved consumers (Hoyer, 1984; Hupferer & Gardener, 1971; Kassarian, 1981). For example, a car buyer might believe that the outcome (a car to drive) is important but may have no interest in the purchase process (Bloch, 1981). Consequently, no assumptions regarding high or low involvement may be assigned to the product or the product class, as involvement may vary with the various antecedents to involvement as they relate to the individual consumer.

6.4.2 Involvement as product importance vs. a multi-dimensional construct

The early work of Zaichkowsky (Zaichkowsky, 1985; Zaichkowsky, 1986) presented involvement as uni-dimensional. However, subsequent research on the scale found a number of underlying dimensions to the construct as measured by the scale developed (McQuarrie & Munson, 1987; McQuarrie & Munson, 1992; Mittal, 1995; Zaichkowsky, 1987). Laurent and Kapferer (Kapferer & Laurent, 1986; Kapferer & Laurent, 1993; Laurent & Kapferer, 1985) posited that involvement consisted of four dimensions (risk, pleasure value, sign value (expression of self) and interest in the product. The dimensionality of the involvement construct has also been explored by many authors (Bergadaa et al., 1995; Bloch, 1981; Celuch & Evans, 1989; Cullen & Edgett, 1991; McQuarrie & Munson, 1992; Mittal, 1995; Park & Mittal, 1985; Rodgers & Schneider, 1993). Kapferer and Laurent have also suggested that involvement increased in intensity as the importance of the product to the consumer increased. However, due to scale validation difficulties, their research was somewhat slower to be accepted by the academic community (Mittal 1995). Nevertheless, Mittal and Lee (1989), McQuarrie and Munson (1987) and Celuch and Longfellow (1992) have subsequently developed or validated scales that tap the underlying dimensions of Laurent and Kapferer's conceptualisation of involvement. However, Laurent and Kapferer's hedonic or pleasure value is not applicable to all contexts (Mittal, 1995). While it is accepted that some people may take pleasure in learning and learn for learning's sake, the acquisition of a university degree is more likely to be goal directed behaviour, thus the hedonic value of the product is of limited significance in the educational choice domain. This does not imply that students who attend university do not have fun while they are there.

Mittal's multiple studies (Mittal, 1989; Mittal, 1995; Mittal & Lee, 1989; Park & Mittal, 1985) of involvement confine the core involvement construct to importance or concern for

⁴⁸ (Greenwald & Leavitt, 1984; Johar, 1995; Muehling et al., 1993; Zaichkowsky, 1994)

the *product decision*. However, in reviewing the significant body of literature relating to the construct⁴⁹, it becomes clear that while involvement can be conceptualised as a single dimensional construct (when using importance or concern as the denominator), it appears inextricably linked to both antecedent and consequent issues.

While providing valuable input into the debate surrounding involvement, Mittal's simplification of the construct for measurement has omitted the circumstances which lead a consumer to be involved and the consequences of that involvement (Mittal, 1989; Mittal & Lee, 1989). These issues involve factors such as the consumer's perceptions of risk, the symbolic value of the product to the consumer, the objectives or goals the consumer might achieve as a result of the purchase and perceptions of time availability to make a decision. Furthermore, involvement has possible consequences such as increased information search, the ability to determine attribute differences in products, cognitive processing of information and the time spent on deliberation in a choice task.

The antecedents and consequences of involvement are considered in the following sections.

6.5 Antecedents to students' involvement

Antecedents to involvement, in either product class involvement or purchase decision involvement, are those factors that influence a consumer to be either more or less involved in the process of making a purchase. It is argued in this thesis, that in the university choice environment, the relevant antecedents to involvement are: the students' decision-making capability, the social significance of the product to the student, the goals and aspirations of the student, the students' perceptions of risk, interest in the product class and perceptions of time pressure. Each of these antecedents may influence students' motivation to search for information in different ways. These influences are discussed in the following sections.

6.5.1 Decision-making capability

Schmidt and Spreng (1996) suggest that the ability to search for information, and process the information found, is a key differentiating factor in consumer behaviour decision-making processes. They propose that *ability* to search is comprised of the consumers' self-perceived ability to make a decision, their knowledge about the issues involved in decision-making and their level of education. The ability to search for information is also affected by a number of other personal traits such as locus of control (Srinivasan & Ratchford, 1991), self-esteem (Kassarjian, 1971), life optimism (Braungart & Braungart, 1996), uncertainty orientation (Urbany, Dickson & Wilkie, 1989) and need for cognition (MacInnis & Jaworski, 1989). These factors will be considered in further depth in Chapter Seven – Decision-making

⁴⁹ See for example (Andrews et al., 1990; Bloch, 1981; Celsi, Chow, Olson & Walker, 1992; Celuch & Longfellow, 1992; Havitz & Dimanche, 1990; Kapferer & Laurent, 1993; McQuarrie & Munson, 1992; Mittal, 1995; Reid & Crompton, 1993; Richins et al., 1992; Rodgers & Schneider, 1993; Zaichkowsky, 1994)

capability. However, a consumer's decision-making capability is hypothesised to influence their level of motivation to search for information.

For example, the level of involvement is related to the consumer's perception of their ability to control the decision environment. Thus, motivation to search is related to locus of control (Bergadaa et al., 1995). This is supported by Sprinzen (1976) who found that a consumer's locus of control increases the level of involvement in the decision making process. The more internally controlled a consumer, the more likely they are to take an active role in the decision making process. In addition, those with higher levels of concern about the choice task (involvement) are more likely to have lower levels of self-esteem (Robbins, Mulison, Boggs, Riedesel & Jacobson, 1985).

In other studies, Houston and Rothschild (1978), Richins and Bloch (1991) and Celsi et al., (1992) have found that involvement increases with familiarity (number of purchases previously made) with the product class or consumer knowledge. In addition, motivation to search for information is likely to be higher in those from higher socio-economic status groups (Mochis & Moore, 1979). People who are highly educated or have high levels of product knowledge have higher levels of expectation regarding the efficacy of information search (Duncan, 1982). Therefore, students from higher socioeconomic status backgrounds may have an increased level of search for information that will be beneficial to the purchase decision.

In addition, a consumer's motivation to search for information may be affected by their propensity to undertake the decision-making task. Some people have a greater level of motivation to work at a problem solving task (Hansen, 1976). Thus, a student's work ethic may influence their level of persistence and the intensity of their search behaviour (Dickinson, 1982; Ethington & Wolfle, 1988; Lynn, Hampson & Magee, 1983).

Yet other examples of the influence of decision-making capability on motivation to search for information are discussed in Chapter Seven.

6.5.2 Social significance of the educational product (sign value)

Another antecedent to involvement is the consumer's perception of the social significance of the product. Socially significant products are those which are purchased, not just for their functional value, but for the ability of the product to provide the consumer with the self-perceived achievement of social goals and fulfillment of their self-concept (Sheth, Mittal & Newman, 1999). The social value of a product is determined by the level of contribution of the product towards the achievement of an image that is congruent with the norms of a consumer's reference group and the consumer's desire to convey that social image. Consequently, some products are said to have expressive or sign value because they convey a desired social message about the consumer.

The higher the degree of social significance of the product the more a consumer may consider that the product is important (Laurent & Kapferer, 1985; Levy, 1959). Thus, socially significant purchase decisions are likely to be characterised by high purchase decision involvement although this might not lead to commensurately high levels of product class involvement. As a result, it is posited that students who believe that the educational product is socially significant, may also be highly involved in the purchase decision task.

Gainer (1995) found that if consumers were likely to be seen using or purchasing the product, they would be more inclined to indicate that the product was important to them. Furthermore, the greater the level of social significance associated with the purchase, the greater the consumer's propensity to choose an option which is approved of by the reference group. This propensity was greater in those who were young and/or not located in a clearly defined social group. Accordingly, school leavers, who are both young and may not be located in a clearly defined social group, should also have strong reference group contact in the information search process.

The greater the symbolic value of the product the more consumers will search for information about the product (Krugman 1965). Zaichkowsky (1994) calls this affective involvement or involvement with the emotional aspects of the purchase decision (Zaichkowsky, 1987). However, in examining the underlying constructs, it would seem that Zaichkowsky's anchor terms describe social significance – which would, of course, be emotionally involving to a consumer who is concerned with the social value of a product.

Similarly, Celsi, Chow and Olson's (1992) work on personal and self-relevance would appear to resemble the symbolic or sign value dimension of involvement as discussed in those papers indicating that involvement has multiple dimensions. In addition, purchasing involvement is often interpreted to mean the self-relevance of the purchase decision (activities, ideas, objects and issues) to the individual (Slama & Tashchian, 1985). Thus, many authors suggest that involvement *is* felt personal relevance of the product to the consumer (Celsi et al., 1992; Celsi & Olson, 1988; Gotlieb & Sarel, 1991; Mitchell, 1979; Petty & Cacioppo, 1986).

However, felt personal relevance to the consumer does not necessarily mean that the consumer is attempting to overtly express their personality with the product (although this might be the case). The consumer will purchase products that are congruent with their self-concept and their social aspirations (Folkes & Kiesler, 1991). Furthermore, if involvement is a *motivational* state, which will result in consumer activities, then felt personal relevance may not be sufficient to measure the multiple dimensions of the motivational state. Thus, it is argued in this study that while felt personal relevance is antecedent to involvement, relevance to the consumer is determined by the social (symbolic) and emotional value assigned to the product by the consumer.

Overall, motivation to search for information increases as the product or purchase increases in personal relevance for the consumer (Mochis & Moore, 1979). Personal relevance for the consumer is determined by the emotional and social value that the consumer places on the purchase decision.

6.5.3 Students' goals and aspirations may make a difference

A particularly relevant antecedent to motivation to search for information is that of the consumers' goals and aspirations. Goals and aspirations are a function of the needs the consumer is attempting to satisfy with the purchase. While there are almost as many motivational theories as there are authors in the field of consumer behaviour and consumer psychology, it is necessary to adopt an *a priori* typology to categorise the possible goals of prospective students. Sheth (Sheth, Newman & Gross, 1991) has proposed that choice behaviour stems from five needs: **Functional** – a product or service that satisfies a physical or functional purpose. For example, any form of transport will perform the function of travelling from one location to another. **Social** – a product or service that satisfies a social need through association with a desired segment of society. For example, a BMW sedan might satisfy a need for transportation *and* to belong to a relatively select group in society. **Emotional** – a product or service that satisfies an emotional need such as the desire to feel (say) joy, love, respect or esteem. For example, the new BMW sedan might be suitable for social status but driving the older (but similarly priced) sports car provides the consumer with sheer driving pleasure. **Epistemic (cognitive)** – a product or service that satisfies the consumers need to know or learn something new. For example, the availability of a test-driving facility for the latest BMWs. In addition, products such as newspapers, magazines, web sites relating to vehicles would also satisfy this need. **Situational** – products or services that satisfy a particular purchasing situation. For example, the BMW may get a flat tyre, which necessitates calling a roadside assistance service. Thus, the need is only activated in a certain situation.

It is the *activation* of these needs which provides the stimulus for the consumer to seek information relating to the purchase decision. Furthermore, the relative weighting of each of these needs may change with the type of product under consideration (Sheth et al., 1999). A consumer's aspirations and goals may increase the importance and personal relevance of the purchase decision (Bagozzi & Warshaw, 1990; Park & Smith, 1989).

It is argued in this study that, in choosing an educational institution, the primary needs to be satisfied may be the student's social and emotional needs. For example, social status and financial reward are potential outcomes of the educational process. Those students whose primary need is the achievement of social status may choose post secondary education, even if offered a potentially financially lucrative career position when leaving school. Those, whose primary need is financial reward, may choose to enter an immediately financially

rewarding career. For example, a career in selling cars or real estate might be advanced without a university level education. However, as suggested by Ayalon and Yuchtman-Yaar, (1989), the career advancement opportunities are limited for those with lower levels of education in the longer term. Consequently, those with a longer-term view might include university education in their aspirations. Career aspirations are formed partly as a function of the student's current socio-economic status. The student seeks a career path that will either maintain or improve their status (Covington & Omelich, 1986; Hollenbeck, 1988). Of course, there are those who will remain in the educational process because they believe they have no other option. This is particularly the case in periods of economic downturn and high unemployment.

Consequently, it is posited that the prospective student's career aspirations may influence the type of information they seek in the information search process. For example, prospective students seeking to satisfy social aspiration may seek information from socially significant others (Hoffman & Schwarzwald, 1992). In addition, the type of information they seek is likely to be associated with prestige and status, rather than functional or situational need satisfaction. Finally, if status is the desired outcome of the purchase the consumer may delegate the decision to another in order to minimise the risk of making a poor decision (Solomon, 1986).

6.5.4 Risk perceptions

Risk has been proposed as antecedent to, and a dimension of involvement (Chaffee & McLeod, 1973; Laurent & Kapferer, 1985). However, as argued by McQuarrie and Munson (1992), risk may be a separate construct to involvement. If we accept that involvement is a consumer's perception of the importance of the purchase decision (Mittal, 1995), then risk can be both a separate construct as first proposed by Cox (1967), and an antecedent dimension of involvement as proposed by Kapferer and Laurent (1993).

Turley and Le Blanc (1990, 1993) argue that there are different types of perceived risk in the purchase of services. The different risk perceptions may lead to differing risk reduction strategies. For example, social risk perceptions may lead to an increase in interpersonal information search activities (Cunningham, 1967). Another risk reduction strategy is to increase information search activity which is directed toward the decision making goal. Zeithaml (1981) and Celuch and Longfellow (1992) suggest that motivation to search for information increases with the intangibility of the product. Thus, information search activity should be intense in a highly intangible product such as education (Guseman, 1981; Murray, 1990; Shanteau, 1992). However, while consumers may perceive that a service is high risk, this does not mean that there is a search for technical or explanatory content in the information. Some consumers are unwilling or unable to evaluate the service offering and as such, they reduce perceived risk by limiting their consideration of the consequences

(Guseman, 1981, Maute & Forrester, 1991). This is commensurate with the proverbial ostrich burying its head in the sand. As was discovered in Chapter Five, there is a proportion of students who do not search for information. We need to understand if this lack of search is due to the student's motivation or some other factor, such as their self perceived capabilities to undertake a decision of this dimension.

6.5.5 Interest in the product class

Laurent and Kapferer (Kapferer & Laurent, 1986, 1993; Laurent & Kapferer, 1985) suggest that interest in the product class is an antecedent to involvement in the purchase decision. Interest in the product class has some similarities to the importance of the purchase decision proposed by Mittal (1987). However, as argued by Bloch (1981), consumers have a greater propensity to be involved in the purchase decision if they have a prior interest in the product class. Consequently, interest in the object is antecedent to a perception of that object's importance to the consumer's well being.

However, while interest in the product class may be theoretically separate to the product's importance, it is insufficiently distinguished from importance or concern (involvement) to differentiate between the two in an operational sense. The questions one would use to elicit an understanding of product class interest are essentially the same as those that elude an understanding of product class involvement (cf Mittal (1995) and Bloch (1991)). As a consequence, this study will use product class involvement as a proxy for interest in the product.

6.5.6 Time pressure

It is hypothesised that an important antecedent to involvement is time pressure. Time pressure is where the consumer has to deal with a dynamic task environment and where the buyer has to choose between competing time management alternatives, each of which has potential negative consequences (Kerstholt, 1994). For example, the consumer must decide whether or not they should search for more information (a risk reduction strategy) or to spend time evaluating the information they already possess (which may be very limited). Under time pressure, the consumer does not have the ability to undertake both tasks.

When consumers operate under conditions of time pressure;

- The speed of information processing and evaluation of alternatives is increased (although incorrect attributions may take place) (Payne, 1980)
- The techniques the consumer uses to simplify the decision become less cognitively demanding (Payne, 1980)
- Greater weight is placed on potential negative consequences of the decision (Hauser, Urban & Weinberg, 1993) and,

- The consumer will use the least effortful search strategies and employ the most available information source (which may be inaccurate) (Hauser et al., 1993; Klein & Yadav, 1989).

Hence, time pressure should influence the amount and type of information sought in the decision making process (Payne, 1980).

Furthermore, the consumer's *perception* of time pressure is as important as the actual time available to conduct a search for information (Slama & Tashchian, 1985). Motivation to search for information decreases with perception of time pressure, as consumers feel that to search for information is too complex and difficult under time constraints. However, as search decreases under time pressure, there is a commensurate increase in perceptions of risk associated with the purchase (Park, Iyer & Smith, 1989).

In addition, consumers make more incorrect inferences (they deceive themselves about the product's attributes) when they are operating in a decision environment which has high degrees of time pressure (Johar, 1995). However, if the consumer is highly involved in the purchase decision, they are less likely to deceive themselves under time pressure. This phenomenon is potentially due to the higher levels of domain knowledge associated with higher levels of involvement (Houston & Rothschild, 1978; Richins & Bloch, 1991).

The level of domain knowledge associated with involvement may also explain the findings reported by Johar (1995). Johar found that the perception of time pressure is less when the consumer is highly involved in the purchase decision. The involved consumer is likely to be familiar with the product class and be able to determine apposite sources of information, as well as employ a decision-making strategy that limits cognitive effort – saving time and therefore decreasing the perception of time pressure. However, as time pressure is postulated to be an antecedent to further information search activities (Hauser et al., 1993; Kerstholt, 1994; Mazursky & Ganzach, 1998), it is therefore, hypothetically, an antecedent to motivation to search (if not an antecedent to involvement).

As a consequence, we might expect that prospective students who perceive time-pressure should look for less information in the search process (they may be less motivated to search). The student under time-pressure may also rely on one or two 'important' criteria in order to evaluate their choice alternatives. Further, they may seek information from a lesser number of sources and the sources that they use may involve minimal personal and cognitive effort. However, it must be recognised that some students may not perceive time pressure at all.

6.6 Consequences of students' involvement

Consequences of involvement are those *actions* that a consumer undertakes as an outcome of either product class involvement or purchase decision involvement. This definition assumes that involvement, of both types, is a motivational state and that consumers may be motivated to take action relating to their interest in the product or the decision being made. Zaichkowsky (1986 p 6) suggested several possible results of involvement. However, some of these proposed consequences relate to involvement with advertising and as such are not relevant to this discussion. The pertinent consequences are the possible outcomes of purchase decision involvement. *Purchase decision* involvement has the potential to elicit consumer responses in:

1. The consumer's perception of the salience of price in the selection of price
2. The amount and type of information search undertaken by consumers in the buyer decision process
3. The amount of time spent on evaluating alternatives, and
4. The type of choice rule used
5. Product class involvement has the potential to elicit consumer responses in:
6. The development of a brand preference, and
7. The salient attributes applied in the choice rule.

In the choice of a university in Australia, the 'price' of the product is not a contributing factor in the decision (at least for the majority of HECS based enrollees). Although the costs associated with attendance⁵⁰ may influence the decision, the fees are substantially similar for each course within institutions. Accordingly, the salience of price as a criterion in decision-making is not likely to increase as a consequence of involvement within the educational choice domain.

6.6.1 External information search activities

A well-researched consequence of involvement is external information search (Celsi et al., 1992; Cullen & Edgett, 1991; Hempel, 1967; Reid & Crompton, 1993; Smith & Bristor, 1994; Vigneron & Johnson, 1999). Consumer information search consists of two types of search: internal search, in which the consumer recalls what they know about the product and external search, where the consumer seeks for more information than they hold in their memory. The focus of this study is on external information search activities undertaken by prospective students in the university choice domain. Thus, while it is recognised that internal search continues to be an important factor in decision-making (cf (Bettman, 1986; Tybout & Artz, 1994)), this discussion has been limited to external information search.

⁵⁰ Accommodation, fees, books, etc.

Information search has been posited as a consequence of involvement since the late 1960s (Hempel, 1967; Lanzetta & Driscoll, 1968). Furthermore, information search activities are often used as a proxy for involvement (Edgett & Cullen, 1992). However, information search is affected by other factors such as experience (Celsi et al., 1992), the opportunities to purchase the product (Richins & Bloch, 1986), time pressure (Richins & Bloch, 1991) and the ability to acquire information (Slama & Tashchian, 1985). Thus, external information search may not be synonymous with purchase decision involvement.

However, information search activities may increase in intensity with the level of involvement (Hunt, Keaveny & Lee, 1995; Slama & Tashchian, 1985). (Beatty & Smith, 1987) proposed an inverted U shaped curve for external information search in terms of the consumers levels of involvement. Conceptually, involvement should co-vary with external information search. However, others have found that external information search is lower for consumers at both ends of the involvement continuum (Johnson & Russo, 1984; Moorthy, Ratchford & Talukdar, 1997). Therefore, understanding the factors that differentiate high and low involvement consumers, both from each other and those who are neutral, becomes important to marketing strategists.

Involvement requires cognitive effort to sustain at high levels. Indeed, consumers who are not particularly interested in the product class may refuse to be more involved (Hoyer, 1984). That is, they may be concerned about the product but they are unwilling to act upon that concern by increasing information search activities. Hence, the situation may arise whereby the consumer has high levels of purchase decision involvement, but low levels of information search activity due to a relatively low level of product class involvement (Moorthy et al., 1997; Payne, 1976; Punj & Staelin, 1983).

The level of involvement affects the *type* of information search that the consumer undertakes (Simonson, Huber & Payne, 1988). A consumer who has high levels of product class involvement may direct their search towards goal satisfaction rather than attribute comparison (Park & Smith, 1989). Thus, a student, whose main goal is status, may seek information regarding only those attributes that she/he believe may contribute to these status goals.

Involvement also affects the sources of information used by the consumer in the external information search process. For example, consumers seek more interpersonal sources of information when the product is high risk (Cox, 1967). Furthermore, the higher the level of risk, the more consumers rely on interpersonal information, rather than trial or advertising messages (Guseman, 1981). For a service such as education, this is particularly pertinent, as trial is impossible and advertising messages have low levels of credibility. However, if consumers have low levels of access to neutral information, they may continue to seek advice from interpersonal sources, including sales peoples' presentations, when it is a high risk decision (Turley & LeBlanc, 1993).

Involvement may not be entirely antecedent to external information search. Consumers may become involved *after* the acquisition of information, especially if the availability of appropriate information is limited (Mazursky & Ganzach, 1998). The consumer may find out that they require a product after they have already received information regarding the product. In addition, the consumer may not need further information, in which case, there may be no subsequent information search activity.

In terms of university choice, prospective students' external information search activity is expected to be related to their levels of involvement in a number of important ways: a student's involvement directs the type of information they seek and the sources they use in seeking information. In addition, the student may find the information too difficult to evaluate and may withdraw from further information search or evaluation. Therefore, understanding the different levels of involvement and their influence on prospective students' external information search behaviour is an important adjunct to designing effective marketing communications.

6.6.2 Information processing (evaluation)

The information processing literature has a number of fields researching areas as diverse as cognitive processing (Bettman, Payne & Staelin, 1986; Garbarino & Edell, 1997; Payne, 1980) to choice processes (Park, Gardner & Thukral, 1988; Park & Smith, 1989; Ursic & Helgeson, 1990). Thus, the term information processing has come to be applied in a variety of circumstances. For the purposes of this thesis, the type of information processing of interest is contained within the *choice process* literature. This literature explains consumers' choices in terms of costs/benefits and effort/accuracy tradeoffs made in product evaluation tasks (Tybout & Artz, 1994; Tybout, Calder & Sternthal, 1981).

Information processing is the level and type of evaluation undertaken of information received by a consumer in resolving a purchase decision task. It is related to both the ways in which consumers differentiate between alternatives and the effort they are prepared to invest in the decision task. Information processing is influenced by the level of involvement. For example, Gotlieb (1991) found that high levels of involvement are antecedent to a consumer's motivation to indulge in effortful processing of information. In addition, a consumer who is highly involved is more able to make effective comparisons between products and services in their consideration set (Gotlieb & Sarel, 1991). Furthermore, people who are highly involved with the product class remember attributes of the products more accurately (Mazursky & Ganzach, 1998).

As a consequence, we may expect that students who are highly involved may have higher levels of motivation to search for information, as well as more sophisticated choice rules. Further, the attributes they use to trade-off between alternatives may be different from those applied by students who are not highly involved in the purchase decision.

6.6.3 Use of heuristics (choice rules)

Choice rules are often called heuristics and are processes people with experience (although not necessarily *expertise*) are able to use in making a decision. Choice rules simplify the decision making process by enabling the consumer to rely on practical experience rather than scientific knowledge to reach a conclusion about the purchase (Howard, 1994). Thus, consumers may determine that 'all milk is the same' (practical experience) and decide to buy the cheapest (single attribute choice rule). Consumers may use a variety of choice rules depending on their previous experience with the product class and their ability to determine an appropriate choice rule for the purchase situation (Johnson, Meyer & Ghose, 1989). Further, single *rules* may be combined into a decision *strategy* (Monahan, 1984), which consists of the application of a series of rules to a particular decision-making task.

Heuristics function by enabling the consumer to disregard what they see as irrelevant information. While using heuristics involves the possibility of making a mistake, the information processing task becomes feasible in a complex decision making process (Bettman & Park, 1980).

Heuristics are not *rational* choices. They are a mechanism by which consumers attempt to manage a potentially overwhelming decision-making task. Consumers may not be aware that they are using heuristics and may not have a preconceived idea of the manner in which they may make a decision. In addition, consumer preferences may be pre-constructed which makes decision-making extremely simple (there is only one choice) (Bettman, Luce & Payne, 1998).

There are a number of different types of heuristics and indeed many heuristics may be developed without actual experience with a product. It is unlikely that a consumer employs one type of heuristic in all purchase decision tasks (Coupey, Irwin & Payne, 1998). Andrews and Manrai (1998) posit that heuristics occur in two stages: non-compensatory (not cognitively demanding) and compensatory (cognitively demanding). Non-compensatory rules are designed to reduce the evoked set to a small number of brands. Compensatory rules are then used to compare the remaining brands in order to make a final choice.

Choice rules such as: elimination by aspects, conjunctive, disjunctive, weighted adding and lexicographic,⁵¹ are likely to be used by people with experience of the product class (Bettman & Park, 1980). These consumers will be able to use relatively sophisticated processing strategies to evaluate available alternatives (Alba, 1987).

Conversely, those with limited experience may apply choice rules such as multi-attribute models (compensatory) (Johnson et al., 1989), or may delegate the decision entirely (Solomon, 1986). Using a multi-attribute compensatory choice rule requires significant levels of cognitive effort on behalf of the consumer and is used by those who are unable to determine important criteria to use in an alternative choice rule such as elimination-by-aspects or lexicographic. Both elimination-by-aspects and lexicographic choice rules require some consumer knowledge in order to determine a level of importance and an ability to decide which aspects may safely be eliminated from consideration.

Furthermore, consumers who use compensatory (complex) choice rules may be highly involved in the purchase decision as (Hoyer, 1984). However, these perspectives have yet to be tested on students as consumers of the educational product.

Compensatory choice rules assume that consumers make tradeoffs between all alternatives using all attributes. These are called compensatory rules because consumers can use good attributes to compensate for bad attributes (Johnson et al., 1989).

Implicit in compensatory choice rules is the assumption that consumers have access to perfect information and are able to evaluate all attributes equally. Therefore, unless the consumer is confident in their decision-making capability, even if they have sufficient information, they may use a choice rule such as delegation of the decision.

An additional heuristic in educational choice in Victoria is very likely to be the 'ENTER rule'. This rule might be used when the student has limited capacity to make an informed decision (due to lack of expertise or confidence) and therefore uses her/his ENTER score as a proxy for all other attributes. The object in applying this choice rule is to maximise the worth of their ENTER. The assumption underpinning this choice rule is that ENTER 'maximisation', by selecting the most competitive course, may result in better outcomes than if they sought more information about other attributes. This would be consistent with

⁵¹ 1) *Elimination by aspects* choice rules imply that consumers eliminate any products which do not meet some minimum standard before assessing those products which are left in the consideration set. For example, institutions that do not have on campus accommodation facilities might be eliminated from the decision-making process (Bettman et al., 1998). 2) *Conjunctive choice rules* are those where the consumer develops a set of criteria and then chooses the first product which surpasses their minimum requirements on *each* of the criteria. The first considered criterion is the most important but all criteria must meet the minimum standard (Schiffman, 1994). This is called a satisficing choice strategy (Bettman et al., 1998). 3) *Disjunctive choice rules* are where the consumer chooses the first product which performs really well (exceeds the minimum standard) on any of the criteria. All criteria are equally important. This rule is considered as an equal weight choice strategy (Bettman et al., 1998). 4) *The weighted adding choice rule* consists of considering one alternative at a time, examining each of the attributes for that option, multiplying the subjective weighting of the value of the item by the weighting of the attributes importance to the decision (Bettman et al., 1998). 5) *Lexicographic choice rules* are characterised by the consumer ranking all aspects from most important to least important and selecting the product with the highest score on the most important aspects (Bettman et al., 1998).

Garbarino and Edell's (1997) findings; they found that when consumers are unfamiliar with the evaluation task they may choose a brand with a price premium (the highest priced product) in order to decrease cognitive effort⁵². Further, they found that this was most likely when there was time pressure and potential negative consequences from an incorrect decision (Garbarino & Edell, 1997). Students who perceive that their ENTER score represents a value (price) will get the highest possible exchange value in order to decrease the need to search for and evaluate further information. This is particularly likely under time pressure. Time pressure is most likely to result when the student receives an unexpected ENTER score (either higher or lower than expected). Students with higher than expected scores may feel that they should reconsider their decision in order to maximise the value exchanged. This is not surprising, after all, there are few people who would willingly pay more for a product than it was actually worth.

The fact that ENTER score entry requirements are set by supply and demand in the first preference 'market' does not impact on the student's decision. Few students understand the process by which ENTER score entry requirements are set. Their decision is based on the understanding that a higher entry requirement represents a more valuable product.

6.7 Précis of the motivation to search for information argument

In conclusion, involvement is proposed as a motivational state that mediates student choice behaviour in terms of the extent of external information search activity and the level of cognitive effort undertaken by the consumer in evaluating alternatives. Furthermore, involvement and its antecedents should mediate the students' information search activities in terms of the types of information sought, and the types of decision making processes (choice rules) that students use. In addition, motivation to search for information is conceptualised as a multidimensional construct with both antecedents and consequences.

In order to explore these issues in the context of university choice, the following hypotheses have been put forward from among the many which presented during the preceding discussion:

Consumer research suggests that information search activity is associated with the consumer's motivation to search for information. For the purpose of this study we need to determine if this holds true for students operating as rational consumers in a market system. Thus:

H6₁ The antecedents (motivation to search variables) to students' information search activity are associated with students' information search activities

⁵² The concept of the students' ENTER being a value to be exchanged in a market is not inconsistent with marketing theories. However, it needs to be recognised that the value a student has available to 'spend' may be a constraint as well as a facilitator of access to higher education. Thus, price *premium* is relative to the amount the student has to 'spend.'

The question of whether or not motivation to search for information consists of multiple related dimensions such as involvement, interest and risk remains to be established in the consumer literature. Consequently, before examining motivation to search for information as a construct, we need to determine if motivation to search for information is multi-dimensional. Thus:

H6₂ Motivation to search for information is a multidimensional construct

The preferred decision-making strategy (choice rules) of the consumer is usually found to have an impact on their motivation to search for information and therefore their information search activity in the consumer research domain. However, whether or not students follow these patterns of behaviour is the purpose of this study. Thus:

H6₃ Students use a combination of choice rules to facilitate decision-making

H6₄ Students' choice rules are associated with the extent and type of information search activity

H6₅ Students' choice rules are associated with the students' motivation to search

It is suggested that consumers motivation to search for information is associated with the criteria which they use to distinguish between products. This remains to be determined in the educational choice domain. Thus:

H6₆ Students' motivation to search for information is associated with the students' criteria for preferring an institution

6.8 Results

6.8.1 H6₁ The antecedents to students' information search activity (motivation to search for information variables) are associated with students' information search activities

The hypothesised antecedents to information search activity were status aspiration, risk, time pressure, social significance of the educational product, and both purchase decision involvement (PDI) and product class involvement (PCI). These were operationalised using scales developed by consumer behaviour authors (see Chapter Two). The mean differences between the students by their institution of choice are presented in Table 6-1. The bold figures indicate the highest and lowest figures in each column.

Table 6-1: Antecedents to search by institution of choice - means

	<i>PDI</i>	<i>PCI</i>	<i>Risk</i>	<i>Social sig</i>	<i>Status</i>	<i>Time</i>	<i>Total mean</i>
	Mean	Mean	Mean	Mean	Mean	Mean	
Sandstone University	4.07	4.37	3.64	2.89	3.38	2.12	3.41
Post War University	3.82	4.19	3.50	2.69	3.49	2.27	3.33
Flexible University	3.57	3.86	3.21	2.47	3.51	2.30	3.15
University of Technology	3.65	3.94	3.48	2.64	3.31	2.20	3.20
Metro Regional University	3.71	4.06	3.46	2.62	3.39	2.50	3.29
National Specialist University	3.64	3.95	3.50	2.66	3.36	2.27	3.23
Other	2.87	3.62	3.38	2.42	3.50	2.25	3.01
Total	3.74	4.07	3.46	2.67	3.41	2.26	3.27
Significance (ANOVA)	0.000	0.000	0.013	0.041	0.616	.095	

It appears that Sandstone University students have the highest motivation to search for information of any of the student groups. If we compare the results of information search intensity from Chapter Five, this finding is not consistent with that of earlier authors who have found that information search activity is directly related to the consumer's motivation to search. It appears that one may be the most highly motivated but not search with the greatest intensity. However, the result between students at particular institutions was not significant. As a consequence further investigation is necessary at the overall level.

Table 6-2: Motivation search variables and their relationships with extent of search and type of information search activity.

	<i>PCI</i>	<i>PDI</i>	<i>Risk</i>	<i>Social sig</i>	<i>Status</i>	<i>Time</i>
Promotional information search	.120**	.274***	.241**	.171**	.134**	.062
Interpersonal information search	.092*	.243***	.196**	.088*	.076‡	-.012
Experiential information search	.087*	.101*	.170**	.067*	.046	.101*
General information search	.081*	.255***	.173**	.152**	.049	.016
Extent of search	.111**	.294***	.231**	.157**	.053	.024
Number of institutions considered	-.011	.032	.125**	.025	.061	.096*

*** Pearson correlation significant at the 0.000 level (2-tailed). ** Correlation significant at the 0.01 level (2-tailed). * Correlation significant at the 0.05 level (2-tailed). ‡ Correlation is significant at the 0.10 level (2-tailed).

The results illustrated in Table 6-2 demonstrate that there are relationships between types of information search and each of the motivation to search variables with the exception of time pressure. *Time pressure* is associated with experiential search and is slightly associated with number of institutions considered. Interestingly, though slight, the association is positive, indicating that students, who perceive time pressure, may seek information at a greater rate than their less pressured peers do. The perception of pressure may stem from their inability to assimilate the information they collect. Again, this result was unexpected; it was expected that students would *decrease* information search activity as a result of time pressure. Furthermore, time pressure, in this context, may be a result of students achieving an unexpected ENTER score (either higher or lower than expected). Thus, students who have

been making plans based on an expectation, feel as if they must search quickly for another alternative and therefore, conduct a more extensive search than others who may be less pressured.

The results regarding the two types of involvement support the work of Hunt, Keaveney and Lee (1995) and demonstrate that *product class involvement* and *purchase decision involvement* are not synonymous constructs. There are different correlations between the variables and the various types of information search activity. Indeed, purchase decision involvement has higher correlation with information search activity than does product class involvement in this context. This result possibly challenges the arguments of consumer behaviour authors (cf Mittal, Celsi, Zaichkowsky and others), who posit that interest in the product class should be a better predictor of information search than a specific purchase decision task. However, students, as a group of consumers who *must* buy the product because of social and perhaps political pressure, may feasibly demonstrate little interest in the product class. Furthermore purchase decision involvement may be more strongly related to information search activity because it relates to a specific and ‘real’ purchasing situation that the student has recently undertaken. Potentially, purchase decision involvement is more strongly related to information search activity because the items are specific to an institution, and do not ask students to abstract their opinions to institutions at large.

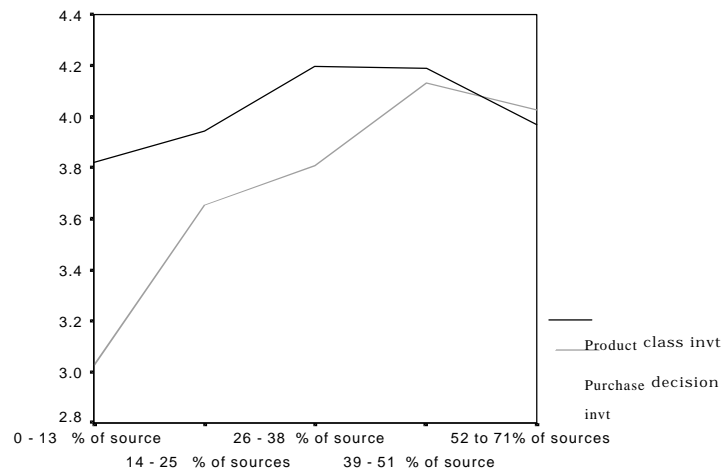


Figure 6-2: Purchase decision involvement and Product class involvement (means) and extent of search

Figure 6-2 shows that the position adopted by Moorthy (1997) is also acceptable in the student decision-making domain; external information search is lower at both ends of the involvement continuum. However, there is less variation in levels of product class involvement than there is in the level of purchase decision involvement.

Another element to be considered in students' motivation to search for information is risk. In Table 6-2, *Risk* has a greater association with information search activity than product class involvement. Students with higher risk perceptions show higher levels of interpersonal information search. Further, it appears that Sandstone University students have the highest levels of risk perception of any of the groups of students. This is consistent with the results presented in Chapter Four, which showed that *reputation* was most important to Sandstone University students. Choosing reputation as a key criterion is a risk reduction strategy (Guseman, 1981). In addition, risk is the only variable in the student's motivation to search for information that is associated with the size of the student's consideration set.

Status aspiration is associated with information search activity on two dimensions: promotional and interpersonal information search activities. The latter association was somewhat expected because students seeking status may seek information within the group that provides them with their status anchor points. However, it was not expected that promotional information search activity could have a greater association with status aspiration than interpersonal information search activity.

Social significance of the educational product is associated with information search activity on all dimensions. In particular, social significance is associated with promotional and general information search. This is counterintuitive, as one could expect students to seek interpersonal (social) sources of information when the product is socially significant.

It was suspected that the *social significance* and *status aspiration* results might have been an artifact of the socio-economic status of the cohort of students; students may not have been able to access a knowledgeable interpersonal reference group. Accordingly, the motivations to search for information results were analysed using ANOVA with the socioeconomic status of the students. No significant differences were identified. A conceivable explanation for these findings could be that students seek *confirmation* of their interpersonal information search with promotional and general information search activities.

In conclusion H6₁ is not rejected; there are relationships between students' motivation to search variables and their information search activities in both extent and type of information search. However, time pressure does not significantly influence all types of information search activity.

6.8.2 H6₂ *Motivation to search is a multidimensional construct*

The question of whether or not motivation to search for information consists of multiple related dimensions such as involvement, interest and risk remains to be established in the consumer literature. Consequently, before examining motivation to search for information as a construct, we need to determine if motivation to search for information is multi-dimensional. Thus: motivation to search is an hypothesised construct. The variables that

were postulated to be associated with each other have been examined using Pearson Correlations. The results are presented in Table 6-3.

Table 6-3: Correlations between motivation to search variables

	<i>Status Asp</i>	<i>Time</i>	<i>Social Sig</i>	<i>RISK</i>	<i>PDI</i>	<i>PCI</i>
Status aspiration	1.000					
Computed time pressure	-.028	1.000				
Social Significance	.178***	-.034	1.000			
Risk	.145***	.145***	.247***	1.000		
Purchase decision involvement	.094*	.043	.302***	.402***	1.000	
Product class involvement	.052	.036	.197***	.303***	.492***	1.000
N	576	576	576	576	576	576

*** Pearson Correlation is significant at the 0.001 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed). † Correlation is significant at the 0.10 level (2-tailed).

There are associations between most of the variables in the construct. However, time pressure is associated with risk perceptions and is not associated with the other variables. These variables were analysed using exploratory factor analysis to examine if there are any underlying dimensions in the relationships between variables. The *direct oblimin* method and co-variance matrix techniques were used to determine the divergence between variables (Table 6-4). It may be seen that time pressure does not significantly co-vary with any of the variables and is not clearly assigned to a dimension by the technique. We may conclude therefore, that the previously identified association between motivation to search and time pressure may be spurious. Furthermore, the covariance structure analysis identified two possible dimensions to motivation to search for information. Subsequent exploratory factor analysis using correlation analysis and varimax rotation did not indicate the existence of separate dimensions. However, confirmatory factor analysis illustrated a relationship between the variables status aspiration and the social significance of the educational product (Figure 6-3).

Table 6-4: Rotated component matrix - Motivation to search.

	<i>Raw Component</i>		<i>Rescaled Component</i>	
	1	2	1	2
Purchase decision involvement	.837		.873	
Product class involvement	.669	-.091	.773	-.105
Risk	.484	.140	.611	.177
Status aspiration		.730		.853
Social significance	.370	.513	.421	.584
Time pressure	.102	-.122	.138	-.166

Extraction Method: Principal Component Analysis. Covariance Matrix Rotation Method: Oblimin with Kaiser Normalization.

The variables were further analysed using confirmatory factor analysis (SPSS - AMOS). An explanation about interpreting AMOS output has been included in Appendix E.

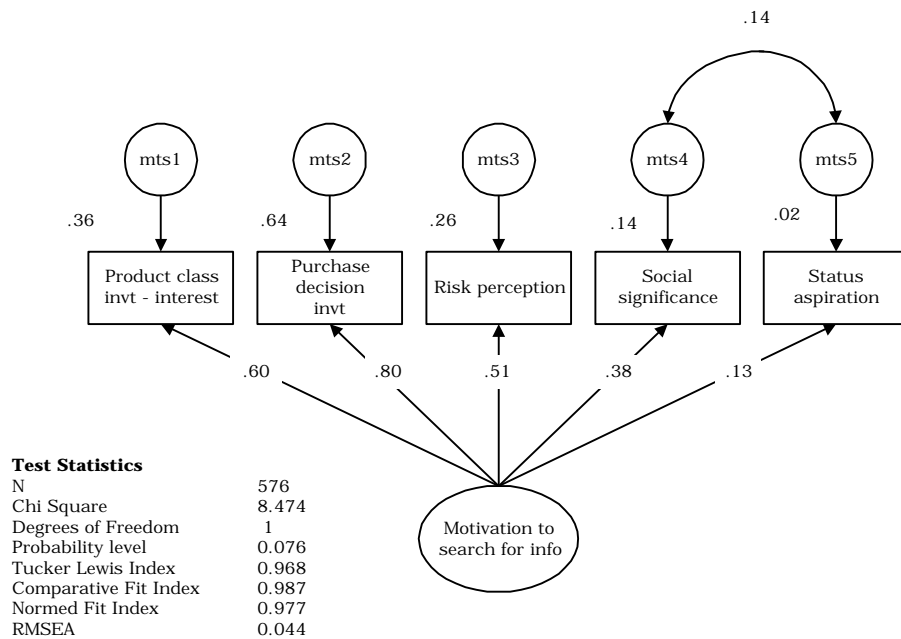


Figure 6-3: Motivation to search structural equation model

The structural equation model developed is significant at the 0.05 level. The impact of status aspiration on the latent variable *motivation to search* for information is relatively low with 13% of the variance in the model contributed by the status aspiration variable. There is a significant co-variance between social significance and status aspiration; hence its inclusion in this model. However, motivation to search for information is potentially better measured by the three variables, product class involvement, purchase decision involvement and risk perception.

The greatest contribution to the variance in a student’s motivation to search is their purchase decision involvement, followed by the student’s product class involvement and risk perceptions. Importantly, students status aspiration and the social significance of the product also contribute to their motivation to search for information, albeit at a lesser level. Therefore, there is some merit in considering multiple motivational dimensions, rather than a single dimension such as product importance as suggested by Mittal (1995).

Furthermore, students’ information search behaviour is different depending on what is the most salient dimension for the student. For example, students who perceive high risks may seek differing information than those who have high levels of interest in the product class. As a consequence, considering the multiple dimensions of motivation to search for information will be important to marketers of institutions. **Therefore H6₂ is not rejected; we may conclude from these results that motivation to search for information is a**

construct consisting of multiple factors that may contribute to a latent variable ‘motivation’.

6.8.3 H₆₃ Students use a combination of choice rules to facilitate decision-making

One of the consequences of involvement posited earlier was the use of choice rules by the consumer. The student’s decision strategies (combination of choice rules used) were explored by asking the students to nominate their level of agreement with statements describing their decision-making behaviour. It was hypothesised that the student’s decision making choice rules combine and become a student’s decision-making strategy. That is, the combination of rules which make up their overall approach to decision-making in the environment (Table 6-5).

Table 6-5: Correlations between choice rules

	<i>Compens</i>	<i>Conjunct</i>	<i>Disjunct</i>	<i>Elim by A</i>	<i>Lexicog</i>	<i>Sub-Cont</i>	<i>ENTER</i>
Compensatory choice rule	1.000						
Conjunctive choice rule	.030	1.000					
Disjunctive choice rule	.127**	.408**	1.000				
Elimination by aspects	.209***	.077‡	.063	1.000			
Lexicographic choice rule	.390***	.121**	.155***	.399***	1.000		
Subcontracted choice rule	.107**	.144**	.152***	.038	.090‡	1.000	
Used the highest ENTER	.031	.197***	.128**	-.045	.066	.184***	1.000
N	576	576	576	576	576	576	576

*** Pearson Correlation is significant at the 0.001 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed). ‡ Correlation is significant at the 0.10 level (2-tailed).

The strongest associations are between *elimination-by-aspects* and *lexicographic* rules and the *compensatory* rule. These rules are the most difficult to apply and require a degree of expertise as they involve some complex tradeoffs in the decision making process. However, students also use the ENTER rule in conjunction with sophisticated decision-making – indicating that ENTER score may be used as a proxy for some criterion in decision-making.

Furthermore, there are significant associations between *conjunctive* and *disjunctive* decision-making. Both these rules are relatively simple ‘satisficing’ rules, in that once students reach a satisfactory decision, they consider no further alternatives. As one is supposedly the reverse of the other, this result is at variance with the literature on decision-making rule application which suggests that consumers will apply one rule or the other – not both.

Therefore H₆₃ is not rejected; the level of association between choice rules indicates that students do not use a single choice rule in order to make a decision and indeed, it appears most students use a combination of the rules identified.

6.8.4 H6₄ Students' choice rules are associated with the extent and type of information search activity

The results of the decision-making style that the student used were analysed using exploratory factor analysis. Table 6-6 shows the results of the rotated factor analysis.

Table 6-6: Rotated Component Matrix of Choice Rules

	Component				
	<i>Complex</i>	<i>Simple</i>	<i>External</i>	<i>Alpha</i>	<i>Std Alpha</i>
Lexicographic choice rule	.806	.122			
Elimination by aspects	.712		-.175		
Compensatory choice rule	.702		.187	0.5994	0.5994
Conjunctive choice rule		.837	.126		
Disjunctive choice rule	.113	.812		0.5730	0.5730
Subcontracted choice rule	.120		.761		
Used the highest TER choice rule		.162	.731	*	

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 5 iterations.

The factors were used to generate composite variables. *External* was used to describe the type of decision-making that was other centred and therefore *external* to the student. That is, students who either sub-contracted the decision to another or students who relied on the ENTER score to effectively make the decision for them, thereby circumventing the decision-making process in another way. *Complex* was used to describe the type of decision-making that would have taken a significant degree of cognitive effort in comparison between institutions. The term *Simple* encompasses those choice rules that are simplest to apply to a decision-making task, such as conjunctive or disjunctive methods of decision-making. The bold figures represent the highest result in each column.

Table 6-7 : Choice rules by institution of choice

	<i>External</i>	<i>Complex</i>	<i>Simple</i>
Sandstone University	2.82	3.18	2.51
Post War University	2.81	3.34	2.76
Flexible University	2.48	3.22	2.68
University of Technology	2.75	3.15	2.65
Metro Regional University	2.96	3.08	2.80
National Specialist University	2.60	3.32	2.70
Other	2.81	3.04	3.12
Total	2.73	3.22	2.68
N	576	576	576
ANOVA Sig	0.055	0.369	0.234

In reviewing choice rule application analysed by students' institution of choice, the only variable that has a significant difference is the propensity to use others in the decision making process. Otherwise the student groups are relatively equal in their decision-making behaviour.

In terms of the propensity to use others, Flexible University students are the least likely to use *external* decision-making, Metro Regional University students are those most likely to use *external* decision-making. The Flexible University result is somewhat predictable if one takes into account the relative age of Flexible University’s student population and the type of entry of the students. However, Metro Regional University students would appear to be less self-reliant decision-makers than their counterparts in other institutions.

Table 6-8: Correlations between choice rules and information search activity

	<i>Complex</i>	<i>External</i>	<i>Simple</i>
Extent of information search activity	.238***	.055	-.036
General information search activity	.238***	.016	.010
Promotional information search activity	.223***	.115**	-.044
Interpersonal information search activity	.138**	.101**	-.097*
Experiential information search activity	.116**	.044	-.017

*** Pearson Correlation significant at the 0.001 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed). ‡ Correlation is significant at the 0.10 level (2-tailed).

Complex decision-making is positively associated with information search activity. This result is consistent with the concept that consumers who are more sophisticated decision-makers require more information on which to base their decisions. However, it is not consistent with the theory that choice rules are used to circumvent information search. **Therefore, while H6₄ is not rejected; choice rules and information search activities are associated, it is not clear that students use choice rules to limit their information search activities. Indeed, it appears that students use information search activities to enable them to apply a complex decision-making strategy.**

6.8.5 H6₅ Students’ choice rules are associated with the student’s motivation to search

A student’s motivation to search for information should be related to the decision-making strategy they deploy. Hoyer (1984) suggested that highly involved consumers were more likely to use compensatory choice rules. The results (Table 6-9) confirm that this may be correct. However, risk and interest in the product class are also associated with complex decision-making, suggesting that a student’s motivation to search for information is not a simple matter of product importance as suggested by Mittal (1989).

Product class involvement and purchase decision involvement are both associated with complex decision-making, although at varying levels. Further, product class involvement is negatively associated with simple decision-making. This result lends some credence to the viewpoint that people with an interest in the product are more able to use multi-attribute choice rules.

Table 6-9: Choice rules and motivation to search variables

	<i>Complex</i>	<i>External</i>	<i>Simple</i>
Product class involvement	.185***	-.033	-.071‡
Purchase decision involvement	.362***	.042	-.052
RISK	.275***	.152***	.089*
Social significance	.193***	.155***	.064
SA - status aspiration	.083*	.143***	.016
	576	576	576

*** Pearson Correlation significant at the 0.001 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed). ‡ Correlation is significant at the 0.10 level (2-tailed).

The *risk* associated with the purchase decision produces some intriguing results. In both purchase decision involvement and product class involvement, there are slight negative results for *simple* and *external* decision-making strategies; indicating that as the student becomes more involved in the purchase decision making process, the student is less likely to use others in the decision-making task or to use a simple form of heuristic. However, risk *increases* the likelihood that the student may use others or simplify the decision. When considered in conjunction with H6₄, this result supports the argument that for some students the decision is simply too difficult to make by themselves.

The *social significance* of the educational product is positively associated with *complex* and *external* decision-making. This illustrates that students may use *external* decision-making as a heuristic when the decision-making task becomes too complex and the social risk is high. While this possibility was identified earlier, the results are not consistent with the contention that increasing social significance increases the propensity to search for interpersonal information. Promotional information search had a stronger association with social significance.

Status aspiration is positively associated with both *complex* and *external* decision-making. However the strongest association is with *external* decision-making, indicating that students who have the highest levels of status aspiration are also more likely to use *others* in the decision-making process.

Consequently, H6₅ is not rejected; there are associations between students' choice rules and their motivation to search.

6.8.6 H₆ Students motivation to search for information is associated with the students' criteria for preferring an institution

The motivation to search for information variables were correlated with the dimensions of students' criteria for developing a preference for an institution established in Chapter Four. Table 6-10 shows that there are many significant associations between the motivation to search for information variables and the dimensions of students' criteria.

Table 6-10: Students' motivation to search for information and their criteria for preference

	<i>CRI Status</i>	<i>CRI Personal</i>	<i>CRI Performance</i>	<i>CRI Functional</i>	<i>CRI Accessibility</i>
Purchase decision involvement	.251***	.128**	.173***	.187***	-.044
Product class involvement	.183***	.060	.115**	.113**	-.122**
RISK	.204***	.147***	.184***	.144**	-.021
Social significance	.228***	.117**	.101‡	.133**	-.015
SA - status aspiration	.124**	.051	.081*	.040	-.105*
TIME- Pressure	.037	.043	.014	.014	.059
N	576	576	576	576	576

** Pearson Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed). ‡ Correlation is significant at the 0.10 level (2-tailed).

The strongest associations between motivation to search for information variables and students' importance ratings are with *status* criteria. We may infer that students are more or less motivated to search due to status requirements. However, other interesting associations exist. For example, accessibility is negatively associated with motivation to search for information. This may be indicative of the situation where the student who is minimally motivated is seeking for 'which university will have me?' Another association, which may be important to marketers of institutions, is the link between status aspiration and accessibility criteria. This may illustrate the circumstances whereby a student seeking status and performance (achievement related issues) is also seeking a selective admissions institution. **Accordingly, we cannot reject H₆; there are associations between students choice rules and their motivation to search for information.**

6.9 Discussion

<i>Hypothesis</i>	<i>Findings</i>
H6 ₁ The antecedents to information search activity are associated with students' information search activity	Not rejected; students motivation to search for information varies significantly with their information search activity. However, a number of differences between these findings and the consumer behaviour literature research exist. For example, students time pressure perceptions are positively associated with their search activity.
H6 ₂ Motivation to search for information is a multidimensional construct	Not rejected; in identifying the dimensions of motivation to search for information, it is reasonably clear that motivation to search for information may be modelled as a multidimensional construct containing dimensions of product class involvement, purchase decision involvement, and risk perceptions.
H6 ₃ Students use a combination of choice rules to facilitate decision-making	Not rejected; students do not rely on one type of decision-making strategy. While this was somewhat expected, the propensity of some students to delegate the decision to others and to rely on the ENTER score indicates a degree of unwillingness to fully participate in the decision making task.
H6 ₄ Students' choice rules are associated with the extent and type of information search activity	Not rejected; while information search activity and choice rules are associated, it is not clear if students use choice rules to limit their information search activity, as suggested by the consumer behaviour literature. Indeed, the more complex the decision making rule applied, the more likely the student is to have conducted an intensive and extensive search.
H6 ₅ Student's choice rules are associated with the students' motivation to search	Not rejected; students motivation to search for information variables are associated in different ways with the students use of choice rules. Risk perceptions increase the likelihood that students will delegate the decision to another. However, both types of involvement (product class involvement and purchase decision involvement) are associated with the use of complex choice rules.
H6 ₆ Students' motivation to search for information is associated with the students' criteria for preferring an institution.	Not rejected; There are positive associations between most motivational variables and the students' criteria, with the exception of accessibility which was negatively associated. The motivational variables status aspiration and time pressure were not significantly associated with students' criteria for preference.

The results demonstrate that the involvement construct, as currently described in the literature may be expanded to include other motivational variables such as status aspiration, risk and the social significance of the product – producing a more inclusive concept called *motivation to search for information*. Of course, in some product decisions this expansion would be inappropriate. However, the product under consideration here is both socially significant and contributes to the student's status aspirations. The data demonstrate that, in these circumstances, these other motivational variables are important.

The relationships between the motivational variables present some insights into the emotional and affective needs of students. In a socially significant purchase, the social implications of the decision may not be ignored. This, to a certain extent, explains some of the students' reliance on social and emotional criteria as highlighted in Chapter Four. For marketers of institutions, the social and aspirational components of the institutional image become an important marketing tool when students' status aspirations are more strongly associated with promotional information search activity than with other forms of information.

An unexpected finding was that time pressure does not significantly contribute to the students' search (or lack thereof). It was expected that students would not seek information when under time pressure. However, while students vary in their perceptions of time pressure, time pressure does not contribute strongly to information search behaviour or use of choice rules. One possible explanation is that students gather information over such long periods of time that they do not gather further information when they are active in establishing their final preference. Hence, time pressure, while felt, does not significantly influence students' choices.

The examination of the students' decision strategies shows a propensity to use a combination of *simple* and *external* centred decision-making or *complex* decision-making strategies. Consequently, we may infer that some students may not be able to evaluate the information that is currently provided by institutions; thus do not actively seek information. Indeed, students who rely on *simple* decision-making rules, seek less information overall. This confirms the contention that some students are dissuaded from seeking information. Further, *simple* decision rules are single attribute, decreasing the need to collect substantial information to enable multi-attribute comparisons.

The comparison of students' decision-making rules and their motivation to search for information illustrates that students who use single attribute choice rules are less highly motivated than students who use complex choice rules. Interestingly, while *external* centred decision-making is a simplification technique, it does not show a commensurate decrease in motivation to search for information. This result further supports the argument that some students may be highly motivated, search for information, and then find that they are still unable to make the decision by themselves.

The association between students' motivation to search for information and their criteria for preferring an institution supports the argument that some students are not making free choices in an open market system. It appears that some students ask 'which university will have me.' In this sense, they are not behaving as customers – where else does one find a customer who seeks to be *allowed* to buy the product? A commensurate scenario would be in attaining club membership, whereby the status attached to being a part of a select group is potentially more important than any of the specific benefits offered by the club's facilities.

In conclusion, this chapter has illustrated that students may not be economically rational consumers of the educational product. Affective and social considerations are important in the decision making process. Students' choice rules demonstrate that there is a group of students who may rely on others in the decision making process – thus circumventing *active* decision-making and still arriving at a 'choice.' However, one cannot say that a choice made by another is a decision made by the student, A decision made by another, however made, is not a reasoned judgement made by the prospective student. The following chapter explores how students' motivation to search for information is influenced by their decision-making capabilities.

7.1 Introduction

The previous chapters have focussed on *what* prospective students choose in a constrained environment, *why* they choose a particular institution and *how* that choice is made. This chapter focuses on the decision-making capability of the prospective student in choosing an institution to attend. It is the last of the three chapters aimed at demonstrating *how* people choose an institution. The shaded area of the diagram illustrates the current focus. It is hypothesised that decision-making capability has an affect on motivation to search for information and therefore, the external information search activities of the student (as customer). The purpose of this chapter is to provide an overview of the effect of consumers' decision-making capability on motivation to search for information and information search activity. Although decision-making capability is considered antecedent to both motivation to search and information search activity, it has been necessary to understand these latter concepts prior to the discussion of decision-making capability. In addition, this chapter covers similar conceptual material as that contained in Chapters Five and Six. However, the potential redundancy is considered necessary to the discussion relating these concepts. Each chapter deals with the issues from a different perspective.

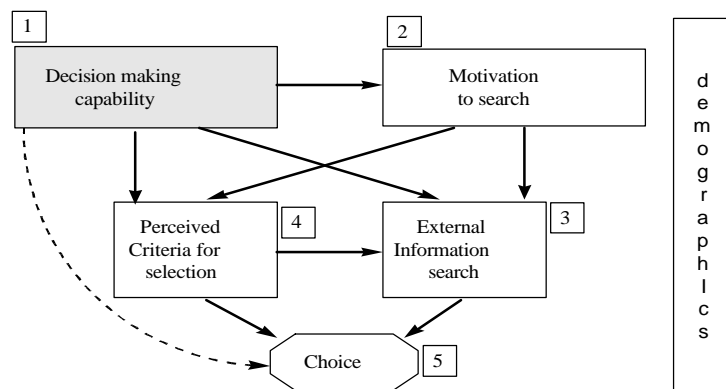


Figure 7-1. Conceptual framework – Decision-making capability

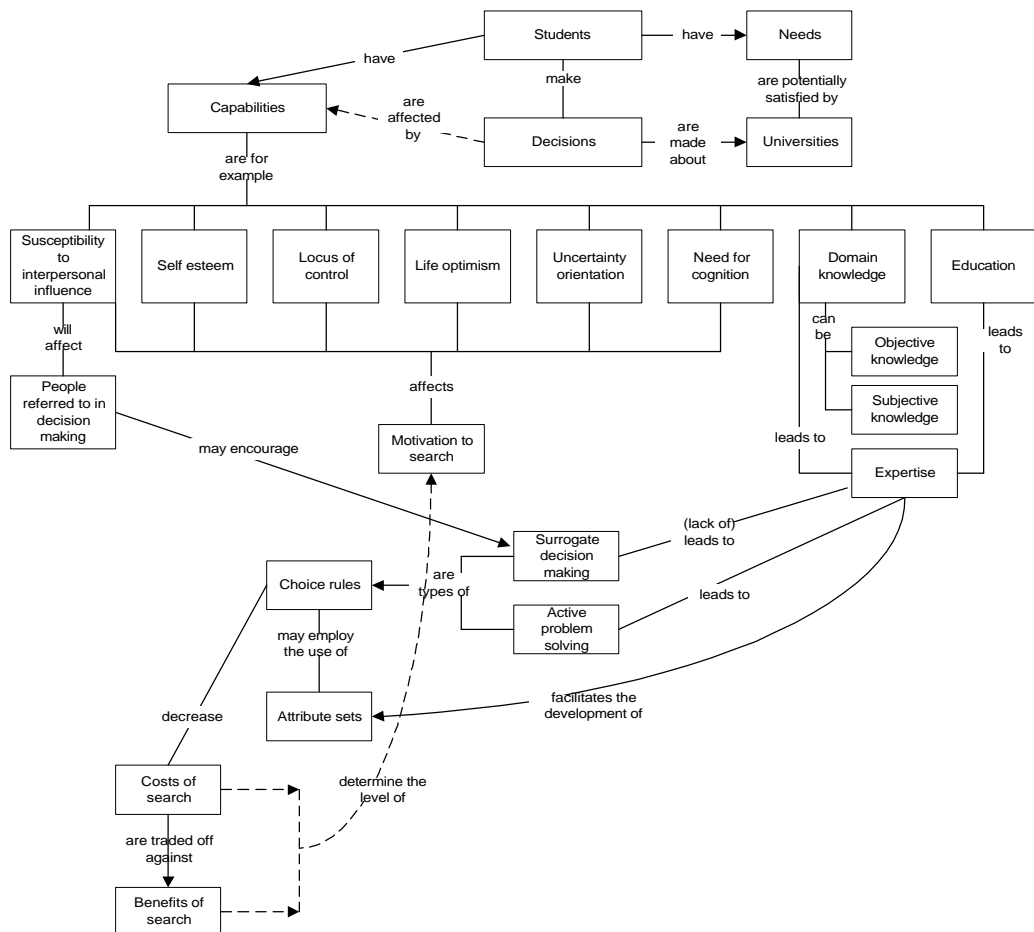
Students' choices of institution are affected by the types of future they seek for themselves in terms of career, income and status outcomes of the decision. As discussed earlier, the process of choosing an institution to attend is as much affected by the student's capacity, as it is their educational capabilities. That is, they are *chosen* by an institution as much as they *choose*.

However, the student will choose between institutions in a consideration set. The consideration set is developed over time and with continuous calculation of the student's

educational capabilities. How students choose between institutions *within* the consideration set is the question under examination in this thesis. In order to investigate this, we need to consider what other factors affect the student's ability to make a decision.

7.2 Concept map of decision-making capability theoretical perspectives

The following diagram represents the conceptual coverage of this chapter. It is best interpreted by commencing at the box entitled **students** and working down the page unless the arrows indicate a direction. This concept map indicates linkages between the concepts discussed here and earlier chapters. The reader is reminded that it provides a visual road map of the issues and is not intended to present hypotheses.



Conceptual map 7-1: Decision making capability

7.3 Ability to search for information

Schmidt and Spreng (1996) suggest that the ability to search for information, and process the information found, is a key differentiating factor in consumer behaviour decision-making processes. They propose that *ability* to search is comprised of the following factors.

- The consumer perceives that they have an ability (or not) and will seek information (or not) according to their self perceived capabilities
- A consumer's level of knowledge about the product class will determine their perception of their ability to seek information.
- A consumer's level of education will determine both the perceived and real capabilities of the consumer to search for information about the product class.

The ability to search for information is also affected by a number of other personal traits such as locus of control (Srinivasan & Ratchford, 1991), self-esteem (Kassarjian, 1971), life optimism (Braungart & Braungart, 1996), uncertainty orientation (Urbany, Dickson & Wilkie, 1989) and need for cognition (MacInnis & Jaworski, 1989). These factors will be considered in further depth in this chapter. Motivation to search and information search activity are discussed in earlier chapters. The research framework adopted for the purposes of discussion does not imply that the factors discussed are mutually exclusive. For example, a person's locus of control is likely to be associated with their motivation to search.

7.4 Expertise in the decision-making domain

Alba and Hutchinson (1987) suggest that there are two types of consumer knowledge: *familiarity*, which is based on experience with the product or product class, and *expertise*, which is based on the ability to perform product-related tasks. Expertise is comprised of *subjective knowledge*; that is, the subject may believe they have knowledge of the product class (Mitchell & Dacin, 1996). In addition, expertise comprises *objective knowledge*; that is, when the consumer has product related memories which are accurate and can be measured by some objective means (Rao & Sieben, 1992). Knowledge of both types leads to expertise in a product related task (de Bont & Schoormans, 1995). It is necessary to consider both objective and subjective knowledge due to the likelihood of inaccuracy in determining levels of subjective knowledge (Selnes & Troye, 1989).

7.4.1 Students' expertise and their motivation to search

Expertise has been linked to a person's motivation to search for information in relation to a decision-making task (Park & Leissig, 1981). As discovered in Chapter Six, motivation to search for information is comprised of multiple dimensions, all of which may be affected by the students' expertise in the decision-making domain. A student's motivation to search is

their felt need to search for information relevant to the purchase decision. Motivation to search for information is affected by the perceived importance of the product. Further, it is influenced by students' perceptions of risk and interest in the educational product. In addition, the symbolic and social significance of the product to the student, as well as students' needs and aspirations may influence their level of motivation. Finally, motivation to search for information is affected by students' interest in the educational product.

7.4.1.1 Expertise and involvement

One dimension of motivation to search for information which co-varies with expertise is the consumer's enduring involvement or interest in the product (Mitchell & Dacin, 1996; Petty & Cacioppo, 1986). *Product class involvement* endures beyond the specific purchase decision and is most strongly linked to the expertise of the buyer. However, it is not clear if product class involvement is developed through undertaking a decision-making task or if it exists prior to the task and increases the level of *purchase decision involvement*. Nevertheless, a student who is expert can be expected to be higher in both expertise and product class involvement.

Purchase decision involvement is non-enduring and relates to a specific decision task. In a high involvement purchase situation, such as education, it is to be expected that all purchasers may experience relatively high levels of purchase decision involvement, although they may not have equally high levels of product class involvement. East (1992) argues that for a decision to be categorised as high involvement the buyer must develop some expertise throughout the decision-making process. Consequently, a highly involved purchaser should also be highly expert. This is questionable in a purchase situation where expertise is difficult to obtain due to the credence qualities of the product. In this study, it is posited that *students* may be highly involved in the purchase decision without rating highly on subjective or objective knowledge. In addition, it is argued that the student's expertise may be differentially related to the different types of involvement. However, it is accepted that, overall, involvement may be greater when expertise is greater as has been found in many other studies (Baumgartner, Sujan & Bettman, 1992; Lascu, Bearden & Rose, 1995; Schmidt & Spreng, 1996; Sujan, 1985).

7.4.1.2 Expertise and risk

Another dimension of motivation to search is the risk associated with the purchase. The higher the perceived risks associated with purchase the more search is undertaken (Coleman, Warren & Huston, 1995; Cox, 1967; Dowling & Staelin, 1994). Selnes and Troy (1989) argue that experts become expert because they have higher levels of perceived risk (that is, developing expertise is a risk reducing strategy). Thus, the higher the student's level of perceived risk, the more likely they are to have a high degree of objective knowledge. However, the risk⇒expertise relationship may not extend to the student's levels of subjective

knowledge. Greater levels of objective knowledge may not increase the student's perception of their subjective knowledge levels in a high-risk decision. It may be that no amount of information search may be sufficient to make them comfortable with their ability to make the decision. Thus, while expertise may increase the perceived benefits of search by lowering perceived risk (Hansen, 1976; Selnes & Troye, 1989), there are some decisions where perceived risk is not significantly reduced by expertise.

7.4.2 Students' expertise and their information search activity

Expertise in the consumer research domain has also been linked to the information search process. Further, a student's decision-making capability may be affected by their expertise in the field of university choice (the knowledge domain). A student may seek information relating to the decision if they are either unfamiliar with the situation or unconfident about their knowledge (Park & Leissig, 1981). Therefore, the students most likely to be the most active searchers for information are those students whose background and contacts limit the availability of memory based knowledge, and those whose capacity to build expertise prior to the decision-making task is limited.⁵³

7.4.2.1 Expertise and non personal information search

Information search can be personal or non-personal. Non-personal and experiential information search is likely to lead to higher levels of objective expertise. Overall, the consumer who has significant levels of domain knowledge is likely to have conducted a greater degree of search (Alba & Hutchinson, 1987; Selnes & Troye, 1989).

In the university choice context, domain knowledge could be general knowledge (about courses and programs) or specific knowledge (about libraries, specialist subjects, staffing profiles). Therefore, the student who has higher degrees of domain knowledge should also have conducted an intense search for specific information. However, this is not necessarily true of the student who has a high degree of subjective knowledge. It is quite possible to feel confident about your degree of knowledge and to know relatively little in an objective sense (as any examiner of student assessment tasks will be well aware).

Alba and Hutchinson (1987) also suggest that experts search because they know what to look for and where. However, in this domain it is difficult to determine if experts become expert *during* the search process, or if they are expert *before* they begin to seek for information. In a decision such as educational choice, where students gain information over an extended period of time, it is argued that students may not seek more information if they are experts. It is more likely that those who perceive they have gaps in their knowledge may seek information (Park, Gardner & Thukral, 1988). Thus, the student 'who was always going to

⁵³ For example: first generation university students, those from lower socioeconomic status and disadvantaged groups. Included in this category of student would be females who also may not have the knowledge developed from previous generations of tertiary students in the family.

attend Sandstone University' will not seek information as they have sufficient knowledge to make their decision. The student who is not confident of their knowledge, or their capabilities in gaining admission to Sandstone University, will seek more information.

Knowledge also affects the quantity and type of information acquired in the search process. Students with greater degrees of knowledge are able to discern relevant information and may spend less time evaluating alternatives, as they may have an understanding of what is important to the decision. In addition, experts are able to decrease the amount of search effort because they focus search effort to relevant information. Experts are more parsimonious in their information storage and search activities (Selnes & Troye, 1989). Thus, experts in the educational choice decision may know more but search less (Bettman & Park, 1980; Howard, 1969). However, Bettman suggests that information search is likely to be greater if the person knows a great deal or if they know a little (Bettman & Park, 1980). Consequently, the curve generated resembles a U shape, with information search greatest at both ends of the U. It is argued that naïve students are likely to search less because they feel unable to evaluate the institutions and experts may feel that they do not need to search. Thus, in educational choice, the U shaped curve is likely to be inverted.

Further, experts may only seek and rely on information which they perceive as directly relevant to their decision. For institutions, attempting to attract students who are *not* seeking information will be problematic. From a marketing perspective, experts will be the target market (assuming expertise and academic performance are related). However, experts may be the most difficult to reach with communication efforts as they may not actively seek information regarding the institution. Furthermore, experts may seek information which they perceive to be relevant but which the institution may not willingly provide (such as benchmarking data).

7.4.2.1.1 Expertise, information search and time pressure

Newman and Staelin (1971) found that buyers who are more familiar with the domain may spend less time searching for information. In addition, they suggest that experts may be able to make decisions in less time than their less knowledgeable counterparts. Furthermore, people with higher levels of subjective knowledge may not feel as *pressured* in the purchase task if time availability is short (Sujan, 1985). For students, this is particularly important. Students may make a decision over many years taking into account both their capacity and capability. However, if their capability assessment is not accurate (they do not attain the ENTER they were expecting), students may feel intense time pressure in seeking appropriate alternatives. Thus, students who have been 'certain' they would attend Sandstone University to study business may find that their alternatives at Sandstone are very limited and they must seek business courses elsewhere. In these cases, the student may assume that all alternatives other than Sandstone are equal (as is often the case when expertise levels are low). In

addition, if they feel intense time pressure they may feel they cannot make such a complex evaluation within the given time frame (Hauser, Urban & Weinberg, 1993; Kerstholt, 1994).

From a marketing perspective, the level of felt time pressure is important for institutions to consider. As considered in Chapter Six, students making decisions under time pressure may use the simplest heuristic they can in order to reduce the felt pressure. Thus, reputation and familiarity may become the foremost criteria and/or others may make the decision for the student. In these circumstances, the risk of the student being disillusioned with the eventual university experience is increased.

7.4.2.2 Expertise and interpersonal information search

In most consumer settings, experts are less likely to seek interpersonal sources of information than non-experts are (East, 1992; Lascu et al., 1995). Further, while experts may seek fewer interpersonal sources of information, those they do seek may be relied on less (Beatty & Talpade, 1994). However, even experts may seek confirmation of their decision from socially significant others when the purchase is a highly socially significant one (such as education).

In addition, experts are more able to be individualistic in their decision-making (Lascu et al., 1995). Consequently, while they may seek social support for their actions, they may still make decisions that do not necessarily conform to group expectations. For students, this is particularly relevant. As mentioned earlier, students who are passive acceptors of their educational goals (conforming to social group norms) are more likely to face transition problems when they reach university. Thus, some degree of expertly informed individualism is important in decision-making. Experts might evolve into more satisfied consumers of the university product.

7.4.3 Expertise is important to customer satisfaction

Knowledge also has an affect on the consumer's ability to determine product quality (Rao & Sieben, 1992). An important dimension of quality in the educational domain is the concept of co-production. Co-production is where the customer and the service provider work together to produce a quality outcome for both parties. It implies mutual responsibilities for both the customer and the provider. Further, there is an active participation by the customer in the definition of quality and service outcomes. Customers who expect to passively receive a service are likely to be dissatisfied in these circumstances (Dabholkar, 1990; Dabholkar, 1992). In a co-produced service, such as education, the student's ability to understand quality is important to the eventual outcome (Chappell, 1994).

Consumers who have greater levels of domain knowledge have higher expectations of quality service (Murray, 1992). Furthermore, a knowledgeable consumer is likely to be more demanding in terms of service provision (Patterson & Sharma, 1997) and more likely to be

dissatisfied if their needs are not met (McAlexander, Kaldenberg & Koenig, 1994). Thus, increased knowledge is potentially an indicator of a student with a higher propensity to be demanding and therefore likely to be dissatisfied if their demands are not met by the institution (Selnes & Troye, 1989).

In addition, East (1992), suggests that higher levels of knowledge lead to lower levels of customer loyalty. Customers are most loyal when they are unfamiliar with competing alternatives. In these cases, they rely on brand name and/or experience with a single product to decrease the risk of purchase. For students, this may mean that the more knowledgeable they are about the offering, the less likely they will choose familiarity as the primary preference criterion. Thus, an informed choice may mean less first preferences for the institutions with the highest levels of familiarity. However, in complex products, which are difficult to evaluate, effective levels of knowledge may be so difficult to obtain that students may depend on reputation as they are unable to establish what are 'important' criteria. Experts in the educational choice domain may be less easily satisfied as customers of the educational product and more discerning in their choices.

7.4.4 Expertise makes a difference to the students use of choice rules

In the consumer behaviour domain, choice rules are influenced by the expertise of the consumer. The more expert the decision-maker, the less cognitively demanding the decision. The consumer who has previous experience in the choice task or expertise in the decision-making domain may understand what is important to the decision. Conversely, those who are not expert may find the task beyond their capabilities and may either use a complex compensatory strategy or delegate the decision. Therefore, students who are unable to acquire sufficient knowledge to make them confident of their decision-making capability may delegate the decision to a surrogate (Solomon, 1986). Further, they may employ heuristics that enable them to make a decision without complete information (such as the conjunctive choice rule).

Experts are active problem solvers (Bowman (1977) cited in Selnes & Troye (1989)). Therefore students who are more expert can be expected to seek more information from a variety of information sources. In addition, consumer expertise leads to an ability to automate the purchase decision (Alba, 1987; Alba & Hutchinson, 1987; Selnes & Troye, 1989). Therefore, it is necessary to examine expertise in a high involvement service such as education⁵⁴ where the decision is unlikely to be automatic and some degree of search is necessary.

⁵⁴ High involvement in this context implies that the decision is high risk, has high levels of cost associated with purchase, is not a frequent purchase, and the buyer is concerned about the purchase. These issues are detailed in Chapter Five – Motivation to search.

Higher levels of expertise are also likely to increase the person's ability to determine salient characteristics of the attributes they require in a product (Alba, 1987; Selnes & Troye, 1989). Therefore people with higher levels of knowledge will be more likely to use simple (single attribute) choice rules because they are aware of the important attributes. However, de Bont (1995) argues that experts are more likely to use a multi attribute choice rule in their decision-making. Moreover, Mitchell and Dacin (1996) argue that experts are more likely to use a group of attributes however, will still use a simple decision-making strategy.

People who have higher levels of expertise are able to distinguish between available alternatives (Covington & Omelich, 1986). Conversely, people who are not expert tend to believe that the available alternatives are substantially similar (Mitchell & Dacin, 1996). Further, experts choose different attributes to non-experts (Beatty & Smith, 1987; Park & Leissig, 1981; Selnes & Troye, 1989) and use the information to solve problems in differing ways (Selnes & Troye, 1989).

In conclusion, as demonstrated in Chapter Six, students use choice rules to simplify the decision task. These choice rules influence the type of information they seek, the way they seek it and how students process the information that they obtain in the search process. In addition, students are more likely to use non-compensatory strategies when the decision task appears too complex and they are not confident of their expertise. Thus, making it simple for the student becomes a priority for institutions trying to attract students of various levels of expertise. Furthermore, the expert decision-maker may use a choice rule such as elimination-by-aspects or disjunctive choice rather than indulge in significant cognitive effort. In these circumstances, the student may ignore potentially important information because they believe that it is not consequential to their decision. Unfortunately, the definition of what is consequential to the student is unlikely to be what the *institution* believes should be of consequence to the student. Thus, the risk is taken when preparing marketing communication that what the customer wants to know is not what the institution wants to provide.

7.5 Students require confidence in their decision-making capability

As shown in Chapter Six, it appears that students are more likely to use simplifying heuristics when they are not confident of their decision-making capability. Consumer knowledge leads to self-confidence in an ability to search for information and purchase appropriately. However, in an educational situation, where sufficient knowledge is relatively unattainable until after purchase, some people will be more confident than others will, even when sharing the same levels of subjective knowledge.

The potential for a person to solve a particular problem is related to their confidence in their ability (Hansen, 1976). If they are confident, they may be more persistent (Ethington & Wolfle, 1988), more able to manage the perceived risks of purchase (Coleman et al., 1995),

and more able to search for information (Simonson, Huber & Payne, 1988). In order to examine this potential, three dimensions of self-confidence have been explored: life optimism, locus of control and self-esteem.

7.5.1 Life optimism

(Friedman et al., 1992) define optimism as ‘generalised outcome expectancies’. Therefore, optimism is a trait which can be measured between domains and should affect behaviours. Friedman’s research has been in clinical psychology. However, the research has shown that optimism affects decision-making and susceptibility to interpersonal influence in clinical conditions. Extending research conducted in non-normal populations to normal populations is potentially difficult. The research results are often not replicable (Plous, 1993), and this is not surprising considering the conditions under which the research is conducted. However, life optimism should be a trait that remains relatively stable across populations and therefore research domains.

Scheier and Carver (1994) argue that pessimists and optimists are opposites. However, as their research is conducted in non-normal populations it is more likely that students may demonstrate some traits of both dimensions. For example, optimists may have views that could appear pessimistic. They may comprehend negative possibilities, but may actively set out to control their environment to ensure the least impact of the negative factors. Thus, students (as a normal population) may be both pessimistic and optimistic although they may be more heavily weighted on one dimension.

People who are optimistic are more likely to be future oriented. That is, they may undertake an educational program only if they are optimistic that there will be a return on their investment of time, effort and money (Gurgand, 1998). The optimist is also more likely to take on a significant investment of time in the educational process and may not necessarily seek directly vocational outcomes from their first degree (Sprinzen, 1976). Sprinzen also argues that people who are optimistic may delay choices. Thus, students who are optimistic may be more likely to defer education or take extended pathways to a career goal (such as entering a TAFE course prior to university).

Optimism should lead to a greater motivation to search for information, that is, more active problem solving behaviour (Sheth, Mittal & Newman, 1999). However, higher levels of optimism may also decrease search behaviour because the consumer is not as concerned about potential negative outcomes (Hansen, 1976). Furthermore, the optimist who is able to see potential negative consequences may seek to decrease risk through the acquisition of information. Hence, optimists who are also realistic may seek more information than optimists who are confident that ‘what ever they do it will work out’. It is argued that this ability to be realistic (rather than pessimistic) increases the level of search for information.

Another characteristic that distinguishes optimists from non-optimists is their level of persistence, both within the educational process and their information search activities. Optimists will be more persistent than non-optimists will (Friedman et al., 1992; Scheier, Carver & Bridges, 1994). Persistence is an attribute that is likely to distinguish students who succeed at study. Thus, it is a necessary element in gaining a place in an institution. In addition, persistence may extend to the student's expertise and information search activity. Optimists may have higher levels of objective knowledge (gained through a persistent information search process). Further, they may have higher levels of subjective knowledge and belief in their decision-making capability.

In conclusion, a student's level of optimism may determine their level of active information search, the type of information they search for and the sources of information they use in the information search process. Further, the student's level of optimism may contribute to their confidence in their decision-making capability.

7.5.2 Locus of control

The student's self perceived ability to control their environment is another contributing factor in the student's confidence. The concept of locus of control (Rotter, 1966) has been discussed as a significant variable in the psychology literature relating to personality (Srinivasan & Tikoo, 1992). Rotter (1966) proposed that there are some people who are internally directed and feel that they are in control of their environment (internals) and others who believe that fate, luck and other people play a large part in their lives (externals). Importantly, locus of control is perceived as a continuum on which some people are more or less controlled by (externals), or controlling of (internals) their environment (Srinivasan & Tikoo, 1992).

Internals are likely to be more self-directed and be more confident in decision-making regardless of age (Hong, 1984). (Maqsud, 1980) found that there was no relationship between socioeconomic status and locus of control. However, Rotter (1966) found that there were differences between genders; with females being more likely to be internally directed. However, this may be associated with the type of schooling undertaken by the students rather than an enduring psychological trait. For example, Cairns (1990) found that girls who attended single sex private schools were more likely to be internals than girls who attended co-educational or non-private schools.

In many respects, locus of control appears similar to optimism. Students who are internals are likely to be optimistic (but may not always be). Thus, internals may have an active search process, be less susceptible to interpersonal influence and more confident in their overall decision-making capability.

7.5.3 Self-esteem

A further characteristic of the decision-maker, which contributes to their confidence in their decision-making capability, is their level of self-esteem. Self-esteem is the assessment of one's acceptability to others (Scheier et al., 1994). People with *high* levels of self-esteem are potentially more optimistic than people with lower levels of self-esteem (Sprinzen, 1976) and are more able to succeed in the educational environment (Cairns, 1990; Ethington & Wolfle, 1988; Skaalvik & Hagtvet, 1990). On the other hand, people with a *low* level of self-esteem:

- collect more information when problem solving (Stone et al., 1984), however
- are less motivated to search for information related to problem solving (Niles, 1986)
- will delegate the decision to others more readily (Solomon, 1986)
- are more influenced by others in the decision-making process (Covington & Omelich, 1986), and
- are more likely to set themselves unreasonable and unachievable goals (Covington & Omelich, 1986).

While it is not certain if the converse is true of those with high levels of self-esteem, it is evident that those with high self-esteem tend to seek high status roles (Hoffman & Schwarzwald, 1992) and are less susceptible to interpersonal influence (Kassarjian, 1971). Furthermore, people tend to purchase products which are congruent with their impression of themselves (Kassarjian, 1971). Thus, the student who has high levels of self-esteem may seek high status options for their university education. However, status in this respect does not necessarily mean that the student will choose only those institutions with the most prestige, as high status may be relative to their current position and contingent on their capabilities.

Therefore, a student's level of self-esteem influences their level of information search activity, the type of information they seek and the sources of information they use, as well as the type of choice rule which is used. Further, a student's level of self-esteem may influence the criteria for preference in addition to contributing to the student's overall confidence in their decision-making capability.

In conclusion, locus of control, self-esteem and optimism may contribute to a student's self-perceived confidence in their decision-making capability. Confident students are more likely to actively seek information from a variety of sources, less likely to delegate the decision to others, less susceptible to interpersonal influence, and more likely to use a non-compensatory decision-making heuristic. Furthermore, students who are confident are also likely to be more expert due to their active participation in the information search process.

7.6 Cognitive characteristics may be important to students' decision-making capability

A student's decision-making capability is comprised of their decision-making expertise and confidence. However, other characteristics such as the ability to tolerate an uncertain decision-making environment and their general ability to think through a significant decision-making task are also important.

7.6.1 Ability to deal with uncertainty

Smith and Bristor (1994 p 587) stated that "*marketers have long believed that consumers seek information when faced with risk, uncertainty and ambiguity.*" Their study found that some consumers were more able to deal with uncertainty and proposed uncertainty orientation as "the cognitive response to uncertainty" (p 588). They found that uncertainty orientation explained differences in involvement and information search activity in both low and high involvement products. Smith and Bristor's work on uncertainty orientation is based on research conducted earlier by Sorrentino and others (cf. (Sorrentino, Bobcel, Gitta & Olson, 1988; Sorrentino & Roney, 1986)).

Uncertainty orientation is similar to other cognitive characteristics such as locus of control and confidence. These constructs are also proposed as a continuum from low to high levels. Uncertainty orientation is also posited to be a continuum from low tolerance for uncertainty (certainty oriented) to high tolerance levels (uncertainty oriented). Consumers who are uncertainty oriented are:

- active problem solvers (Urbany et al., 1989)
- active information searchers (Lanzetta & Driscoll, 1968)
- more likely to have an extended information search (Simonson et al., 1988)
- more able to learn new information (Urbany et al., 1989)
- less likely to be susceptible to interpersonal influence (Urbany et al., 1989) and,
- more likely to be highly involved in the purchase (Beatty & Smith, 1987)

However, while uncertainty orientation leads to active information search, those with low levels of uncertainty orientation may avoid information searching because they cannot cope with the information they find (Smith & Bristor, 1994). This inability to search in conditions of uncertainty was also posited by (Alba & Hutchinson, 1987) and (Bettman & Park, 1980). Furthermore, those with low levels of uncertainty orientation are likely to be less knowledgeable in the decision-making domain and therefore less expert decision-makers (Urbany et al., 1989).

Srinivasan and Tikoo, (1992) suggest that uncertainty orientation leads to greater and lesser levels of search – that it is a U shaped curve and is not linear in nature. More uncertainty orientation is likely to decrease search effort because the person can tolerate risk and uncertainty (Dowling & Staelin, 1994). Less uncertainty orientation leads to the consumer delegating the decision to others or relying on interpersonal sources of information in order to decrease the level of risk (Cox, 1967). Those in the middle are more likely to search for information. Smith and Bristor (1994) support this view although they have not considered the U shaped curve in their research results.

Dowling and Staelin (1994) suggest that risk and uncertainty are almost the same and that high-risk takers must have higher uncertainty orientation (tolerance for uncertainty). Therefore in high-risk decision-making, people ought to have higher levels of uncertainty. However, it is argued that this is not true of all high-risk decisions. In the educational situation, it is argued that it is an inherently high-risk decision. Consequently, uncertainty orientation may vary differently to risk perception.

In conclusion, we can expect that students with high levels of tolerance for uncertainty to be assiduous in their information search activities. They may seek more information from a greater variety of sources. In addition, they may seek information from non-traditional sources and may not be as susceptible to interpersonal influences. Furthermore, they may be more involved in the decision and thus more highly motivated to search for information.

7.6.2 Ability to think through a decision-making task

A prospective student's ability to think through the decision-making task needs to be considered in the light of their ability to make a judgement about a complex purchase situation. Students who lack expertise may still make 'good' judgements if they have an ability to think through the issues involved. Cohen, Stotland and Wolfe (1955) cited in Petty and Cacioppo (1986) first posited the construct 'need for cognition' and suggested that higher need for cognition people are more likely to make discriminating judgements and are generally more motivated. Need for cognition is defined as the need for an individual to engage in and enjoy thinking (Cacioppo & Petty, 1982).

Schmidt and Spreng (1996) argue that a person's need for cognition influences their motivation to search for information. Their argument is based on the work of Petty and Cacioppo (Petty & Cacioppo, 1986; Petty, Cacioppo & Schumann, 1983) who contend that a person's need for cognition determines their level of involvement in the product class as well as their involvement in the purchase decision. However, Hansen first proposed the idea of decision-making aptitude having an important influence on buyer behaviour in 1976. Thus, need for cognition appears to be a relatively new means of examining an existing concept.

Need for cognition is closely related to involvement (MacInnis & Jaworski, 1989). People who have high need for cognition are more likely to have higher levels of product class involvement and to enjoy the shopping experience (Schmidt & Spreng, 1996). Thus, high need for cognition consumers may be more motivated to search for information and more able to process information when they find it (Park et al., 1988). Further, higher levels of need for cognition leads to a greater ability to discern between marketing communication messages and to determine what is important in the decision-making process (Cacioppo & Petty, 1982; Heckler, Houston & Childers, 1993). High need for cognition consumers may, therefore, be more comfortable using complex choice rules and less likely to delegate the decision to another. Consequently, in some respects, high need for cognition consumer behaviour mirrors that of experts (Alba & Hutchinson, 1987; Petty & Cacioppo, 1986). However, unlike expertise, high need for cognition does not necessarily relate to purchase decision involvement, as it is an enduring personality trait, which may have no relationship to a specific decision-making task.

In conclusion, students with high levels of need for cognition may be more motivated to search for information; they will have higher levels of objective knowledge (although they may not have similar levels of subjective knowledge).

7.6.3 Susceptibility to interpersonal influence

Another cognitive characteristic which may influence a student's decision-making capability, is the student's susceptibility to interpersonal influence. Susceptibility to interpersonal influence is defined as "*the need to identify with or enhance one's image in the opinion of significant others through the acquisition and use of products and brands*" (Bearden, Netemeyer & Teel, 1989 p 473). There are two important dimensions to this definition: firstly, there is a need to enhance ones' image within a socially significant group. Secondly, the need is potentially satisfied through the acquisition and use of socially significant products and brands. Bearden, Netemeyer and Teel posit that susceptibility to interpersonal influence has two components; the seeking of social approval (normative) and social information search (informational).

The argument that some people are more susceptible than others to interpersonal influence has been discussed in earlier literature than Bearden, Netemeyer and Teel. In 1964, Cox and Bauer (1964) found that women high in self-confidence were less likely to be susceptible to persuasion by others. Furthermore, (Kassarjian, 1971) also found that susceptibility to interpersonal influence increases the likelihood of reliance on others for decision-making. Thus, the more susceptible to interpersonal influence a person is the more likely they are to seek information from social sources and the more likely they are to rely on the information provided by those sources.

In addition to increasing the reliance on social sources of information, susceptibility to interpersonal influence decreases the level of external search activity undertaken (Newman & Staelin, 1972). Consequently, a person who is strongly susceptible to interpersonal influence may be less likely to seek marketer-controlled information (Coleman et al., 1995). The information that a susceptible person seeks is more likely to be related to intangibles such as reputation (Lascu et al., 1995).

If people have high socially expressive needs they may have higher levels of susceptibility to interpersonal influence (MacInnis & Jaworski, 1989). Socially expressive needs are linked with prestige seeking behaviour (Vigneron & Johnson, 1999). Consequently, people who are concerned with social approval are more likely to seek prestige as a primary attribute. Further, they may seek information regarding the social acceptability of the purchase instead of any instrumental⁵⁵ or utilitarian⁵⁶ dimensions (Bearden et al., 1989). Hence, the susceptible consumer is also unlikely to establish objective expertise in the knowledge domain.

Susceptibility to interpersonal influence has also been linked to levels of involvement. Consumers who are highly involved are less persuadable (less susceptible to interpersonal influence) than consumers who have lower levels of involvement (Folkes & Kiesler, 1991). Folkes' research focused on purchase decision involvement, which increases the level of motivation to search for information. Therefore, it is necessary to look at susceptibility to interpersonal influence and enduring involvement.

In conclusion, susceptibility to interpersonal influence affects a consumer's motivation to search for information, the types of information they seek and the sources of information they use. Further, susceptibility to interpersonal influence affects the criteria consumers use to develop preference sets and the complexity of the decision-making strategies.

7.7 Précis of decision-making capability

This chapter has explained that students' decision-making capability influences their motivation to search in addition to their information search activities. Further, students' decision-making capability comprises students' expertise in the decision-making domain, their confidence in their ability to make a decision and their susceptibility to interpersonal influence. In addition, students' ability to tolerate uncertainty in the decision-making environment and their inherent need to think are important elements in the decision-making task.

Each of these personal characteristics contributes to the student's propensity to participate actively in the decision-making task and influences the choice rules that the student will use

⁵⁵ Instrumental attributes are those that provide the consumer with pathways to goal achievement.

⁵⁶ Utilitarian attributes are those that provide the consumer with direct benefits (e.g. housing, transport)

to simplify decision-making. It is argued that students with greater levels of decision-making capability are active in the decision-making process and are therefore less likely to experience transition problems on entering university. Thus, the recruitment of students with greater decision-making capability is an important objective for institutions. However, students with greater decision-making capability are less susceptible to marketing communication and more demanding as customers. Institutions seeking to attract students with greater decision-making capability should be concerned with 'delivering the promise' that these students believe has been made.

In order to explore these issues in the context of university choice, the following hypotheses have been put forward from among the many which have presented themselves during the discussion:

Consumer research suggests that consumers information search activity is associated with their motivation to search for information and certain variables which for the purposes of discussion, this study has categorised as decision-making capability. We need to determine if decision-making capability (as put forward in this thesis) can be identified with the three factors documented. Thus:

H7_{1A} students' decision-making capability is comprised of

H7_{1a} Students' expertise in the decision-making domain will be associated with the students decision-making capability

H7_{1b} Students' self-confidence will be associated with their decision-making capability

H7_{1c} Students' cognitive characteristics will make a difference to their decision-making capability

The factors which contribute to consumers decision-making have yet to be considered in the educational choice domain. Accordingly, even if the elements proposed within H1_{a,b,c} are not associated with each other, this study aims to determine if there are associations between the variables considered as decision-making capability, and information search activity, motivation to search for information, choice rules and decision-making criteria. Thus:

H7₂ Students' decision-making capability and their information search activity are associated

H7₃ Students' decision-making capability and their motivation to search for information are associated

H7₄ Students' decision-making capability and their use of decision-making choice rules are associated

H7₅ Students' decision-making capability is associated with their criteria for preferring an institution

7.8 Results

7.7.1 H7₁ A student's decision-making capability is comprised of his or her - H7_{1a} expertise, H7_{1b} confidence, and H7_{1c} cognitive characteristics.

Decision-making capability was postulated to be comprised of the students' expertise, confidence and other cognitive characteristics. In order to examine this proposition, the students were asked questions designed to elicit an understanding of their subjective knowledge, objective knowledge, locus of control, life optimism, and self esteem. Further, students were asked questions regarding their uncertainty orientation, need for cognition and susceptibility to interpersonal influence (cognitive characteristics). Locus of control was excluded from further analysis due to low reliability of the item responses.

The relationships between the remaining variables are presented in the following table. The significant relationships are represented by the bold figures. The table is best interpreted by reading one column at a time. **Bold** figures indicate significant associations.

Table 7-1: Correlations between decision-making capability variables

	Need for Cognition	Objective Knowledge expertise	Subjective Knowledge expertise	Optimism	Pessimism	Self esteem	Work ethic	Uncertainty	SII Social	SII Informational	
Need for cognition	1.000										
Objective expertise	-.003	1.000									
Subjective knowledge	.083*	.003	1.000								
Subjective expertise	.090*	.090*	.467***	1.000							
Optimism	.076‡	.022	.127**	.116**	1.000						
Pessimism	-.218***	-.015	.000	.004	-.430***	1.000					
Self esteem	.081‡	-.044	.131**	.104*	.410***	-.379***	1.000				
Work Ethic	-.477***	-.011	-.083*	-.052	-.171***	.298***	-	1.000			
							.156***				
Uncertainty orientation	-.024	.053	.002	.018	-.042	.026	-	.065	1.000		
							.152***				
SII social approval	-.295***	-.027	-.018	.049	.002	.146***	-.051	.227***	-.016	1.000	
SII informational	-.059	-.105*	.023	.064	.045	.000	-.028	.034	-.088*	.335***	1.000
N	576	576	576	576	576	576	576	576	576	576	576

*** Pearson Correlation is significant at the 0.001 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed). ‡ Correlation is significant at the 0.10 level (2-tailed).

H7_{1a} Students' expertise in the decision-making process

It was hypothesised that students' decision-making capability would be influenced by the students' levels of subjective knowledge about the domain and their belief in their ability to make an informed decision (subjective expertise). Further, it was hypothesised that students' subjective expertise would be associated with the students' objective expertise. Table 7-1 shows that subjective knowledge and subjective expertise are strongly associated with each other. However, objective expertise is not strongly associated with either variable. There is a slight positive association between objective expertise and subjective expertise, but no association between objective expertise and subjective knowledge.

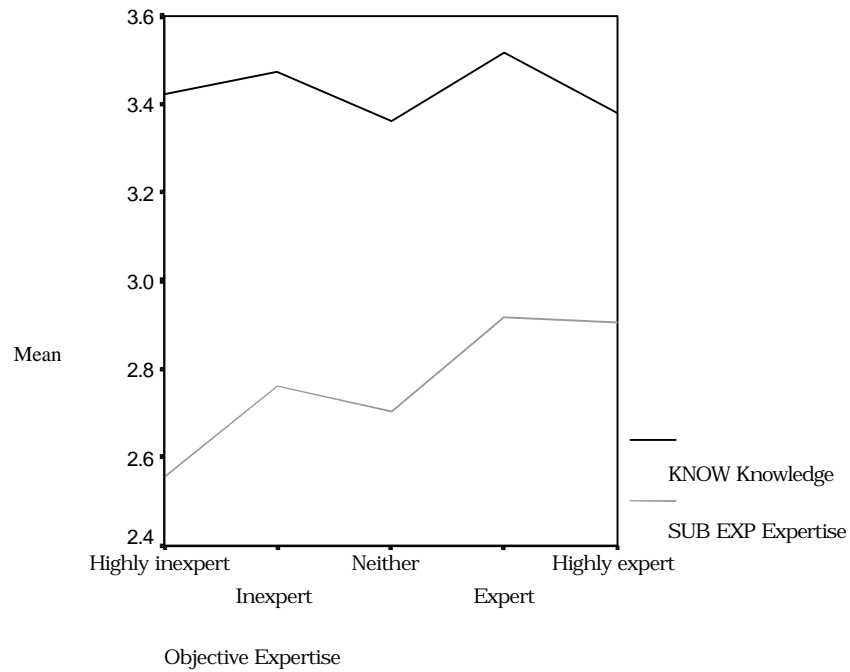


Figure 7-2: Students' expertise

Figure 7-2 illustrates the relationship between the three variables. It can be seen that students estimate their knowledge of the institution information search process higher than their level of expertise. This is not surprising, as students may know how to make a decision without being confident that they are more expert than others are.

A somewhat unexpected result was the picture presented by those who were not expert in their levels of knowledge. These students consistently answered incorrectly when asked questions relating to their institution's *known* characteristics. However, their self-rated level of knowledge is higher than almost any other group; thus lending credence to the idea that students who *think* they know a lot, may not seek information. Furthermore, while those who were inexpert rated their level of knowledge relatively highly, there was not a commensurately high self-rating of their level of expertise. This may illustrate a degree of lack of confidence in the decision-making process.

Accordingly, it cannot be assumed that objective expertise and subjective ratings of students' expertise or knowledge are related. Further, to generate a composite variable using the three measures of expertise would obscure the contribution of each type of expertise to the students' behaviour.

Students' subjective knowledge, expertise and their association with other decision-making capability variables.

Subjective knowledge is negatively associated with a student's work ethic. While this association is slight (-.083), it highlights the possibility that students may vary in their self-perceptions of knowledge because they do not wish to seek information more assiduously.

Subjective knowledge has positive associations with optimism and self esteem; illustrating a connection between the students' self-rating of their ability in the knowledge domain and their confidence in themselves as decision-makers. Furthermore, the students' self-rating of subjective expertise also demonstrated this connection between belief in their ability and overall confidence in themselves.

Students' levels of objective expertise and their associations with other decision-making capability variables

Objective expertise is negatively associated with the students' susceptibility to interpersonal influence - informational search dimension. This potentially shows that students who rely on others in the decision-making process may be less likely to seek information for themselves, and therefore less likely to develop objective knowledge. The students' objective expertise is not associated with any other decision-making capability variables; indicating that objective expertise is possibly influenced by other factors.

In conclusion, a student's overall level of expertise is not directly measurable by combining the student's self-rated knowledge and expertise and the objective measurement of their knowledge due to the discrepancy between the students' belief and the reality. However, it is important to know students' beliefs and the facts are incongruent with each other, as this is further support for the argument that students are not acting as *rational* consumers in an open market system.

Consequently, H7_{1a} is *partially* accepted. Although a composite variable cannot be computed, the elements of expertise are associated with other decision-making capability variables.

H7_{1b} Students' confidence and the association with other decision-making capability variables

Students' confidence in their decision-making capability was postulated to be an outcome of students' self esteem and their life optimism. Table 7-1 (page 169) shows that there are significant associations between all three variables.

Students' optimism and self-esteem are negatively associated with the students' work ethic. This possibly describes the student who does not believe in the efficacy of information search activities (or work). For example, if the optimistic student is sure of a positive outcome, they may be more likely to work to make it happen. Thus, a positive attitude supported by a strong work ethic may lead to greater outcomes. Of course, for those pessimists with a low work ethic, the reverse is also likely to be true – and consequently these students may find themselves confirmed in their pessimism as their negativity impacts on their efforts.

The students' self esteem is also associated negatively with the students' tolerance for uncertainty. Therefore, we can infer that students who are positive about themselves have a higher tolerance of an uncertain decision-making environment. This may explain, to a certain extent, the negative association between objective expertise and self esteem. High self esteem students may not acquire objective expertise because they are not as concerned with potential negative outcomes.

In addition, students' positiveness is associated with the students' need for cognition. The relationship shows that as need for cognition increases, so does a student's positiveness. However, the relationship, while significant at the 0.10 level, is slight and linear regression showed that the association may be spurious.

There is also a positive association between the students' levels of positiveness and their subjective expertise and subjective knowledge. This association could be anticipated, as students who generally feel positive would also feel positive about their expertise within the decision-making domain.

The association between students' pessimism and other decision-making capability variables

Students' level of pessimism was found to be positively associated with their work ethic and the need for social approval required. From this we can infer that there are some students who do not feel that they have a great deal of control over the decision-making environment, and therefore may not work to make things happen. Furthermore, these students require a greater degree of social support than others do (optimism is not associated with either susceptibility to interpersonal influence dimension).

In conclusion, H7_{1b} is not rejected; students' confidence in their decision-making capability is associated with other decision-making capability variables.

H7_{1c} Students' cognitive characteristics and the association between decision-making capability variables

Students' cognitive characteristics were hypothesised to be the students' tolerance of uncertainty (uncertainty orientation), their ability to think through a decision-making task (need for cognition), their work ethic and their susceptibility to interpersonal influence. Table 7-1 (page 169) shows that there are few associations between these variables. Except for need for cognition and work ethic, and need for cognition and the social approval dimension of susceptibility to interpersonal influence, the relationships hypothesised to exist between these variables are not substantiated. However, there may be influences between these variables and motivation to search for information, criteria for preference and information search activity. These associations will be explored later in this chapter.

The need to think through a decision-making task is associated with the students' work ethic. This too, could be anticipated, as the item questions appear to tap different dimensions of a student's propensity to undertake *work* - either cognitive or physical effort. Consequently, a student with a high need for cognition may also have a high work ethic.

Thus H7_{1c} is not rejected. There is an association between students' cognitive characteristics.

When considered in conjunction with each other, the associations between need for cognition, expertise, confidence and the desire for social approval draw a picture of a student who may not feel empowered in the decision-making domain. Of course, that is if it is assumed that there are no truly lazy students able to gain access to university.⁵⁷

Consequently, H7₁ is not entirely acceptable; there are some associations between the variables hypothesised to comprise decision-making capability. However, they are not all significant, nor all associated.

To examine this situation further, therefore, the data were analysed using exploratory factor analysis to determine if there were any underlying dimensions to the relationships identified.

⁵⁷ There was no association between work ethic or need for cognition and ENTER score.

Table 7-2 Decision-making capability - Rotated Component Matrix

	<i>Confidence</i>	<i>Work propensity</i>	Component		
			<i>Subjective expertise</i>	<i>Susceptibility to interpersonal influence</i>	<i>Learning</i>
LOT optimism	.801		.104		
SE self esteem	.758		.140	-.125	-.232
LOT pessimism	-.734	.320	.134		
NFC Need For Cognition		-.839		.130	
WE Work Ethic	-.191	.806			
KNOW Subjective knowledge			.847		
SUB EXP Subjective expertise			.844		.101
SII Informational search				.864	-.143
SII Social Approval		.375		.732	
UO uncertainty orientation	-.118				.763
OBJ EXP Objective expertise				-.144	.646

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 6 iterations.

These dimensions were further examined using confirmatory factor analysis. However, there was insufficient evidence that decision-making capability, as a construct, could be reliably modelled. For example, while exploratory factor analysis identified a relationship between uncertainty orientation and objective expertise, this was apparently superimposed by the program and was not a true association (compare with Table 7-1: Correlations between decision-making capability variables, page 169). In addition, a fundamental assumption underpinning structural equation modelling is that the association between variables is linear. In some cases, this assumption is violated, as the association is more a U or inverted U shaped curve. Consequently, no further confirmatory factor analysis was undertaken using the dimensions indicated.

7.7.2 H7₂ Students' decision-making capability and their information search activities are associated

The students decision-making capability variables were analysed for their associations with the students' information search activities. It was postulated that decision-making capability would influence both the type of information search activity and the overall extent of search. Table 7-3 illustrates the associations identified. The bold figures represent the significant associations. The table is best interpreted by reading the results relating to each row variable.

Table 7-3 Correlations between information search activity and decision-making capability variables

	<i>General</i>	<i>Promotional</i>	<i>Interpersonal</i>	<i>Experiential</i>	<i>Extent of search</i>	<i>Intensity of search</i>	<i>Consideration set size</i>
Need for cognition	.057	-.005	-.012	.021	.011	.143**	.032
Work ethic	-.085*	-.015	.027	.044	-.053	-.137**	.011
SII informational	.130*	.058	.105*	-.030	.088*	.144***	.001
SII Social	.079	.097*	.049	-.006	.084*	.035	-.031
Subjective knowledge	.146***	.029	.127**	.009	.116**	.295***	-.036
Subjective expertise	.179***	.185***	.149***	.123**	.209***	.326***	.062
Objective expertise	.115**	.204**	.081‡	.139**	.148***	.059	.116**
Uncertainty orientation	.019	-.010	-.022	-.005	-.007	-.042	.072‡
LOT Optimism	.100**	-.019	-.013	-.088*	.030	.133**	-.127**
LOT Pessimism	-.019	.035	.064	.067	.026	-.034	.099*
SE Self esteem	.027	.019	-.002	-.009	.018	.071	-.036

*** Pearson Correlation is significant at the 0.001 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed). ‡ Correlation is significant at the 0.10 level (2-tailed).

The first row in Table 7-3 contains the associations between the students information search activity and their need for cognition. *Need for cognition* is associated only with the students stated *intensity* of search. Consequently, while it can be said that need for cognition is associated with what the student reported they did, the students' overall information search activity is not associated with their need for cognition.

The students' *work ethic* is also associated with *intensity* of search. However, there is a slight negative association with *general* information search activity. This may indicate that students with a low work ethic are not collecting information that is of a general nature. Bearing in mind that general information must be directly and actively collected from the institution, this result is not remarkable.

Susceptibility to interpersonal influence measures students' desire to be socially acceptable. Students' *susceptibility to interpersonal influence - informational* dimension is associated with *general* information search, *interpersonal* information search activity and both *extent* and *intensity* of search. Furthermore, the *social* dimension is associated with *promotional* information search activity, whereas the *informational* dimension is not. This supports the result found in Chapter Six where students were more likely to search for promotional information if they were motivated by social significance. As a result, we can infer that susceptibility to interpersonal influence is associated with the students information search activities, and that they may seek various types of information depending on their level of susceptibility to interpersonal influence.

The students' *subjective knowledge* and *subjective expertise* are related to most types of information search activity. However, an interesting difference arises when one considers *promotional* information search activity is *not* related to subjective knowledge. Furthermore, there is a greater strength of relationship between subjective expertise and information search activity than subjective knowledge and information search activity. This implies that students who believe they know 'enough' may not search as assiduously as others. On the other hand, students who believe they have *expertise* may have formed their opinion of their expertise because they have conducted *both* an extensive and intensive search.

An interesting relationship occurs between information search activity and students' *objective expertise*. Students' objective expertise is more strongly associated with *promotional* information search activity than the other types of information search activity, but is *not* associated with intensity of search. From this it may be possible to infer that students who do their homework by evaluating multiple sources of *promotional* information may gain a degree of expertise not shared by their colleagues.

In addition, objective expertise is positively associated with the size of the students' consideration sets. This combined with the use of other information sources, leads to the conclusion that experts not only seek more information, but consider more alternatives in the process.

The only other decision-making capability variable that was associated with consideration set size was *uncertainty orientation*, which is only slightly associated. This association, although slight, makes intuitive sense when we relate it to the discovery that consideration set size is a risk reduction strategy (Chapter Five). It is reasonable to assume that students with a high perception of risk may not have a high tolerance for uncertainty. However, this proposition will be examined in a later section of this chapter.

Students' levels of *optimism* are associated with their general and experiential information search activity and also their intensity of search. However, students consideration set size is negatively associated with levels of optimism. It is, therefore, possible to conclude that an optimistic student conducts an intense search with institution specific information from only a small number of institutions – potentially only one. Conversely, pessimism is not associated with any information search activity other than consideration set size, indicating that students who are pessimistic about their chances increase the number of alternatives they consider.

A student's *self-esteem* is not associated with any information search activities.

In conclusion, H7₂ is somewhat acceptable. However, it appears that a student's *belief* in their decision-making capability, as witnessed in their subjective and objective expertise and optimism is more influential than the other decision-making capability variables on students' information search activity. In addition, the other decision-making capability variables have an association with *aspects* of information search activity and thus, cannot be dismissed entirely.

7.7.3 H7₃ Students' decision-making capability and their motivation to search for information are associated

The students' decision-making capability variables were analysed for their associations with the students' motivation to search for information. It was postulated that decision-making capability would influence the students' various motivations to search for information. Table 7-4 illustrates the associations identified. The bold figures represent the significant relationships. Again, it is suggested that the table be interpreted by reading across the rows.

Table 7-4: Motivation to search by decision-making capability variables

	<i>PCI</i>	<i>PDI</i>	<i>Risk</i>	<i>Social Sig</i>	<i>Status Asp</i>	<i>Time pressure</i>
Need for cognition	.196***	.128**	-.063	-.163***	-.101*	-.073‡
Work ethic	-.208***	-.172**	.040	.112**	.102*	.038
SII Informational	.040	-.137**	.133**	.139**	.125**	-.027
SII Social	-.007	.074‡	.133**	.296***	.271***	.051
Subjective knowledge	.126**	.360**	.145***	.126**	.134**	-.059
Subjective expertise	.111**	.286***	.177***	.207***	.196***	-.032
Objective expertise	.044	.013	.028	.038	.090*	.096*
Uncertainty orientation	-.097*	-.064	.018	-.025	-.008	-.038
LOT Optimism	.125**	.163***	.030	-.004	.114*	-.012
LOT Pessimism	-.092*	-.059	.101*	.094*	.082*	.059
Self esteem	.102*	.087*	-.019	-.030	.223***	-.050

*** Pearson Correlation significant at the 0.001 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed). ‡ Correlation is significant at the 0.10 level (2-tailed). Table 7-4 (Row 1) shows that a student's *need for cognition* is associated with the student's purchase decision involvement and her/his product class involvement. Therefore, we may infer that the student who has a high need for cognition is also likely to be highly involved in the purchase process. However, students need for cognition is negatively associated with their perception of the social significance of the educational product and their status aspiration. There is also a slight negative association with their felt time pressure. Thus, the student who has a high need for cognition, is potentially a relatively independent decision-maker, who does not require social approval for decision-making.

Students' *work ethic* is negatively associated with students' product class involvement, purchase decision involvement and positively associated with the students' perceptions of social significance and status aspirations; indicating a type of decision-making which may not be self-directed. The student who has a high work ethic can, therefore, be expected to be

highly involved in the decision-making process, but have relatively low levels of social reference requirements. Those with a low work ethic may be expected to use others as the primary reference point in their decision-making, thereby effectively circumventing the information search activity process. However, the relationship between self-esteem and work ethic suggests that this may not be a conscious and active decision. Students with a low work ethic may feel this way because they have no belief in the efficacy of information search activity.

Students *susceptibility to interpersonal influence – informational dimension*, is negatively associated with students' purchase decision involvement. This implies that students who are highly socially susceptible potentially 'sub-contract' their decision-making, rather than getting personally involved in the decision-making process. In addition, students' risk perceptions, their perceptions of social significance and their status aspirations are positively associated, thereby further illustrating the importance of social reference to these students. Interestingly, the students' product class involvement is not apparently associated with susceptibility to interpersonal influence. This might be indicative of the student who relies on word-of-mouth information for decision-making when they have a relatively low level of interest in the decision-making domain.

Susceptibility to interpersonal influence – social dimension is positively associated with purchase decision involvement; that is, as students' susceptibility to social influence increases, their purchase decision involvement also increases. However, this result shows a slight association, which is not significant at the 0.05 level; thus any interpretation must be treated with some caution. *Susceptibility to interpersonal influence – social* is also associated with perceptions of risk, and is strongly linked to students' perception of the social significance of the product. Again, this is not unexpected, as the student who feels a high degree of social dependency, is also likely to have high levels of social significance attached to the educational product. The result also confirms that students' status aspiration is social in nature, as students' *susceptibility to interpersonal influence – social* is also associated with their status aspirations. Indeed, the students' status aspiration is most strongly associated with the *susceptibility to interpersonal influence – social* dimension when considering all the decision-making capability variables.

The expertise variables, *subjective expertise* and *subjective knowledge* are both positively associated with product class involvement, purchase decision involvement, risk, social significance and status aspiration. This result was somewhat expected, and illustrates that a student's expertise in the decision-making process influences their motivation to search. Conversely, *objective expertise* is not associated with motivation to search, except in the case of status aspiration. This result was unexpected, as it was postulated that there would be some relationship between objective expertise and motivation to search for information. Consequently, objective expertise is not a good measure of information search activity or

involvement as suggested by Lascu (1995) and East (1992). Furthermore, there is a positive association between objective expertise and time pressure suggesting that, while experts may be able to avoid an intensive information search process in the *consumer* behaviour domain (Newman and Staelin 1971), *students* develop their objective expertise in a relatively short period. Further, they may feel that they have not conducted as intense a search as they would have, if given time.

A student's *uncertainty orientation* is only associated with her/his product class involvement, indicating that the students' tolerance for uncertainty might influence her/his overall 'curiosity' and interest in a education as a product.

Positiveness (*self-esteem & optimism*) is associated with product class involvement, purchase decision involvement and status aspiration. This illustrates that students' approach to decision-making is linked to their perception of their ability to manage the process.

In conclusion, each element of decision-making capability is associated with motivation to search for information in differing ways. The associations that support least the *a priori* understanding of motivation to search for information are students' objective expertise and uncertainty orientation. However, even these present some insight into student decision-making behaviour in contrast to that of consumers in other contexts. Students do not appear to develop expertise because they *want* to, are more highly motivated, or more intense in their search behaviour.

Thus, students are not behaving like active consumers in the educational choice environment. H₃ is not rejected, although the results were not quite as clear cut as first expected.

7.7.4 H7₄ Students' decision-making capability and students' choice rules are associated

Students' decision-making capability was postulated to be associated with students' decision-making choice rules. Table 7-5 contains the results of the correlations between decision-making capability variables and choice rules applied in the decision-making process by students. The significant relationships are identified by the bold type. The table is best interpreted by reading across the rows.

Table 7-5: Decision-making capability and choice rules applied

	Complex			Simple		External	
	<i>Compensatory</i>	<i>Elimination</i>	<i>Lexicographic</i>	<i>Conjunctive</i>	<i>Disjunctive</i>	<i>ENTER</i>	<i>Delegate</i>
Need for cognition	.033	.036	.036	-.123**	-.103*	-.257***	.059
Work ethic	-.126**	-.071‡	-.046	.059	.041	.171***	.000
SII informational	.089*	.073‡	.146***	.023	.036	.030	.182***
SII Social	.034	.050	.083*	.125**	.130**	.168***	.142**
Subjective knowledge	.166***	.151***	.146***	.006	.130**	.001	.012
Subjective expertise	.175***	.185***	.195***	.037	.003	.032	.044
Objective expertise	.045	.059	.012	.012	-.040	.130**	-.093*
Uncertainty orientation	-.102*	.001	-.036	-.010	-.014	-.042	-.111**
LOT Optimism	.121**	.061	.200***	-.003	.036	-.055	.059
LOT Pessimism	-.026	-.013	-.061	-.056	.112**	.164***	.012
SE Self esteem	.104*	.100*	.092*	-.020	-.022	.017	.065

*** Pearson Correlation significant at the 0.001 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed). ‡ Correlation is significant at the 0.10 level (2-tailed).

The first row in Table 7-5 illustrates that students' *need for cognition* is negatively associated with simple and other directed choice rules. Not surprisingly, the harder to apply choice rules are negatively associated with *work ethic*, illustrating that students' general work propensity is also linked to their decision-making behaviour.

In addition, it appears that a student who is socially dependent is also more likely to use simple choice rules, although it is to be expected that students who use other directed rules, would also be *susceptible to interpersonal influence*. However, the information dimension of susceptibility to interpersonal influence is not associated with the simple rules, indicating that students who require social approval for their decisions may not also be socially dependent.

Expertise is associated with complex decision-making, illustrating a degree of willingness to engage in evaluating the product in the educational domain. However, the student's subjective knowledge is also associated with the use of a disjunctive choice rule. This implies that student who is confident they possess a sufficient amount of information may cease to evaluate alternatives when they reach a 'satisfactory' outcome. The satisfactory outcome may not be the optimal one.

Once again, *objective expertise* appears to be associated with an unforeseen choice rule, as one would have thought that objective expertise would lead to the capacity to use complex choice rules effectively. However, students' objective expertise is most associated with the ENTER rule. This might be indicative of students who have made an effort to attain an amount of information (see Table 7-3 - correlations with information search activity), and who are not confident of their ability to assimilate the information. Consequently, they employ a heuristic that simplifies the decision by maximising the 'price.' Interestingly, the student with objective expertise appears unwilling to delegate the decision to another.

However, the student with a low tolerance for *uncertainty* shows a propensity to delegate the decision to another. There is no potential to determine the order of application of the rules, but students with low tolerance for uncertainty are also more likely to apply a compensatory rule. Students may attempt to make a decision using all available information but find that they need others to support them in the decision-making process.

A student's *confidence* in the decision-making domain is associated with the use of complex choice rules. Students who are pessimistic appear more likely to employ simple choice rules; although they appear not to use delegation as a decision rule. It is possible that pessimists do not have the confidence to allow others to make decisions for them.

In conclusion, H7₄ is not rejected; students' choice rules are associated with their decision-making capability. Students who use complex choice rules appear to be more confident in themselves, and have a greater propensity to work at a decision-making task.

Accordingly, a complex product such as education may find that part of the target market does not have sufficient information (regardless of how much is provided), to make a decision. These students may employ a simple or other directed choice rule. Finally, as demonstrated in Chapter Six, it must be recognised that students use a combination of rules.

7.7.5 H7₅ Students' decision-making capability is associated with their criteria for preferring an institution

It was hypothesised that a student's decision-making capability would be associated with the types of factors students thought were important to the decision when developing a preference for an institution. Table 7-6 shows the results. The bold figures highlight the significant relationships. The table is best interpreted by reading across the rows.

Table 7-6: Decision-making capability and criteria for choice

	<i>Status</i>	<i>Personal</i>	<i>Functional</i>	<i>Performance</i>	<i>Accessibility</i>
Need for cognition	-.019	-.085*	-.022	-.020	.001
Work ethic	.050	.051	.048	.003	-.009
SII Informational	.133**	.083*	.099*	.117**	.048
SII Social	.192***	.096*	.097*	.043	-.001
Subjective knowledge	.108**	-.006	.080	.053	.056
Subjective expertise	.122**	.060	.088*	.050	.049
Objective expertise	.071	.158***	.109**	.075‡	-.058
Uncertainty orientation	-.032	.051	.035	.020	.057
LOT Optimism	.000	-.009	-.020	-.067	-.094*
LOT Pessimism	.067	.072‡	.065	.054	.047
Self esteem	.007	-.054	-.028	.000	-.114**

*** Pearson Correlation significant at the 0.001 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed). ‡ Correlation is significant at the 0.10 level (2-tailed).

Status criteria are associated with *susceptibility to interpersonal influence* and *subjective expertise*. This confirms the idea that status may be a key criterion for those who are most influenced by interpersonal information. In addition, it appears that students who believe they know about the educational product may be seeking status information.

Personal criteria are negatively associated with a student's *need for cognition*. These criteria comprise items such as safety, shopping, parking, etc. This implies that students who seek personal criteria are less likely to value the act of thinking. Further, *objective expertise* is associated with personal criteria. However, this is potentially an artifact of the question set. That is, before students could demonstrate objective expertise, they would have collected information regarding campus facilities.

Functional criteria are associated with *susceptibility to interpersonal influence*, *subjective expertise* and more strongly with *objective expertise*. Functional criteria relate to the institutions' function and include the type of people; hence the association with susceptibility to interpersonal influence. The association between objective expertise and the seeking of functional criteria is less easily explained.

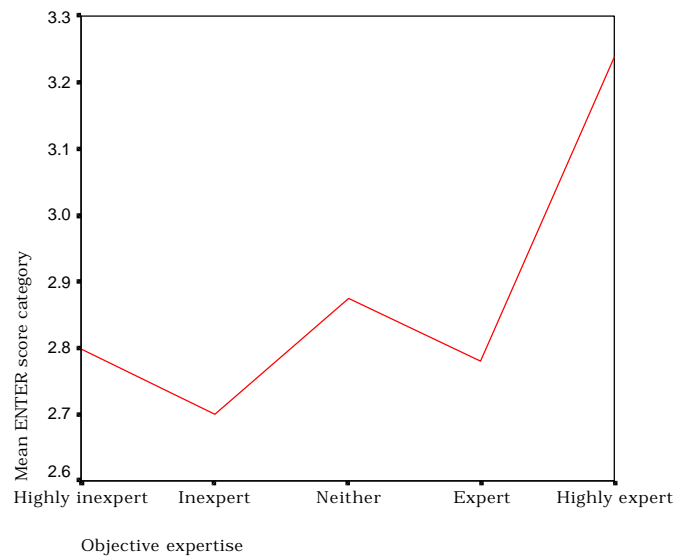


Figure 7-3: Students' estimated ENTER score and objective expertise

Figure 7-3 illustrates the relationship between ENTER score and objective expertise. While the relationship is not linear, there is an association between higher ENTER scores and higher levels of objective expertise. Consequently, the association with functional criteria is more readily understandable. Students who have higher ENTER scores may seek criteria relating to the difficulty of the study program and educational facilities.

Accessibility criteria are negatively associated with self-esteem. This result suggests that students who feel good about themselves are unlikely to seek an institution that is completely open entry.

In conclusion, there are few associations between decision-making capability and the student's criteria for preferring an institution. However, those few that are apparent contribute to the argument that students are not rational consumers operating in an open market system. Thus; H7₅ is partially accepted.

7.8 Discussion

<i>Hypothesis</i>	<i>Findings</i>
H7 _{1a} Students' expertise in the decision-making domain will be associated with the students' decision-making capability	Partially accepted; not all variables were associated. There appeared to be no relationship between a student's objective expertise and her/his subjective expertise. Further, those with the most objective expertise appear to be least convinced of their capability.
H7 _{1b} Students' self-confidence will be associated with the students' decision-making capability	Not rejected; students' self-confidence as measured by their optimism and self-esteem is related to other decision-making capability variables. In particular students' self-confidence is associated with their perceptions of their decision making expertise.
H7 _{1c} Students' cognitive characteristics will be associated with the students' decision-making capability	Rejected; although some variables showed partial associations, the overall level of associations between the variables in question were not found to be sufficient.
H7 ₂ Students' decision-making capability and their information search activity are associated	Not rejected; however, a student's belief in her/his ability to assimilate information is a more important indicator of their propensity to collect information than any of the other decision-making capability variables.
H7 ₃ Student's decision-making capability and their motivation to search for information are associated	Not rejected; notwithstanding this result, the findings challenged the a priori assumptions regarding how each element of decision-making capability might be influenced by a student's motivation to search for information.
H7 ₄ Students' decision-making capability and their use of decision-making choice rules are associated	Not rejected; student's who are confident and have greater levels of self belief are more likely to use complex decision making choice rules and are less likely to delegate the decision to others.
H7 ₅ Students' decision-making capability is associated with the students' criteria for preferring an institution	Rejected; there are very few significant associations between students' decision-making capability variables and their criteria. The overall level of association is not sufficient to infer a relationship between the two concepts.

While there was insufficient evidence to support the hypothesis that *decision-making capability* is a multidimensional construct, the hypothesised components of decision-making capability do have separate and differing influences on the students' decision-making processes.

A student's expertise is both subjective and objective. Furthermore, while subjective expertise is associated a student's motivation to search for information and subsequent information search activity, objective expertise is not associated. This suggests that for students to gain objective and accurate information they must not have an inflated sense of their capacity to undertake the decision-making task; neither must they underestimate their capacity and delegate the decision entirely. Accordingly, those students with objective

expertise are those with a moderate level of self-confidence and a relatively high level of actual search. One important implication of the low levels of objective expertise for institutional marketing, is that some students make choices with a high degree of inaccurate knowledge.

Students' information search activity is influenced by students' decision-making capability variables. Students with low levels of confidence have larger consideration sets although they are not confident enough to say they have conducted an intensive search. Further, they do not appear to undertake an extensive search. We may infer, therefore, that students with low levels of confidence are the students most likely to ask, 'which university will have me', rather than 'which university will I attend'. This is supported by the results correlating decision-making capability and motivation to search for information, whereby pessimists are likely to perceive a high degree of risk.

Students' decision-making capability is also associated with their motivation to search for information. The strongest associations relate to the social importance of the decision to the student. Hence, those students with a strong sense of the social significance of education and a strong desire for social status are more likely to be susceptible to interpersonal influence. However, those most dependent on social support in the decision-making process have lowest levels of non-personal search activity. Consequently, there is a negative association between social search and objective expertise. If students have based their decision on inaccurate information this may lead to disappointment with the educational experience. Thus, institutions should be aware that, while the decision to attend a particular institution is largely based on word-of-mouth, students may suffer from a degree of cognitive dissonance if the reality does not match the dream.

This chapter completes the discussion of *how* students choose universities. The following chapter summarises the theoretical discussion and findings. Chapter Nine will conclude the study with a discussion of the implications of these findings.

Section IV Synopsis and implications

This is the final section of the thesis. It comprises a review of the hypotheses and key findings. This section also contains a discussion of the implications of the findings for educational policy makers, marketers of educational institutions and future researchers.

8 Synopsis and review of findings

8.1 Introduction

Australian universities and education policy makers will benefit from understanding the choices that prospective students make. In understanding students' choices, universities may establish commercially effective marketing programs, in addition to being more efficient in their expenditure on marketing activities. Marketing programs targeted to a well-defined customer are less wasteful of scarce public resources than a 'scatter gun' approach.

The decision-making process of students needs to be explored if the key question is to be answered - do students make economically rational 'buying' choices about their institutions? In the economic sense, the *sovereign consumer* makes rational choices, which are where students understand the implications of their actions and search for adequate and appropriate information to support their choice. Further, the *sovereign consumer* is fully informed and is empowered in the decision-making process.

One argument of this study, is that to understand *how* someone chooses a course, it is also necessary to comprehend *what* is chosen, and *why* it is chosen. In addition, a student's *ability* to enter upon a decision-making process will affect the final choice of institution. For example, a student's capacity to search for information, assimilate material and choose between similar alternatives will also affect his or her choice.

In Chapter Three it was argued that students choose within a *structure of decision-making* that limits free and therefore rational market choices. The circumstances surrounding the choice decision in Australian higher education determine that students make choices in a unique decision-making environment. This chapter presented *what* students choose in Victorian higher education system.

Chapter Four identified the *criteria* students use in the development of a preference for attending a particular institution (*why* they choose). The students' criteria for preference are developed over time and prior to the initiation of the information search process. In addition, the criteria are developed with due consideration of the unique decision-making environment.

Chapter Five began the discussion about *how* students choose higher educational institutions in Victoria. Students' *external information search activities* are influenced by the criteria they have developed for preferring one institution to another. Furthermore, external information search in the process of making an educational choice is unique because education as a product is high in credence qualities that cannot be easily evaluated by prospective students. Chapter Five showed that external information search varies in both

type of information sought (search, experiential or credence qualities information) and source of information used (interpersonal, experiential, promotional and general).

Chapter Six continued the discussion of *how* students choose institutions and demonstrated that students' *motivation to search* for information is influenced by the students' decision-making capability and subsequently influences students' external information search and their criteria for preference.

Chapter Seven integrated the preceding three chapters and argued that students seek information regarding institution alternatives only if they feel that they are capable of making an informed choice (*decision-making capability*). Chapter Seven completed the discussion of *how* students choose higher educational institutions.

8.2 Victorian university students criteria for choosing university

Why students choose between institutions is determined by the criteria developed in the decision-making process. These criteria will be of varying importance to the student. Further, there may be no clear rationale for why a student chooses a particular set of criteria or indeed why they may use only one criterion in their choice rules.

Table 8-1: Hypotheses and findings relating to why students prefer one institution to another

<i>Hypothesis</i>	<i>Findings</i>
H4 ₁ Students at different institutions will perceive the reputations of their institutions positively	Rejected: some students did not perceive the image of their institutions in a positive light. Indeed, some students rated the reputation of their institution as poor. This confirms the idea that students are chosen by their institution rather than making an active decision to attend.
H4 ₂ Different institutions will convey different image perceptions	Not rejected: the different institutions' students had internally consistent (within the university) but varied (between universities) images of their respective universities. Education is, therefore, not an homogenous product in the eyes of the consumer.
H4 ₃ Reputation and admission criteria are potentially more important to the student than the program offering	Rejected: when examined at the aggregate level, the results show that students <i>in general</i> do not rate reputation and admission criteria more highly than the program offering. However, students at selected institutions do rate reputation and admission criteria more highly than the academic program.
H4 ₄ The criteria which are important to students vary with their choice of institution	Not rejected: The criteria that are most variable within the student cohorts are those which relate the how the educational product functions for the student. <i>Functional</i> criteria are the educational facilities, the type of people who attend, the degree of difficulty of the study program, students' familiarity with the institution and the institutional size. The least variation in students' requirements is in institutional <i>accessibility</i> criteria (study mode options, fees and costs, ease of access).

Students largely rated their institution's reputation as good or excellent. However, there was a proportion that rated their institution's image as only fair or in one case poor. Sandstone University students universally rated their institution's image as excellent. Other institutions had greater variation in their institutional image, with some National Specialist University students rating their institution's image as less than good.

An examination of the image items discovered four dimensions or factors underpinning institutional image: *Status* – consisting of the institutions' prestige, influence, awareness, size, degree of difficulty of study, selective admission, exceptional. *Style* of institution – consisting of innovation, quantitative, research orientated. *Tradition* – Modern, old, formal, traditional. *Approach* – general and theoretical. The key variables that differentiate student choice were grouped in the dimension relating to *status*.

The criteria most important to students, in rank order, were 1) the degree offering of the institution, 2) the location of the institution's campuses, 3) the relevance of the degree to a projected career path, 4) the image or reputation of the institution, and 5) job opportunities as a result of the program of study. These ratings show that Australian students are potentially more instrumental in their decision-making than their UK and USA counterparts. Further, fees and costs do not provide a key differentiation factor for institutions. In addition, location, while in the top five criteria, is not outweighed by the relevance of the degree to the students' aspirations.

The criteria were analysed to assess covariance between items considered important to students. Five factors were identified which contribute to students' choices: *Personal*, *Functional*, *Performance*, *Accessibility* and *Status* criteria. The most influential factor was found to be *Functional* criteria with 81% of the variance in student criteria for preference associated with this factor. The least influential factor was *Accessibility* criteria. It must be said, however, that different factors are important to the students from the different universities.

8.3 Victorian students choose their universities in unique ways

Before students can choose between competing alternatives, they must be aware of what is available. In addition, there is the implied decision-making process through which customers may arrive at possible choice outcomes. It was hypothesised that prospective students make *active* choices about the institutions that they eventually choose to attend. *How* students choose an institution had been framed around the argument that students' information search activity is an outcome of their motivation to search for information and their decision-making capability.

8.3.1 Victorian students' information search activities

External search for information is a problem solving strategy employed by a prospective student in the decision-making process.

The intensity of search behaviour is determined by the time spent on search, the amount of active search (site visits), options considered and variety of sources of information used by the student. Prospective students may seek information only if they believe they need further information to facilitate decision-making. There are prospective students who may not be motivated to seek information because either they believe they have sufficient information, or they believe they are unable to evaluate information that they receive.

Prospective students who decide that information search is necessary may seek information regarding only those attributes they consider important to the decision.

Table 8-2 outlines the hypotheses and findings discovered in Chapter Five – Information search activities of students.

Table 8-2: Hypotheses and findings related to information search activity of students

<i>Hypothesis</i>	<i>Findings</i>
H5 ₁ Passive information searchers can be identified as they will have low levels of search intensity and low usage of available sources of information	Not rejected: While the relationship is not perfectly linear across all categories, there is an association between intensity of search and extent of search for information. Some students conduct a very limited search and are therefore considered passive.
H5 ₂ There is a relationship between institutions in students' consideration sets	Not rejected: There are groups of institutions that a student considers. Some students consider only one institution, few students consider all available institutions. Students also appear to create <i>inept sets</i> , that is, institutions that they would <i>not</i> consider attending.
H5 ₃ Students information search activities increase with the size of their consideration set	Not rejected: Students' information search activity increases as the number of universities they consider increases. There is no difference between students who seek information because they have a greater ability to attend any institution (higher ENTER scores) and those who have lower levels of access to a variety of institutions.
H5 ₄ Students use interpersonal sources of information more than other sources of information	Not rejected: Students use interpersonal sources of information (friends and family, school colleagues, campus related contacts, career related contacts) more extensively than other sources of information. Then, students use general information provided by the institution, followed by promotional information and lastly, experiential information such as open days.
H5 ₅ Attendance at an institution's information day will be positively correlated with enrolment at the institution	Rejected: Some students do not attend open days at all. Only Sandstone University students who attend open days are likely to subsequently enroll at the institution.

The results suggest that there are students who are not active searchers in the decision-making process. Consequently, institutions cannot rely on all prospective students having access to and/or understanding the information provided by the various bodies. Further, these students are choosing to remain relatively ignorant if we take into account the students perceived *intensity* of search as well as the *extent* of search they undertake. Furthermore, there is no relationship between the students' capabilities, as measured by ENTER scores, and their information search activity. Thus, institutions cannot rely on high performing students being better informed than others.

Students also have clearly defined consideration sets (the group of institutions that they seriously consider attending), and potentially inept sets, (that group of institutions that the student would *not* attend). Consequently, institutions wishing to reposition themselves in a competitive open market system may find it difficult to move from categories in which the students place them. The degree program may be a key criterion; however, it is evident that students consider the degree program at *specific* institutions rather than at all available institutions. From this perspective, some students appear to choose institutions rather than simply career options, although the two are not mutually exclusive.

Students' overall information search activity is linked with the number of alternatives they consider (consideration set size). This might seem self-evident; however, students information search activity is not associated with their capability of attending any institution. Indeed, it appears that the students who are most capable may seek lesser numbers of alternatives.

The most important source of information to prospective students is interpersonal sources. However, few students rely on *formal* sources of interpersonal information (people from universities and career-related contacts). Further, the information provided by the institution is also used relatively extensively. Nevertheless, students are not using overtly promotional information, including open days, to the same extent as other sources; thus, perhaps suggesting a desire for objective information.

Students' lack of attendance at open days presents an interesting dilemma for institutions that see open days as a key marketing tool. Students are either using open day as a screening device, in which case attendance by students confirms a decision to go elsewhere. Alternatively, they are attending open days at institutions to which they aspire, but in which they are unable to eventually enrol. Once again, this situation may be indicative of a choice that is not a true open market.

8.3.2 Victorian students' motivation to search for information

Motivation to search for information was initially hypothesised as being comprised of multiple dimensions. A person's motivation to search is defined as their perceived need to

search for information relevant to the purchase decision. The consumer behaviour construct *involvement* has been expanded to include other variables and is defined as a motivational state that mediates student choice behaviour in terms of: the extent of external information search activity, the number of attributes used to evaluate products, the types of information sought, and the types of decision-making processes (choice rules) that students use.

The following table summarises the hypotheses and the findings relating to students' motivation to search for information.

Table 8-3 Summary of hypotheses and findings related to students' motivation to search for information

<i>Hypothesis</i>	<i>Findings</i>
H6 ₁ The antecedents to information search activity ⁵⁷ are associated with students' information search activities	Not rejected: Students' information search activities are associated with the motivation to search for information variables. However, there are variations between motivation to search for information variables and types of information search activity.
H6 ₂ Motivation to search for information is a multi-dimensional construct	Not rejected: Students' motivation to search for information is a multidimensional construct consisting of product class involvement, purchase decision involvement and risk and the symbolic value of the product. However, some variables originally hypothesised to contribute to students' motivation to search for information were discarded.
H6 ₃ Students use a combination of choice rules ⁵⁸ to facilitate decision-making	Not rejected: Students place differing emphases on <i>complex</i> decision-making rules, <i>simple</i> rules and <i>externally</i> dominated rules. The ENTER rule is used by most students. However, the complex choice rules are used by those students who are most confident of their 'product' knowledge.
H6 ₄ Choice rules are associated with the extent and type of information search activity	Not rejected: The more complex the choice rule, the more likely that a student will have actively sought information from a variety of sources. Further, it appears that choice rules are not used as a method of circumventing the information search process.
H6 ₅ Choice rules are associated with the students' motivation to search for information	Not rejected: Highly motivated students are more likely to use complex choice rules. Those who perceive the greatest levels of risk, social aspiration and significance of the educational product are more likely to rely on <i>externally</i> directed decision-making.
H6 ₆ Students' motivation to search for information is associated with the students criteria for preferring an institution	Not rejected: There are positive associations between motivational variables and students' criteria with the exception of accessibility which was negatively associated. The motivational variables status aspiration and time pressure were not significantly associated with students' criteria for preference

⁵⁷ Motivation to search for information was initially hypothesised to be represented by the antecedents to information search activity such as product class involvement, purchase decision involvement, risk, symbolic value of the product, etc.

The students' information search activities are associated with their motivation to search for information (antecedents to search). Product class involvement was associated with the students' information search activity of all types except the students' consideration set size. However, while product class involvement was associated with students' information search activity, the other motivation to search for information variables, purchase decision involvement, risk and social significance of the educational product, were more strongly associated with students' search activity. Consequently, we cannot infer that students' level of interest in the educational product will lead to greater levels of search. In addition, the time pressure dimension, which was hypothesised to lead to lower levels of search overall, is associated with greater levels of search. This leads to the possible conclusion that students may accumulate perceptions of time pressure as they gather more information – thereby indicating that they may not be able to cope with the amount of information they gather.

Motivation to search for information is a multi-dimensional construct. However, time pressure and students' status aspirations have little to do with the construct motivation to search for information and they should be excluded from the model. Status aspiration is associated with the students' perception of the social significance of the product but does not contribute to an overall model of students' motivation.

Students' choice rules are a consequence of involvement and are associated with styles of decision-making. Students use a combination of rules but will weight their decision-making differently depending on whether they favour a *complex* decision-making strategy, a *simple* decision-making strategy or an *externally* directed strategy.

The students' use of choice rules lead to differences in their information search activity. Students who use *complex* rules tend to seek more information than those who use *simple* or *externally* directed rules. This result suggests that students use information search activity to enable them to use a more complex decision-making strategy – as opposed to the consumer behaviour domain where consumers use choice rules to simplify the search process.

In addition to choice rules influencing information search activity, students who are highly motivated to search are more likely to apply complex decision-making rules. However, the perceptions of risk, status aspiration and social significance of education tend to lead the student to use of an *externally*-directed rule. This may be indicating that students use ENTER scores as a proxy for determining the social value of the product, thereby assuaging social and symbolic risk.

⁵⁸ Choice rules are the mechanisms that a student uses to arrive at a choice decision and are defined as *complex* (where a student considers multiple attributes and makes tradeoffs between attributes), *simple* (where the student considers a single attribute or makes decision when they reach a satisfactory level on one attribute) and *externally* dominated (where the student uses their ENTER score and/or where the student has subcontracted the decision to another who knows better).

8.3.3 Victorian students' decision-making capability

At the beginning of this study, decision-making capability was hypothesised to be a series of relationships where:

- The student perceives that they have an ability (or not) and will seek information (or not) according to their self perceived capabilities
- A student's level of knowledge about the product class will determine their perception of their ability to seek information.

This study shows that confident students search more actively than others do. Unconfident students may not search at all for formal information and may avoid the situation. Unconfident students are more likely to use interpersonal sources of information. Furthermore, students with low decision-making capability may transfer the responsibility of decision-making to another. High levels of uncertainty lead to greater levels of information search. Thus, tolerance for uncertainty should lead to greater levels of external information search. Students search for information in order to avoid uncertainty. Furthermore, they will seek information if they feel that they have the capacity to control the decision-making environment. Domain knowledge affects the type of information sought and used. Students with low levels of domain knowledge are more likely to seek interpersonal sources of information. Students who enjoy a challenge (need for cognition) are likely to seek information on a continuing basis.

Table 8-4: Hypotheses and findings relating to students' decision-making capability

<i>Hypothesis</i>	<i>Findings</i>
H7 _{1a} Students' expertise in the decision-making domain will be associated with the students' decision-making capability	Partially accepted; not all variables were associated. There appeared to be no relationship between a student's objective expertise and her/his subjective expertise. Further, those with the most objective expertise appear to be least convinced of their capability.
H7 _{1b} Students' self-confidence will be associated with the students' decision-making capability	Not rejected; students' self-confidence as measured by their optimism and self-esteem is related to other decision-making capability variables. In particular students' self-confidence is associated with their perceptions of their decision-making expertise.
H7 _{1c} Students' cognitive characteristics will be associated with the students' decision-making capability	Rejected; although some variables showed partial associations, the overall level of associations between the variables in question were not found to be sufficient.
H7 ₂ Students' decision-making capability and their information search activity are associated	Not rejected; however, a student's belief in their ability to assimilate information is a more important indicator of their propensity to collect information than any of the other decision-making capability variables.
H7 ₃ Student's decision-making capability and their motivation to search for information are associated	Not rejected; notwithstanding this result, the findings challenged the a priori assumptions that were originally made about how each element of decision-making capability might be influenced by a student's motivation to search for information.
H7 ₄ Students' decision-making capability and their use of decision-making choice rules are associated	Not rejected; student's who are confident and have greater levels of self belief are more likely to use complex decision-making choice rules and are less likely to delegate the decision to others.
H7 ₅ Students' decision-making capability is associated with the students' criteria for preferring an institution	Rejected; there are very few significant associations between the students' decision-making capability variables and their criteria. The overall level of association is not sufficient to infer a relationship between the two concepts.

Overall, the hypothesised multidimensional construct '*decision-making capability*' was not demonstrated to have sufficient associations *between* the variables to be called a construct. However, the associations identified between the individual variables and the students' decision-making behaviour are still of interest.

8.3.3.1 Associations between students' decision-making capability variables

Students' subjective expertise (belief in their knowledge and ability to gather information) is associated with their need for cognition, self-esteem and optimism. However, it is not associated with students' objective expertise (level of accurate knowledge about their institution), illustrating that students may feel that they have sufficient knowledge and confidence but not have undertaken a search that could lead to an objective understanding of their chosen institution. Further, while objective expertise is associated with all types of

information search, it is not strongly associated with any of the other hypothesised decision-making capability variables. Indeed, objective expertise appears to be an outcome of an extensive search and a large consideration set size, which is indicative of the student who is not optimistic about their chances of acceptance at their institution of choice. Consequently, it cannot be inferred that objective expertise has any association with motivation to search for information. This is in direct contrast to the findings of authors such as (Celsi & Olson, 1988; Selnes & Troye, 1989) who found that objective expertise was related to types of involvement.

Students' confidence in their decision-making capability is associated with the extent of search and search intensity. Students who are highly confident have smaller consideration sets. Furthermore, there are strong associations between students' work ethic and their pessimism, illustrating that some students may use work as a mechanism for controlling their environment. If we accept that optimism is the opposite of pessimism, there is support for this argument, as optimistic students also have a higher tolerance for uncertainty and lower work ethics – the potential equivalent of 'it will all work out in the end.' This does not necessarily indicate that some students are indolent. It may be that this group is not representative of the population at large. Agreement with statements such as "I only work as hard as I have to" might be suggestive of a student who works 'smarter' not 'harder'.

The results surrounding student cognitive characteristics indicate negative associations between the need for cognition, work ethic and susceptibility to interpersonal influence. We may infer that there are students who are 'independent' decision-makers who do not defer to others in the decision-making process and who also have greater levels of confidence in their decision-making capability. While the opposite may not be true, it is also reasonable to conclude from this study that there are some students who are highly susceptible to interpersonal influence and who do not feel empowered in the decision-making process.

8.3.3.2 Associations between students' decision-making capability and information search activity

Students' decision-making capability and their information search activities are associated. However, students' need for cognition is only associated with the students' self-perceived intensity of search. This may imply that students with a high need for cognition are prepared to abstract from internal information rather than seek further external information. This would be consistent with a student who enjoys the thinking task.

It is not surprising that a student's work ethic is not associated, or negatively associated, with their information search activities. Nevertheless, this implies that there are students who choose not to search for information and therefore cannot be relied on to be active participants in the decision-making process. These students might also be at risk of being ill-informed and thus dissatisfied with the choice that is eventually made by or for them.

Students' subjective expertise and subjective knowledge are associated with all types of information search activity. This is indicative of an extensive information search leading to students' belief in their expertise in the domain. What is interesting is the association between objective expertise, subjective expertise and information search activity. It is clear that students who have higher levels of subjective expertise have relatively low levels of objective expertise while both types of expertise are associated with information search activity. This implies that students who have higher levels of subjective expertise are seeking information that is relevant to them such as credence quality information and which is not readily measurable through the objective measures used. Further, this implies that the technical knowledge required to answer the objective expertise questions is not particularly important to students with higher levels of subjective expertise. However, one would have to question the level of engagement of students who know neither their faculty name nor the location of their libraries!

Students' confidence is not associated or is negatively associated with most of their search activity. While this shows that students, who 'feel good' about themselves, are not actively seeking information, it also implies that these students are potentially over-confident when limiting their information search activity to one institution. In addition, while they recognise the importance of search (intensity of search), they are not necessarily conducting an extensive search as a result.

8.3.3.3 Associations between students' decision-making capability and motivation to search for information

Students' decision-making capability and their motivation to search for information are associated. Students' work ethic is negatively associated with both types of involvement but is positively associated with the social significance of the educational product and status aspiration. This result suggests that students are motivated to work by their need for social approval and somewhat explains the association between work ethic and susceptibility to interpersonal influence. On the other hand, the results show that some students circumvent the decision-making process by relying on others to make the decision. These are the students who have lower levels of purchase decision involvement and higher levels of susceptibility to interpersonal influence.

8.3.3.4 Associations between students' decision-making capability and choice rules

Students' choice rule preferences (*complex* multi-attribute, *simple* single-attribute and *externally* dominated) are associated with students' decision-making capability. Students' work ethic is negatively associated with their propensity to use a complex decision-making strategy and positively associated with their potential to rely on using the ENTER score as a mechanism for decision-making. This implies that the student with a low work ethic is less

likely to use a complex choice rule and may rely on the ENTER score to make their decision for them. Conversely, those students with a high need for cognition are not as likely to use a *simple* or *externally* directed decision-making strategy; although the level of association does not extend to a use of complex choice rules by these students.

The association between susceptibility to interpersonal influence and choice rules supports the argument that for some students, the decision may be sub-contracted. However, each dimension of *susceptibility to interpersonal influence* contributes to our understanding of the student in different ways. For example, students who seek social approval are more likely to use the ENTER score rule and a simple decision-making strategy. Conversely, those who seek information from others are more likely to use delegation in combination with a complex decision-making strategy. Thus, while students may be said to be more or less susceptible to interpersonal influence, the dimensions of their susceptibility leads them to quite different decision-making strategies.

Students' subjective expertise is also linked to their use of *complex* choice rules. It is not associated with the use of *simple* and *externally*-directed choice rules. This result supports the argument that students who believe they have expertise are more likely to use a decision-making strategy that is self-directed and relatively sophisticated. Those who do not have this belief in themselves may not take on a somewhat daunting decision-making task.

An interesting result is the propensity of those with objective expertise to rely on the ENTER score rule but to be less likely to entirely delegate the decision to another. This result, combined with the results relating to the students' uncertainty orientation may imply that students develop objective expertise when they are unwilling to delegate to another and when they have low levels of tolerance for an uncertain environment. That is, they require certain and accurate information, rather than reliance on the opinion of others.

In addition, students' confidence in themselves is linked to use of complex choice rules; further highlighting that there may be a type of student who is feels capable of undertaking the decision-making task. Pessimists are more likely to use the ENTER score rule although they are not likely to use delegation as a decision-making strategy. This may be indicative of the ENTER score being a certain and relatively predictable element in what is otherwise an uncontrollable world for the more pessimistic applicant.

8.3.3.5 Associations between students' decision-making capability and criteria for preference

The predicted association between students' decision-making capability and their criteria for preference was largely unfounded. *Status* criteria were important to those who are susceptible to interpersonal influence and those with subjective expertise. In addition, *performance* (achievement) related criteria were also important to those who were susceptible. Consequently, we may infer that students who are susceptible to interpersonal

influence will seek admission to institutions that support their social aspirations. Furthermore, when the negative association between accessibility and students' self esteem is considered, we can confirm that selective admission is an important element to students in the choice process. Therefore, open entry institutions are less likely to be desirable educational products.

8.4 The student as a rational consumer in an open market?

In conclusion, some students attend institutions that are not optimal in the sense that the student does not believe that they have access to the 'best' option available in the market. Thus, some students are not *choosing* – they are *chosen* by the institutions. This phenomenon contradicts the idea of an open market system where the student is the sovereign consumer. There appears to be a continuum of choice; with some students, who have both the capacity and capability, able to make a relatively unconstrained choice, while yet others, who lack capacity and capability, are unable to make a free choice. The students with the greatest level of capacity and capability may seek only one or two prestige alternatives. However, the information they seek is likely to be limited, as they have been directing their efforts around attaining a place at the 'first choice' universities. At the opposite end of the spectrum are students with limited capability and/or capacity who must seek accessible alternatives. Thus, both ends of the continuum are asking 'which university will have me?' However, the high option group has more actual choices available to them.

The various institutions present differing images to their students and some variables are more important than others. For example, students are seeking career paths *and* prestigious courses, preferably at prestigious institutions. While this may seem self evident, it is not consistent with an equitable and open market system where all will have equal access to a quality product (prestige products are prestigious because they are not generally available to all). Consequently, demand for the prestige university will continue to outstrip capacity. In addition, students do not necessarily want the institutions to open up the market to 'others,' as that may result in a decrease in prestige. Furthermore, prestige, image and social contacts are important criteria to those students in a position to have a somewhat open choice. Therefore, institutions, which are not rated highly on these factors (even by their own students), are unlikely to be attractive to the broader student cohort. Students may choose not to continue to post-secondary study rather than study at a 'second rate' institution as suggested in previous studies (Byrne & Dimitriou, 1995b).

Information search activity is also characterised by students who appear unable or unwilling to inform themselves of the product options available to them. In a high involvement service such as education, this is not *rational* consumer behaviour as the risks associated with purchasing the 'wrong' product may be profound if the student is not readily able to change into another course. Eluding the decision-making process is an attribute of the fearful and

panicked decision-maker; although in this context, it might equally be indicative of consumer who trusts the system to take care of them. For example, a comparison between decision-making capability results and information search activity indicates that many students are relatively comfortable with their levels of ability to make a decision; yet, they have limited their 'search' to one alternative within the set of available institutions. Not surprisingly, interpersonal information from close contacts is more influential in the decision-making task than general information, promotional information or attendance at open days. Furthermore, it appears that open days may not be as influential marketing tools as previously thought.

Students' motivation to search for information presents some intriguing discoveries. First, the students may be *involved* in the decision but not have a greater intensity or extent of search. Second, students who collect *more* information seem to have the greatest levels of perceived time pressure. Third, students seem to use the entry requirements of the institution as a proxy for determining the social value of the educational product, as the ENTER score rule is most associated with social significance, risk and status aspirations. Thus, we have a student who says one thing and does another, collects more information than they can assimilate, and makes a decision based on *maximising* the amount they 'spend.'

The students' ENTER score is a proxy for the amount they have available to 'spend' on an educational product. The less the ENTER score the less valuable the product (as ENTER is a proxy for the intangible outcomes). Consumer markets are characterised by the consumers' attempts to *minimise* the amount they spend on a product. Therefore, students' attempts to maximise both the amount they have available and the amount they eventually use in order to gain access to the product, is in direct contrast to consumer and economic theories of customer behaviour.

In marketing terms, this implies that institutional customers are being forced to make decisions about products that they do not understand. Further, they are pressured by the assumption that by maximising the ENTER score, what they gain access to will provide a career path and future life opportunities. The customer in this scenario is not in a powerful buying position – the customer is not King!

Students' decision-making capability presents some further insights into the student as a customer of higher education. Students' confidence in themselves leads to some anomalous behaviour: students with the strongest levels of self-belief tend to know the least about the decision-making environment. This implies that, for some students, 'real' knowledge is not important in the decision. Further, these confident students tend to seek less information and have smaller consideration sets – thus they appear to assume that they will gain entry to their institution of choice. This tendency might be problematic for the students who fail to live up to their own expectations.

A major assumption underpinning Australian government education policy is that students (and/ or their families) act as *consumers*, undertaking a complex decision-making process when choosing between courses and/or institutions. The results of this study demonstrate that this is not altogether the case; students at times sub-contract and circumvent active decision-making. While this might be consistent with other high involvement purchase situations; for example, enlisting a professional to buy a car on your behalf, the *student* is not the one undertaking the complex decision-making task in this scenario, it is the *surrogate* who undertakes the decision-making process. The relationship between these students' motivation to search for information and decision-making capability suggests that, for some, the decision is simply too daunting to make. For these students, the provision of even more information by helpful governments and institutions may have the unintended effect of creating panic 'buying' (i.e. choosing the first option which comes to mind), which may simply advantage the 'prestige' products, as they are more likely to be the salient option if the student is pressured into a decision.

As a consequence, we must conclude that students are literally *unable* to behave as conventional customers in an open market system. They have limited capacity to choose and they appear to have limited ability to assimilate the information provided. Further, they may not be adequately informed, but they are not concerned about being better-informed consumers of the educational product. They 'pay' whatever they have available in terms of ENTER scores and they take whatever the supplier is prepared to provide.

Where then is the customer? And how might the university of the future deal with these anomalies? The following chapter discusses some of the implications of these findings.

9 Implications, limitations and directions for future research

The preceding chapters have provided detailed examination of prospective students' decision-making in the choice of higher educational institutions in Victoria. This final chapter discusses some implications of these findings for institutions and policy makers in addition to limitations of the study and possible directions for future research.

To begin, it is worthwhile reviewing some of the economic principles and assumptions underpinning the policy directions in higher education at the time of this study towards a student-based market.

9.1 Some fundamental assumptions underpinning higher education as a market commodity

The assumptions that are associated with the basic economic principle of consumer sovereignty include:

- Consumer sovereignty is based on the assumption that consumers will determine demand for a product or service. Consumer sovereignty implicitly assumes that:
 1. Consumers are fully conversant with their needs and wants
 2. Consumers will understand the options available to them
 3. Consumers will choose rationally
- The law of demand posits that there is an inverse relationship between price and demand (as price goes up, demand falls)
- The law of supply postulates that firms will only supply larger quantities of their product if they receive a higher price, all other things being equal.

Implicit in the application of these principles to a higher education market is the assumption that education has a *utility* value. That is, education has some extrinsic or intrinsic worth to the person who consumes it. The extrinsic worth of education might be, for example, the lifetime earnings of the graduate. Intrinsic worth might be the status and prestige to be gained in the process of becoming educated, or simply the enjoyment of going to university and learning about the world.

9.2 Are there other theories that might also be applied in the higher education 'market'?

Basic economic theories, such as supply and demand pricing, and utility value, might be applied in the higher education 'industry.' Indeed, some authors in the study of 'human capital' apply these theories quite extensively (cf Gurgand, 1998). However, it is argued here that these basic economic principles may be moderated in the higher education market by extended economic theories, such as a '*bandwagon*' and a '*snob*' effect. The *bandwagon effect* occurs when more products are demanded because the consumer wishes to purchase a product that is approved of by others. Thus, demand for a product will increase when others purchase the product, even if price increases. The *snob effect* occurs when a particular type of consumer perceives a product as *more valuable* because it is not generally available to all. In this scenario, the higher the price, the less generally available the product and therefore, the more desirable the product becomes. These extended theories more precisely explain the behaviours displayed by students in this study.

Another economic theory, which may be applied to this market, is the theory of *conspicuous consumption*. This theory asserts that consumers derive utility (value), not only from the product but also from the price that others think they paid for it. This consumer wants to be seen to be spending more than others, as it implies that the consumer who is spending has more status and prestige.

These additional three theories (*bandwagon*, *snob effects* and *conspicuous consumption*), which muddy the clear waters of the more basic economic theories outlined above, are applied extensively in marketing theory. Thus, marketing theory may be able to explain much of the seemingly anomalous behaviour of students as customers in a higher education market.

9.3 Is the student a sovereign consumer?

Consumer sovereignty is fundamental to the efficient operation of an economic market. This thesis demonstrates that students may not consider themselves as having the ultimate power in the decision-making process. Further, while some do not feel empowered, those who are most capable of having an open choice seek the least information; thus potentially choosing less than optimal alternatives. Therefore, even those with the potential to be sovereign consumers voluntarily limit their choices to those institutions where they are in a less powerful 'buying' position.

Another attribute of *consumer sovereignty* is the consumers' ability to determine what they need and want. The student certainly knows what they *want* of the higher education product. Hence, it would seem to be a sensible move to make available what the student wants by increasing supply, in what appears, at least on the surface, to be a supply constrained

environment. In a commodity market, the increase of supply would decrease the price of the product and make it generally accessible to all. However, when we look at the underlying dimensions of the institutional images (Chapter Four); *Status, Style, Tradition* and *Approach*, it appears that some students prefer a product that is largely inaccessible to the greater population. Thus, increasing supply in this market is likely to decrease the level of demand.

Furthermore, when we examine traditional university structures, the supply of undergraduate education is constrained due to factors outside the control of the institution, such as access to appropriately qualified and capable teaching staff, as well as capable students who have the capacity to invest time and effort in tertiary studies. Thus, university education has traditionally performed a 'social sorting' role by limiting access to well-paid professions. The move in Australia to the provision of a mass education system has had some important consequences. Firstly, the social sorting role provided by the universities declined as more people embarked upon a tertiary education than ever before (thereby potentially decreasing the value of the 'product'). Secondly, the increase in demand for 'prestige' products increased dramatically as more students than ever wish to obtain a university education. However, due to the constraints on supply within prestige institutions, the entry criteria are also constrained. While this makes sense in economic terms, it does not support Australian governments' policy directions towards a more equitable tertiary education system. In addition, it generates a system where very few are able to be *sovereign consumers*.

Another assumption underpinning *consumer sovereignty* is that the consumers understand the options available to them. This thesis shows that students do not entirely understand the options available to them. The intangibility of the outcomes associated with the educational product induces the student as consumer to rely on the ENTER score as a proxy for many other attributes. The students with the highest levels of objective understanding of the institutional product and those with the greatest levels of information search activity were also the least confident of their ability to evaluate the product. This result suggests that increasing students' understanding of the educational product will not be an easy task. First, those who have the greatest understanding do not believe they have an adequate understanding. Second, those who do not understand do not appear to be concerned with their lack of understanding. It is a major challenge to ensure that those who seek information are reassured that the information they have is adequate to the decision and affirm their ability as decision-makers, while at the same time encouraging those who are not concerned that they should be. These objectives would appear to be contradictory. Accordingly, the simple provision of *more* information may not solve the problem of the student who trusts in the competitive dynamic of the system to make the decision for them. These students will not seek information, even if it is available, accessible and relevant to the decision.

9.4 Can higher education be treated as a commodity like any other?

The concept of the student as a rational consumer operating in an open market system is based on the assumption that higher education is a *commodity* like any other. This assumption is difficult to sustain in the light of evidence which shows that many students are selected by their institutions. Thus, the student does not choose, rationally or otherwise. For a rational student choice environment to operate, the competitive selection process would have to cease to exist. Thus, supply would not be constrained by the allocation of student places by a government. Of course, this is an unlikely scenario in an environment where universities rely on government funding to operate. Even in the USA, where many institutions are privately funded, the supply of a quality education is finite; thus selection processes are applied to ensure that the student who has both the capacity and capability gains the place. This research demonstrates that students do not see their universities as interchangeable commodities.

As a consequence we cannot assume that freeing-up the institutions' capacity to supply, as suggested by current Australian government policy, will increase the number of options available to the prospective student. For example, some students rely on status and prestige and will thus choose to be chosen by the 'first choice' institutions⁶⁰. Thus, first choice institutions will continue to use selection processes and may increase supply incrementally (but not substantially, as that would decrease the overall desirability of the product). Second choice institutions will be further disadvantaged as they compete for students who may see them as somewhat second best. While this research shows that students will attend second choice institutions, as indicated in Chapter Three, the level of motivation and commitment of students who are attending their first choice is likely to be higher.

9.5 The importance of being part of the chosen few

In summary, this thesis argues that the fundamental principal of open markets, that of *consumer sovereignty*, may not operate in the higher education 'market'. Students are *chosen* and the process by which they are chosen has an intrinsic value; thus students as consumers of the higher education product may not want to change the process to an open market system. An open market would mean that 'anyone' could have a tertiary education and that would decrease the value of education overall (*snob effect*). Further, as the ENTER score may be a kind of *conspicuous consumption*, increasing accessibility may also devalue the educational product in the eyes of the student as consumer.

⁶⁰ Selection by a first choice institution indicates that a student has capacity and capability; consequently to be selected supports social and status aspirations.

Nevertheless, a more open and equitable market than that which currently exists in Australia could be developed if we include principles *other* than supply and demand. This research shows that prospective students need to appear to succeed in a difficult environment, they are unwilling to attend an institution which no one else apparently wants, and they want to appear to have exchanged the highest possible value (currently measured by ENTER) for access to their institution of choice. Further, students may not be willing or able to undertake a position of consumer sovereignty and thus, may need some support in the decision-making process which extends well beyond the provision of marketing related information.

It appears, therefore, that students cannot currently be considered as sovereign consumers in an open market because 1) the market is not open and 2) the decision must be based on a criterion over which the student has limited control (their ENTER scores). In order to empower the student as *consumer*, we must provide them with the wherewithal to make an open choice regardless of their prior access to resources. Resources, in this context, are the cultural and private ‘capital’ required to enable the student sovereignty in the decision making process.

If consumer (student) sovereignty is important, the challenge for higher education policy therefore becomes – how does a government and/or the higher education system ensure that students within earlier educational systems gain access to sufficient resources to enable those students to make an informed and reasoned choice when they reach their higher education decision?

9.6 Limitations of this study and suggestions for future research

9.6.1 Limitations

The limitations of the current study are:

1. The sample is limited to incoming students within a single state of Australia. However, the Australian States are similar in most respects, accordingly the results may be generalisable to the Australian population. The research design was adopted to ensure that there were sufficient numbers in each ‘cell’ for higher order multivariate analysis. A more comprehensive study involving a larger population sample (Australia wide) may have gained larger numbers than could be adequately analysed with existing computing equipment. Alternatively, a random sample of smaller dimensions may have led to insufficient numbers in each unit of analysis. It appears that students with options to study in their home state tend to study in locations ‘close to home.’ For example, 92% of Victorian students and 90% of NSW students study within their state of permanent residence (Department of Education Training and Youth Affairs, 2000). NSW and

Victoria are Australia's most populous states representing 59% of Australia's population (Australian Bureau of Statistics, 2000).

2. The response rate (27%), is typical of current mail survey results in Australia. While within acceptable market research guidelines (Hague & Jackson, 1996), is still insufficient to be certain of the level of self-selection bias within the sample. For example, females responded at a higher rate than males. However, the demographic statistics of the respondents on known variables suggests they are proportionally representative of the population enrolled within the higher educational system (Department of Education Training and Youth Affairs, 2000).
3. The scales used were validated in a number of studies, mostly in the USA and Europe. These scales were adapted and piloted for the Australian prospective student. However, while Cronbach's alpha was in most cases higher than 0.50, which may be acceptable for preliminary results, it was not always greater than 0.70 which is the lower limit of alpha required to be able to generalise research results.
4. Students were surveyed during the early weeks of semester in order to limit the potential for cognitive dissonance influencing the type of information they student had access to and to attempt to limit the types of issues they felt were important to their decision. However, as with all post-choice measurements, there may have been some cognitive dissonance avoiding behaviours prior to the survey. 'Buyer remorse' is a problem for most Australian universities with a significant proportion of Australian students considering dropping out of university within their first year (Pargetter et al., 1999). Indeed, this research demonstrates that much of this remorse may be due to students who are ill-informed about their respective universities and their capabilities within the university environment.
5. This study chose students in the first weeks of attendance at an institution of choice because the original intention of the research was to ascertain the influence of personal characteristics on the student's choice of institution. However, the complexity of the final interrelationships⁶¹ between variables proscribed the modelling of any of these groups of variables on a choice outcome. Surveying students prior to their entry to university may have more accurately determined their exact information search activity – it would have been closer to the time of the actual search and the student would not have had to think back over months or weeks. However, as demonstrated by both these results and earlier research (James, Baldwin, & McInnis, 1999), students' aspirations and their choices do not always match. Furthermore, surveying students at the time of choosing has logistical difficulties: First, it is difficult to determine who will enter university prior to the ENTER score allocation. Second, it is impossible to access the

⁶¹ See Chapter Seven

non-school-leaver population; those taking up deferred places, transferring between systems and mature aged entries. Third, the levels of stress felt by students at the time of year when they are determining their final preferences are already profound. Accordingly, this study chose students who had already been accepted into an institution. In addition, research into students *prior to entry* to university has recently been conducted by others (James et al., 1999) it was not the intention of this study to replicate earlier work.

9.6.2 Suggestions for future research

The ability of a student to actively choose their institution in Australia is limited. As demonstrated by Table 5.3 students consider about 2-3 institutions to attend. However, they do not necessarily attend an open day or information session at the institution they finally enrol in (see Table 5.17). Students may appreciate the environment of the institution where they attend a session but that does not apparently lead to an enrolment. This is a clear difference between research findings in the USA and UK and Australia. Future research into the reasons underpinning this would indicate if this is cultural or a limitation of the research. While it was originally thought that this study did not need to cover this already extensively researched field, it is clear that some differences do exist and these could be explored further. For example, some services marketing literature suggests that the more 'at home' the customer feels the more likely they are to feel satisfied with the experience (Arnould & Price, 1993; Bitner, Booms, & Mohr, 1994; Zeithaml & Bitner, 2000). While it was not the purpose of this study to ascertain the satisfaction or otherwise of students with their choices, future research could explore the influence of the university visit on students' propensity to attend - that is - are open days used as a screening device for deciding which institution *not* to attend?

Policy developments in Australia are increasing deregulation of the higher education environment. The growing tendency for universities to select students on bases other than strictly academic merit may place less constraints on students' choice of which university to attend. Consequently, future research might consider the possibilities of exploring which choices would students make if not operating in such a constrained environment. The impact of the constraint on open choice has not been fully explored in this research. For example, the number of students prepared to attend a university which was not of excellent reputation was an interesting finding. Future researchers could ascertain why a student, as purchaser of a product, would buy something that was considered second best?

The contrasts between students' image perceptions of their own university and that of others in their consideration set could be explored. How do they see universities other than their own? Are these attributes considered to be good or are students indifferent to them?

The impact of information search on transition issues urgently needs investigation. This would be a longitudinal study and would require tracking of students' behaviours over time. It appears the more expert the student, the less likely that they will face transition problems when entering the university of final choice. The fit between the student and the institution is likely to be better if *both* the student and the institution apply selection processes designed to maximise the potential outcomes. Expertise leads to better co-production via more demanding customers and therefore a better 'quality' overall (Chappell, 1994). However, it must be recognised that the converse may also be true. Students who are not expert (only 13% of respondents were highly expert) may not have the ability to co-produce a high quality education. They may face strong levels of dissonance when they enrol and are potentially more likely to face transition problems when they enter the university. Consequently, future researchers may seek to examine the implications of information search activity on students' involvement with the educational process and students' ability to commit to their institution of choice as a co-producer of a service rather than a passive recipient of a product.

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A Selection Processes in the USA and UK

Tertiary applications in the United States of America

<i>Stage in admission process</i>	<i>Comments</i>
Goals and aspirations	Student develops an ambition to attend university and decides on career and life goals
GPA (high school)	Indicates capability
Socioeconomic status	Indicates capacity to attend
SAT or ACT tests	Determines qualifications and therefore the institutions to which the student will apply
Individual admission tests	If the student has decided on a specific discipline the institution(s) may require a separate admission examination
Direct mail received	From universities that participate in the SAT test results program. Usually targeted at high aptitude students
Student application	Student may apply to several institutions
Selection criteria is applied	Student may be acceptable to several institutions
Offer is sent	Student may receive several offers
Offer accepted	Student may accept several offers
Attendance	Student attends one institution
Retention	Student remains to matriculation

Table A-1: Applications process in the USA. Source: (Davis-Van Atta & Carrier, 1986; Hossler & Gallagher, 1987; Maguire & Lay, 1981; Yost & Tucker, 1995)

Tertiary Applications in the United Kingdom

<i>Stage in admission process</i>	<i>Comments</i>
Goals and aspirations	Student develops an ambition to attend university and decides on career and life goals
O levels and A levels	Indicates capability
Socioeconomic status	Indicates capacity to attend
Secondary school examinations	Determines qualifications and therefore the institutions to which the student will apply
Student application	Student may apply to five institutions
Selection criteria is applied	Student may be acceptable to several institutions
Offer is sent	Student may receive offers of two types 1: Conditional on passing the A level examinations 2: Unconditional where student has already passed A level equivalents
Offer accepted	Student may accept offers in two ways 1: Firm acceptance, indicating that the student will take this place 2: Insurance acceptance, indicating that the student will take this place if the firm acceptance is linked to a conditional offer. The insurance acceptance is only available to students who are awaiting results and have a conditional offer.
Student sits examinations	Student may then meet criteria for conditional offers after accepting an offer
Attendance	Student attends one institution
Retention	Student remains to graduation

Table A-2 : The application process in the UK. Source: (Gabbott & Sutherland, 1993; Hughes, 1994)

B Supporting references for Criteria for Preference

The list of criteria that follows has been generated from the literature. However the categorisation is overlaid for the purpose of assisting the reader to follow the research argument. This categorisation is not meant to imply that the authors categorised their criteria in this way.

This appendix presents a list of references to papers that identified criteria thought to be important to prospective students in the choice of university. No attempt has been made to evaluate these criteria in this appendix. The discussion surrounding these issues is contained in Chapter Four.

B.1 The institutional product (what the university offers)

The institutional product is defined by this author as the core offering of an institution and includes those factors without which the institution would not operate.

B.1.1 Programs

The primary reason that students attend an institution is because the institution offers a particular course or degree program that the student wants to study. The following papers cited the academic and other programs as important to the decision to attend an institution.

B.1.1.1 Quality and availability of majors offered

<i>Authors</i>	Quality and availability of majors offered		
	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Boyer (1986)	0	Research commentary	Varied
Brennan & Marriott (1996)	735	Survey	Research Metropolitan
Brown (1991)	398	Survey	Regional
Bruwer (1996)	922	Survey	Metropolitan
Carnegie Foundation for the Advancement of Teaching (1986)	1000	Survey	Varied
Chapman (1993)	55,276	Meta-analysis	Varied
Coccarri & Javalgi (1995)	1534	Survey	Metropolitan Regional
Dehne (1993)	4000	Survey	Research Metropolitan Regional Specialist
Dehne (1995)	0	Commentary	Varied
Edgett & Cullen (1992)	581	Survey	Metropolitan
Esteban & Apel (1992)	0	Content analysis of written materials	Varied
Little, O'Toole & Wetzel (1997)	467	Telephone survey	Metropolitan
Maguire & Lay (1981)	2500	Survey	Metropolitan
Martin (1996)	774	Survey	Regional university
Punj & Staelin (1978)	177	Survey	Research
Rosenfeld & Peng (1980)	0	Literature review	Varied

Quality and availability of majors offered			
<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Rudd (1984)	0	Literature review	Varied
Sanders & Peretto (1993)	0	Commentary	Varied
Sekely & Yates (1991)	1574	Survey	Regional
Stanley & Reynolds (1994)	2053	Survey	Varied
Whiddon (1995)	0	Commentary	Metropolitan Research
Winzar & Morley (1994)	95	Survey Factor analysis	Research Metropolitan Metropolitan / regional

B.1.1.2 The research program of the institution

<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
James et al. (1999)	934	Survey Depth interviews	Varied
Maguire & Lay (1981)	2500	Survey	Metropolitan
Martin (1996)	774	Survey	Regional university
Rudd (1984)	0	Literature review	Varied
Webb & Allen (1994)	1499	Survey Graduate	Varied
Widdows & Hilton (1989)	1600	Survey	Metropolitan Regional
Wing & Rowse (1986)	0	Modelling	Varied

B.1.2 The elements of reputation

The primary choice criterion is reputation. Reputation is defined as the set of beliefs held about the institution. These beliefs can be about quality of the educational programs, general reputation and alumni reputation. Many authors citing reputation as a criterion do not differentiate between types of reputation. The following papers cited reputation as instrumental in the decision to attend a particular institution.

B.1.2.1 Reputation for academic quality

Reputation for academic quality			
<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Brennan & Marriott (1996)	735	Survey	Research Metropolitan
Brown (1991)	398	Survey	Regional
Bruwer (1996)	922	Survey	Metropolitan
Buckley, Mahaffey & Turner (1996)	194	Survey Structural modeling	Regional
Chapman (1993)	55,276	Meta-analysis	Varied
Cook, Krampf & Shimp (1977)	70	Survey Multidimensional scaling	Varied Regional
Cook & Zallocco (1983)	241	Survey	Regional Metropolitan
Dehne (1993)	4000	Survey	Research Metropolitan Regional Specialist

<i>Authors</i>	Reputation for academic quality		<i>Type of institution</i>
	<i>Number of Students</i>	<i>Type of study</i>	
Discenza et al. (1985)	500	Survey Factor analysis	Metropolitan Regional
Edgett & Cullen (1992)	581	Survey	Metropolitan
Esteban & Apel (1992)	0	Content analysis of written materials	Varied
Grace (1989)	500	Survey	Regional Specialist
Hollenbeck (1988)	3330	Survey	Varied
Jonas (1992)	Unknown	Research Commentary	Regional Specialist
Maguire & Lay (1981)	2500	Survey	Metropolitan
Marshall & Delman (1984)	829	Survey Factor analysis	Regional College
Martin (1996)	774	Survey	Regional university
Murphy (1981)	186	Survey	
Punj & Staelin (1978)	177	Survey	Research
Ramsay (1990)	0	Review	Varied
Rice (1987)	1513	Survey	Regional College)
Roche Peters & Nelson (1987)	1193	Survey	Regional Metropolitan
Rosenfeld & Peng (1980)	0	Literature review	
Sanders (1990)	1592	Survey	Metropolitan Regional
Sekely & Yates (1991)	1574	Survey	Regional
Sevier (1990)	0	Commentary	
Sevier (1994)	0	Commentary	
Stanley & Reynolds (1994)	2053	Survey	Research Metropolitan Regional Specialist
Walters (1994)	Unknown	Survey	Metropolitan Regional
Webb (1993)	654	Survey	Metropolitan
Webb & Allen (1994)	1499	Survey Graduate	Varied
Webb, Coccari & Allen (1996)	222	Survey	Research Metropolitan
Whiddon (1995)	0	Commentary	Metropolitan Research
Widdows & Hilton (1989)	1600	Survey	Metropolitan Regional
Wiese (1994)	344	Survey	Regional
Wing & Rowse (1986)	0	Modelling	Varied
Winzar & Morley (1994)	95	Survey Factor analysis	Research Metropolitan
Yavas & Yaprak (1991)	152	Survey	Metropolitan / regional Regional Metropolitan
Yavas & Shemwell(1996)	58	Survey Correspondence analysis	Research Metropolitan Regional Specialist

B.1.2.2 Reputation of alumni

<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Bruwer (1996)	922	Survey	Metropolitan
Dehne (1993)	4000	Survey	Research Metropolitan Regional Specialist
Maguire & Lay (1981)	2500	Survey	Metropolitan
Webb & Allen (1994)	1499	Survey Graduate	Varied
Widdows & Hilton (1989)	1600	Survey	Metropolitan Regional

B.1.2.3 Prestige /Status/Tradition/Age as elements of reputation

<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Dehne (1993)	4000	Survey	Research Metropolitan Regional Specialist
Dehne (1995)	0	Commentary	Varied
Edgett & Cullen (1992)	581	Survey	Metropolitan
Esteban & Apel (1992)	0	Content analysis of written materials	Varied
Grace (1989)	500	Survey	Regional Specialist
Houston (1984)	0	Literature review / commentary	Specialist
James, Baldwin & McInnis (1999)	934	Survey Depth interviews	Varied
Marshall & Delman (1984)	829	Survey Factor analysis	Regional College
Rudd (1984)	0	Literature review	Varied
Sevier (1990)	0	Commentary	
McGinty Stodt & Wagner (1985)	1038	Survey	Metropolitan
Weiler (1989)	1009+239	Survey	Varied
Winzar & Morley (1994)	95	Survey Factor analysis	Research Metropolitan Metropolitan / regional
Yavas & Yaprak (1991)	152	Survey	Regional Metropolitan

B.1.3 Academic standards of an institution

Academic standards are set by all institutions and are designed to ensure the successful graduation Or matriculation) of the prospective student. However, students may choose relatively high or relatively low standards depending on their self-perceived capability to gain admission to the institution. The following papers cited academic standards as being an important component in university choice.

B.1.3.1 Perceived study load (both high and low requirements) and perceived ability to graduate

<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Cook & Zallocco (1983)	241	Survey	Regional Metropolitan
Department of Vocational Education and Training (1997)	1204	Survey Frequencies	Regional College of TAFE
Richardson & Stacey (1993)	213	Survey	Metropolitan Regional
Rosenfeld & Peng (1980)	0	Literature review	
Sanders & Peretto (1993)	0	Commentary	Varied
Sekely & Yates (1991)	1574	Survey	Regional
The Australian (1998)	0	Commentary	Varied
Webb & Allen (1994)	1499	Survey Graduate	Varied
Withuhn (1997)	0	Commentary	Varied
Yavas & Shemwell(1996)	58	Survey Correspondence analysis	Varied

B.1.4 Admission criteria of the institution

Admission criteria are often used as a proxy for determining the academic standards of an institution. The following papers cited admission criteria as decisive in the selection of which university to attend.

B.1.4.1 Selective admission and difficulty of access

Selective admission and difficulty of access			
<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Braxton & Nordall (1985)	0	Research with academic staff	Research Metropolitan
Brennan & Marriott (1996)	735	Survey	Research Metropolitan
Chapman (1984)	0	Conceptual argument	Varied
Cook et al. (1977)	70	Survey	Varied Regional
Cook & Zallocco (1983)	241	Survey	Regional Metropolitan
Dehne (1993)	4000	Survey	Research Metropolitan Regional Specialist
Dehne (1995)	0	Commentary	Varied
Dolinsky & Quazi (1994)	134	Survey	Metropolitan
Edgett & Cullen (1992)	581	Survey	Metropolitan
Houston (1984)	0	Literature review / commentary	Specialist
Kleemann & Richardson (1985)	Unknown	Survey Factor analysis	Research Metropolitan Regional
Punj & Staelin (1978)	177	Survey	Research
Rudd (1984)	0	Literature review	Varied
Sekely & Yates (1991)	1574	Survey	Regional

Selective admission and difficulty of access			
<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
The Australian (1999)	0	Commentary	Varied
Walters (1994)	Unknown	Survey	Metropolitan Regional
Whiddon (1995)	0	Commentary	Metropolitan Research

B.1.4.2 Ease of access and ability to meet admission requirements

<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Brooke Benjamin (1993)	0	Commentary	Research
Brennan & Marriott (1996)	735	Survey	Research Metropolitan
Brown (1996)	0	Commentary	International
Bruwer (1996)	922	Survey	Metropolitan
Buckley et al. (1996)	194	Survey Structural modeling	Regional
Chapman (1984)	0	Conceptual argument	Varied
Coccarri & Javalgi (1995)	1534	Survey	Metropolitan Regional
Dehne (1993)	4000	Survey	Research Metropolitan Regional Specialist
Department of Vocational Education and Training (1997)	1204	Survey Frequencies	Regional College of TAFE
Dwyer (1993)	0	Commentary	Varied
Edgett & Cullen (1992)	581	Survey	Metropolitan
Miller, Rzonca & Snider (1991)	225	Survey	Varied
Rosenfeld & Peng (1980)	0	Literature review	
Sevier (1990)	0	Commentary	
Stanley & Reynolds (1994)	2053	Survey	Varied
Webb & Allen (1994)	1499	Survey Graduate	Varied
Whiddon (1995)	0	Commentary	Metropolitan Research
Witthuhn (1997)	0	Commentary	Varied

B.1.5 Type of student who attends the institution

The type of student who attends the university is also seen as an important criterion in university choice. There are two main schools of thought about student type although both agree that students choose institutions where they will fit into the cohort of students attending at a particular time.

B.1.5.1 Quality and type of other students

Quality and type of other students			
<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Ashar & Lane (1996)	15	Focus groups	Metropolitan
Barondess & Glaser (1993)	1003	Survey	Research Metropolitan
Bruwer (1996)	922	Survey	Metropolitan
Dehne (1993)	4000	Survey	Research

<i>Authors</i>	Quality and type of other students		
	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
			Metropolitan Regional Specialist
Edgett & Cullen (1992)	581	Survey	Metropolitan
Esteban & Apel (1992)	0	Content analysis of written materials	Varied
Grace (1989)	500	Survey	Regional Specialist
Houston (1984)	0	Literature review / commentary	Specialist
James et al. (1999)	934	Survey Depth interviews	Varied
Kleemann & Richardson (1985)	Unknown	Survey Factor analysis	Research Metropolitan Regional
Litten (1982)	0	Conceptual review literature	Varied
Mullet (1985)	Unknown	Survey	Varied
Rosenfeld & Peng (1980)	0	Literature review	
Rudd (1984)	0	Literature review	Varied
Stanley & Reynolds (1994)	2053	Survey	Varied
Widdows & Hilton (1989)	1600	Survey	Metropolitan Regional
Wiese (1994)	344	Survey	Regional
Wing & Rowse (1986)	0	Modelling	Varied
Yavas & Yaprak (1991)	152	Survey	Regional Metropolitan

B.1.5.2 Diversity of student body Including race, gender and disabilities)

Diversity of student body (Including race, gender and disabilities)			
<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Chapman (1993)	55,276	Meta-analysis	Varied
Coccaro & Javalgi (1995)	1534	Survey	Metropolitan Regional
Dwyer (1993)	0	Commentary	Varied
Esteban & Apel (1992)	0	Content analysis of written materials	Varied
Grace (1989)	500	Survey	Regional Specialist
Harris (1994)	0	Commentary	Metropolitan Regional
James et al. (1999)	934	Survey Depth interviews	Varied
Jonas (1992)	Unknown	Research Commentary	Regional Specialist
Kleemann & Richardson (1985)	Unknown	Survey Factor analysis	Research Metropolitan Regional
Maguire & Lay (1981)	2500	Survey	Metropolitan
Marshall & Delman (1984)	829	Survey Factor analysis	Regional College
Miller et al. (1991)	225	Survey	Varied
Mullet (1985)	Unknown	Survey	Varied
Richardson & Stacey (1993)	213	Survey	Metropolitan Regional
Roche et al. (1987)	1193	Survey	Regional Metropolitan
Rosenfeld & Peng (1980)	0	Literature review	
Sevier (1990)	0	Commentary	
Taylor & Olswang (1997)	525	Survey	Research

Diversity of student body (Including race, gender and disabilities)			
<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Webb & Allen (1994)	1499	Survey Graduate	Varied
Widdows & Hilton (1989)	1600	Survey	Metropolitan Regional

B.1.6 Academic staff of the institution

Academic staff is seen as instrumental in the decision to attend university. The literature has focussed on the quality of the staff.

Quality of academic staff			
<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Boyer (1986)	0	Research commentary	Varied
Brennan & Marriott (1996)	735	Survey	Research Metropolitan
Brown (1991)	398	Survey	Regional
Bruwer (1996)	922	Survey	Metropolitan
Carnegie Foundation for the Advancement of Teaching (1986)	1000	Survey	Varied
Chapman (1993)	55,276	Meta-analysis	Varied
Coccarri & Javalgi (1995)	1534	Survey	Metropolitan Regional
Dehne (1993)	4000	Survey	Research Metropolitan Regional Specialist
Discenza, Ferguson & Wisner (1985)	500	Survey Factor analysis	Metropolitan Regional
Dolinsky & Quazi (1994)	134	Survey	Metropolitan
Dwyer (1993)	0	Commentary	Varied
Edgett & Cullen (1992)	581	Survey	Metropolitan
Jonas (1992)	Unknown	Research Commentary	Regional Specialist
Kleemann & Richardson (1985)	Unknown	Survey Factor analysis	Research Metropolitan Regional
Maguire & Lay (1981)	2500	Survey	Metropolitan
Mullet (1985)	Unknown	Survey	Varied
Rice (1987)	1513	Survey	Regional College)
Richardson & Stacey (1993)	213	Survey	Metropolitan Regional
Rosenfeld & Peng (1980)	0	Literature review	
Sanders (1990)	1592	Survey	Metropolitan Regional
Sanders & Peretto (1993)	0	Commentary	Varied
Walters (1994)	Unknown	Survey	Metropolitan Regional
Widdows & Hilton (1989)	1600	Survey	Metropolitan Regional
Wing & Rowse (1986)	0	Modeling	Varied
Yavas & Yaprak (1991)	152	Survey	Regional Metropolitan

B.2 Costs associated with attendance

The costs associated with attendance at an institution are paramount in the USA where the cost of educating a child at university level can be more than the cost of buying a house (in

some areas). Therefore, there are many authors citing costs as a primary decision-making criterion.

B.2.1 Costs associated with attendance and availability of financial aid, scholarships

Costs associated with attendance and availability of financial aid, scholarships			
<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Abbott - Chapman, Hughes & Wyld (1992)		Survey	Regional
Bond & Woodall (1994)	0	Commentary	
Boyer (1986)	0	Research commentary	Varied
Brennan & Marriott (1996)	735	Survey	Research Metropolitan
Brown (1991)	398	Survey	Regional
Brown (1996)	0	Commentary	International
Bruwer (1996)	922	Survey	Metropolitan
Buckley et al. (1996)	194	Survey Structural modeling	Regional
Carnegie Foundation for the Advancement of Teaching (1986)	1000	Survey	Varied
Chapman (1981)	0	Conceptual review)	Literature Varied
Chapman (1984)	0	Conceptual argument	Varied
Chapman (1993)	55,276	Meta-analysis	Varied
Coccarri & Javalgi (1995)	1534	Survey	Metropolitan Regional
Cook et al. (1977)	70	Survey Multidimensional scaling	Varied Regional
Cook & Zallocco (1983)	241	Survey	Regional Metropolitan
Dehne (1993)	4000	Survey	Research Metropolitan Regional Specialist
Dehne (1995)	0	Commentary	Varied
Dembowski (1980)	1352	Modelling information	admission Metropolitan
Department of Vocational Education and Training (1997)	1204	Survey Frequencies	Regional College of TAFE
Discenza et al. (1985)	500	Survey Factor analysis	Metropolitan Regional
Dolinsky & Quazi (1994)	134	Survey	Metropolitan
Edgett & Cullen (1992)	581	Survey	Metropolitan
Elam, Johnson & Rosenbaum (1997)	1243	Graduate surveys	Regional Metropolitan
Esteban & Apel (1992)	0	Content analysis of written materials	Varied
Fooks (1995)	0	Commentary	Regional College)
Grace (1989)	500	Survey	Regional Specialist
Harris (1994)	0	Commentary	Metropolitan Regional
Hollenbeck (1988)	3330	Survey	Varied
Jonas (1992)	Unknown	Research Commentary	Regional Specialist
Kellaris & Kellaris (1988)	188	Survey	Specialist
King et al. (1986)	150	Survey	Regional
Kleemann & Richardson (1985)	Unknown	Survey Factor analysis	Research Metropolitan

Costs associated with attendance and availability of financial aid, scholarships

<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
			Regional
Korb (1990)	1292	Survey	Regional College)
LeClaire (1987)	144	Depth Interviews	Metropolitan
Litten (1982)	0	Conceptual literature review	Varied
Little et al. (1997)	467	Telephone survey	Metropolitan
Maguire & Lay (1981)	2500	Survey	Metropolitan
Marshall & Delman (1984)	829	Survey	Regional College
		Factor analysis	
Martin (1996)	774	Survey	Regional university
Mullet (1985)	Unknown	Survey	Varied
Murphy (1981)	186	Survey	
Punj & Staelin (1978)	177	Survey	Research
Rice (1987)	1513	Survey	Regional College)
Richardson & Stacey (1993)	213	Survey	Metropolitan Regional
Roche et al. (1987)	1193	Survey	Regional Metropolitan
Rosenfeld & Peng (1980)	0	Literature review	
Rudd (1984)	0	Literature review	Varied
Sanders (1990)	1592	Survey	Metropolitan Regional
Sanders & Peretto (1993)	0	Commentary /Review	Varied
Sekely & Yates (1991)	1574	Survey	Regional
Sevier (1990)	0	Commentary	
Sevier (1994)	0	Commentary	
Stanley & Reynolds (1994)	2053	Survey	Varied
Straumanis (1987)	119	Survey	Metropolitan
Walters (1994)	Unknown	Survey	Metropolitan Regional
Webb & Allen (1994)	1499	Survey Graduate	Varied
Webb et al. (1996)	222	Survey	Research
			Metropolitan
Weiler (1989)	1009+239	Survey	Varied
Whiddon (1995)	0	Commentary	Metropolitan
			Research
Widdows & Hilton (1989)	1600	Survey	Metropolitan Regional
Wing & Rowse (1986)	0	Modelling	Varied
Witthuhn (1997)	0	Commentary	Varied
Yavas & Shemwell(1996)	58	Survey	Research
		Correspondence analysis	Metropolitan
			Regional
			Specialist

B.2.2 Opportunities for employment during year

<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Bruwer (1996)	922	Survey	Metropolitan
Dwyer (1993)	0	Commentary	Varied
Mullet (1985)	Unknown	Survey	Varied
Punj & Staelin (1978)	177	Survey	Research
Richardson & Stacey (1993)	213	Survey	Metropolitan Regional
Widdows & Hilton (1989)	1600	Survey	Metropolitan Regional
Withuhn (1997)	0	Commentary	Varied

B.3 Amenities offered and processes of offering the institutional product

The amenities, services and processes of making the offering available are different to the core product (Section B1). They are considered additional to the core offering. It is argued that students will use the core product to limit the choices in the evoked set. Once they have limited the choices they will consider a fewer number of institutions using the criteria presented in this section.

B.3.1 Offering related issues (in support of the academic programs)

The following issues relate to how the institution chooses to offer their core product.

B.3.1.1 Variety of courses and/or Specialty of courses

<i>Authors</i>	Variety and or specialty of courses <i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Brown (1996)	0	Commentary	International
Bruwer (1996)	922	Survey	Metropolitan
Chapman (1981)	0	Conceptual review)	Literature Varied
Chapman (1993)	55,276	Meta-analysis	Varied
Coccarri & Javalgi (1995)	1534	Survey	Metropolitan Regional
Cook et al. (1977)	70	Survey	Varied Regional
Cook & Zallocco (1983)	241	Survey	Regional Metropolitan
Dehne (1993)	4000	Survey	Research Metropolitan Regional Specialist
Dehne (1995)	0	Commentary	Varied
Dembowski (1980)	1352	Modelling information	admission Metropolitan
Department of Vocational Education and Training (1997)	1204	Survey	Regional College of TAFE
Discenza et al. (1985)	500	Survey	Metropolitan Regional
Dolinsky & Quazi (1994)	134	Survey	Factor analysis Metropolitan

<i>Authors</i>	Variety and or specialty of courses		<i>Type of institution</i>
	<i>Number of Students</i>	<i>Type of study</i>	
Edgett & Cullen (1992)	581	Survey	Metropolitan
Jonas (1992)	Unknown	Research Commentary	Regional Specialist
Kellaris & Kellaris (1988)	188	Survey	Specialist
King Kobayashi & Bigler (1986)	150	Survey	Regional
Korb (1990)	1292	Survey	Regional College)
LeClaire (1987)	144	Depth Interviews	Metropolitan
Maguire & Lay (1981)	2500	Survey	Metropolitan
Marshall & Delman (1984)	829	Survey	Regional
		Factor analysis	
Mullet (1985)	Unknown	Survey	Varied
Paulsen (1990)	Unknown	Modelling enrollment from 64 institutions	Varied
Rice (1987)	1513	Survey	Regional College)
Roche et al. (1987)	1193	Survey	Regional Metropolitan
Rosenfeld & Peng (1980)	0	Literature review	
Sanders (1990)	1592	Survey	Metropolitan Regional
Sekely & Yates (1991)	1574	Survey	Regional
Sevier (1990)	0	Commentary	
Sevier (1994)	0	Commentary	
Stanley & Reynolds (1994)	2053	Survey	Varied
Stout & Channell (1987)	Unknown	Research commentary	Regional Metropolitan
Straumanis (1987)	119	Survey	Metropolitan
Webb & Allen (1994)	1499	Survey Graduate	Varied
Weiler (1989)	1009+239	Survey	Varied
Whiddon (1995)	0	Commentary	Metropolitan
			Research
Widdows & Hilton (1989)	1600	Survey	Metropolitan Regional
Wing & Rowse (1986)	0	Modelling	Varied
Witthuhn (1997)	0	Commentary	Varied

B.3.1.2 Emphasis on undergraduate or graduate teaching

<i>Authors</i>	Emphasis on undergraduate or graduate teaching		<i>Type of institution</i>
	<i>Number of Students</i>	<i>Type of study</i>	
Chapman (1993)	55,276	Meta-analysis	Varied
Coccarri & Javalgi (1995)	1534	Survey	Metropolitan Regional
Dehne (1993)	4000	Survey	Research
			Metropolitan
			Regional
			Specialist
Department of Vocational Education and Training (1997)	1204	Survey	Regional College of TAFE
		Frequencies	
Kleemann & Richardson (1985)	Unknown	Survey	Research
		Factor analysis	Metropolitan
			Regional
Maguire & Lay (1981)	2500	Survey	Metropolitan
The Australian (1998)	0	Commentary	Varied
Widdows & Hilton (1989)	1600	Survey	Metropolitan Regional

B.3.1.3 Size of institution Number of students

Size of institution and number of students
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<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Brennan & Marriott (1996)	735	Survey	Research Metropolitan
Cook et al. (1977)	70	Survey Multidimensional scaling	Varied Regional
Cook & Zallocco (1983)	241	Survey	Regional Metropolitan
Dehne (1995)	0	Commentary	Varied
Discenza et al. (1985)	500	Survey Factor analysis	Metropolitan Regional
Edgett & Cullen (1992)	581	Survey	Metropolitan
Esteban & Apel (1992)	0	Content analysis of written materials	Varied
Grace (1989)	500	Survey	Regional Specialist
Harris (1994)	0	Commentary	Metropolitan Regional
Jonas (1992)	Unknown	Research Commentary	Regional Specialist
Kleemann & Richardson (1985)	Unknown	Survey Factor analysis	Research Metropolitan Regional
LeClaire (1987)	144	Depth Interviews	Metropolitan
Maguire & Lay (1981)	2500	Survey	Metropolitan
Martin (1996)	774	Survey	Regional university
Murphy (1981)	186	Survey	
Punj & Staelin (1978)	177	Survey	Research
Richardson & Stacey (1993)	213	Survey	Metropolitan Regional
Roche et al. (1987)	1193	Survey	Regional Metropolitan
Rudd (1984)	0	Literature review	Varied
Sekely & Yates (1991)	1574	Survey	Regional
Walters (1994)	Unknown	Survey	Metropolitan Regional
Whiddon (1995)	0	Commentary	Metropolitan Research
Widdows & Hilton (1989)	1600	Survey	Metropolitan Regional
Wing & Rowse (1986)	0	Modelling	Varied

B.3.1.4 Access to academic staff and staff student ratios

Access to academic staff and staff student ratios			
<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Chapman (1993)	55,276	Meta-analysis	Varied
Coccarri & Javalgi (1995)	1534	Survey	Metropolitan Regional
Cook et al. (1977)	70	Survey Multidimensional scaling	Varied Regional
Cook & Zallocco (1983)	241	Survey	Regional Metropolitan
Dehne (1993)	4000	Survey	Research Metropolitan Regional Specialist
Dehne (1995)	0	Commentary	Varied
Dembowski (1980)	1352	Modelling admission information	Metropolitan
Discenza et al. (1985)	500	Survey Factor analysis	Metropolitan Regional
Dwyer (1993)	0	Commentary	Varied

Access to academic staff and staff student ratios

<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Edgett & Cullen (1992)	581	Survey	Metropolitan
Esteban & Apel (1992)	0	Content analysis of written materials	Varied
Jonas (1992)	Unknown	Research Commentary	Regional Specialist
Richardson & Stacey (1993)	213	Survey	Metropolitan Regional
Roche et al. (1987)	1193	Survey	Regional Metropolitan
Sanders (1990)	1592	Survey	Metropolitan Regional
Sekely & Yates (1991)	1574	Survey	Regional
Sevier (1990)	0	Commentary	
Straumanis (1987)	119	Survey	Metropolitan
The Australian (1999)	0	Commentary	Varied
Webb & Allen (1994)	1499	Survey Graduate	Varied
Widdows & Hilton (1989)	1600	Survey	Metropolitan Regional
Yavas & Shemwell(1996)	58	Survey	Research
		Correspondence analysis	Metropolitan
			Regional
			Specialist

B.3.1.5 Educational facilities: Inc. Classrooms, library, computers, buildings, classrooms

Educational facilities: Inc. Classrooms, library, computers, buildings, classrooms

<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Brennan & Marriott (1996)	735	Survey	Research Metropolitan
Brown (1991)	398	Survey	Regional
Carnegie Foundation for the Advancement of Teaching (1986)	1000	Survey	Varied
Coccarri & Javalgi (1995)	1534	Survey	Metropolitan Regional
Cook et al. (1977)	70	Survey	Varied Regional
		Multidimensional scaling	
Cook & Zallocco (1983)	241	Survey	Regional Metropolitan
Dehne (1993)	4000	Survey	Research Metropolitan Regional Specialist
Dehne (1995)	0	Commentary	Varied
Dolinsky & Quazi (1994)	134	Survey	Metropolitan
Edgett & Cullen (1992)	581	Survey	Metropolitan
Fooks (1995)	0	Commentary	Regional College)
Harris (1994)	0	Commentary	Metropolitan Regional
James et al. (1999)	934	Survey	Varied
		Depth interviews	
Jonas (1992)	Unknown	Research Commentary	Regional Specialist
Kleemann & Richardson (1985)	Unknown	Survey	Research
		Factor analysis	Metropolitan
			Regional
Little et al. (1997)	467	Telephone survey	Metropolitan
Martin (1996)	774	Survey	Regional university
Miller et al. (1991)	225	Survey	Varied
Rice (1987)	1513	Survey	Regional College)
Richardson & Stacey (1993)	213	Survey	Metropolitan Regional

Educational facilities: Inc. Classrooms, library, computers, buildings, classrooms			
<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Sekely & Yates (1991)	1574	Survey	Regional
Sevier (1990)	0	Commentary	Varied
Webb (1993)	654	Survey	Metropolitan
Webb & Allen (1994)	1499	Survey Graduate	Varied
Webb et al. (1996)	222	Survey	Research Metropolitan
Wing & Rowse (1986)	0	Modelling	Varied
Winzar & Morley (1994)	95	Survey Factor analysis	Research Metropolitan Metropolitan / regional

B.3.1.6 Extra (Co) curricular activities

Extra (Co) curricular activities			
<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Brennan & Marriott (1996)	735	Survey	Research Metropolitan
Brown (1991)	398	Survey	Regional
Buckley et al. (1996)	194	Survey Structural modelling	Regional
Carnegie Foundation for the Advancement of Teaching (1986)	1000	Survey	Varied
Chapman (1993)	55,276	Meta-analysis	Varied
Dehne (1995)	0	Commentary	Varied
Discenza et al. (1985)	500	Survey Factor analysis	Metropolitan Regional
Dolinsky & Quazi (1994)	134	Survey	Metropolitan
Esteban & Apel (1992)	0	Content analysis of written materials	Varied
Jonas (1992)	Unknown	Research Commentary	Regional Specialist
Kellaris & Kellaris (1988)	188	Survey	Specialist
Wiese (1994)	344	Survey	Regional
Witthuhn (1997)	0	Commentary	Varied

B.3.1.7 Availability of accelerated learning (Flexibility)

Availability of accelerated learning (Flexibility)			
<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Ashar & Lane (1996)	15	Focus groups	Metropolitan
Ashley (1996)	6	Interviews	Research
Buckley et al. (1996)	194	Survey Structural modeling	Regional
Maguire & Lay (1981)	2500	Survey	Metropolitan
Richardson & Stacey (1993)	213	Survey	Metropolitan Regional
Roche et al. (1987)	1193	Survey	Regional Metropolitan
Webb & Allen (1994)	1499	Survey Graduate	Varied
Widdows & Hilton (1989)	1600	Survey	Metropolitan Regional
Witthuhn (1997)	0	Commentary	Varied

B.3.1.8 Availability of part time study options (Flexibility)

<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Ashar & Lane (1996)	15	Focus groups	Metropolitan
Buckley et al. (1996)	194	Survey Structural modeling	Regional
Coccarri & Javalgi (1995)	1534	Survey	Metropolitan Regional
James et al. (1999)	934	Survey Depth interviews	Varied
Rice (1987)	1513	Survey	Regional College)
Roche et al. (1987)	1193	Survey	Regional Metropolitan
Sanders & Perfetto (1993)	0	Commentary	Varied
Webb & Allen (1994)	1499	Survey Graduate	Varied

B.3.1.9 Availability of external study options (Flexibility)

<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Buckley et al. (1996)	194	Survey Structural modeling	Regional
Byrne & Dimitriou (1995)	127	Interviews	Regional College
Jakupec & McTaggart (1997).	0	Commentary	Regional college
James et al. (1999)	934	Survey Depth interviews	Varied

B.3.1.10 Ability to transfer credits (Flexibility)

<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Ashar & Lane (1996)	15	Focus groups	Metropolitan
Ashley (1996)	6	Interviews	Research
Byrne & Dimitriou (1995)	127	Interviews	Regional College
Korb (1990)	1292	Survey	Regional College)
Marshall & Delman (1984)	829	Survey Factor analysis	Regional
Webb & Allen (1994)	1499	Survey Graduate	Varied
Witthuhn (1997)	0	Commentary	Varied

B.3.2 Cultural and social issues

The following citations relate to criteria that enhance the students' social or cultural participation in the university And potentially society).

B.3.2.1 Athletic program

<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
		University athletic programs	
Brennan & Marriott (1996)	735	Survey	Research Metropolitan
Brown (1991)	398	Survey	Regional
Bruwer (1996)	922	Survey	Metropolitan
Chapman (1993)	55,276	Meta-analysis	Varied
Coccarri & Javalgi (1995)	1534	Survey	Metropolitan Regional

University athletic programs			
<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Cook et al. (1977)	70	Survey Multidimensional scaling	Varied Regional
Cook & Zallocco (1983)	241	Survey	Regional Metropolitan
Discenza et al. (1985)	500	Survey Factor analysis	Metropolitan Regional
Dolinsky & Quazi (1994)	134	Survey	Metropolitan
Edgett & Cullen (1992)	581	Survey	Metropolitan
James et al. (1999)	934	Survey Depth interviews	Varied
Jonas (1992)	Unknown	Research Commentary	Regional Specialist
Kleemann & Richardson (1985)	Unknown	Survey Factor analysis	Research Metropolitan Regional
Maguire & Lay (1981)	2500	Survey	Metropolitan
Marshall & Delman (1984)	829	Survey Factor analysis	Regional College
Mullet (1985)	Unknown	Survey	Varied
Widdows & Hilton (1989)	1600	Survey	Metropolitan Regional
Yavas & Shemwell (1996)	58	Survey Correspondence analysis	Research Metropolitan Regional Specialist

B.3.2.2 Prominence of athletic program

<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Chapman (1993)	55,276	Meta-analysis	Varied
Cook et al. (1977)	70	Survey Multidimensional scaling	Varied Regional
Cook & Zallocco (1983)	241	Survey	Regional Metropolitan
Edgett & Cullen (1992)	581	Survey	Metropolitan
Mullet (1985)	Unknown	Survey	Varied

B.3.2.3 Religious activities

Religious activities			
<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Chapman (1993)	55,276	Meta-analysis	Varied
Jonas (1992)	Unknown	Research Commentary	Regional Specialist
Kellaris & Kellaris (1988)	188	Survey	Specialist
Mullet (1985)	Unknown	Survey	Varied
Roche et al. (1987)	1193	Survey	Regional Metropolitan
Rosenfeld & Peng (1980)	0	Literature review	
Widdows & Hilton (1989)	1600	Survey	Metropolitan Regional
Wiese (1994)	344	Survey	Regional

B.3.2.4 Social life/quality, including regulation of social activities

Social life/quality, including regulation of social activities			
<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>

Social life/quality, including regulation of social activities			
<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Boyer (1986)	0	Research commentary	Varied
Brown (1991)	398	Survey	Regional
Brown (1996)	0	Commentary	International
Bruwer (1996)	922	Survey	Metropolitan
Buckley et al. (1996)	194	Survey	Regional
		Structural modeling	
Carnegie Foundation for the Advancement of Teaching (1986)	1000	Survey	Varied
Chapman (1993)	55,276	Meta-analysis	Varied
Cook et al. (1977)	70	Survey	Varied Regional
		Multidimensional scaling	
Cook & Zallocco (1983)	241	Survey	Regional Metropolitan
Dehne (1993)	4000	Survey	Research
			Metropolitan
			Regional
			Specialist
Dehne (1995)	0	Commentary	Varied
Department of Vocational Education and Training (1997)	1204	Survey	Regional College of TAFE
		Frequencies	
Disenza et al. (1985)	500	Survey	Metropolitan Regional
		Factor analysis	
Dolinsky & Quazi (1994)	134	Survey	Metropolitan
Dwyer (1993)	0	Commentary	Varied
Edgett & Cullen (1992)	581	Survey	Metropolitan
Grace (1989)	500	Survey	Regional Specialist
James et al. (1999)	934	Survey	Varied
		Depth interviews	
Jonas (1992)	Unknown	Research Commentary	Regional Specialist
Kleemann & Richardson (1985)	Unknown	Survey	Research
		Factor analysis	Metropolitan
			Regional
Litten (1982)	0	Conceptual review	Varied
		literature	
Maguire & Lay (1981)	2500	Survey	Metropolitan
Marshall & Delman (1984)	829	Survey	Regional College
		Factor analysis	
Martin (1996)	774	Survey	Regional university
Mullet (1985)	Unknown	Survey	Varied
Rosenfeld & Peng (1980)	0	Literature review	
Sekely & Yates (1991)	1574	Survey	Regional
Sevier (1990)	0	Commentary	
Widdows & Hilton (1989)	1600	Survey	Metropolitan Regional
Wing & Rowse (1986)	0	Modelling	Varied
Winzar & Morley (1994)	95	Survey	Research
		Factor analysis	Metropolitan
			Metropolitan / regional

B.3.3 Personal and utilitarian issues

Personal and utilitarian criteria are those criteria that a student might seek for individual reasons. They are not related to academic offerings. However, they will improve the quality of life for an individual within the university environment. The following papers have found personal and utilitarian issues important to prospective students.

B.3.3.1 Non academic facilities (Eating, leisure, health, parking, shopping, disability facilities)

Non academic facilities (Eating, leisure, health, parking, shopping, disability facilities)			
<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Brennan & Marriott (1996)	735	Survey	Research Metropolitan
Brown (1991)	398	Survey	Regional
Bruwer (1996)	922	Survey	Metropolitan
Coccarri & Javalgi (1995)	1534	Survey	Metropolitan Regional
Cook & Zallocco (1983)	241	Survey	Regional Metropolitan
Dehne (1993)	4000	Survey	Research Metropolitan Regional Specialist
Dehne (1995)	0	Commentary	Varied
Discenza et al. (1985)	500	Survey Factor analysis	Metropolitan Regional
Dolinsky & Quazi (1994)	134	Survey	Metropolitan
Edgett & Cullen (1992)	581	Survey	Metropolitan
Fooks (1995)	0	Commentary	Regional College)
Jonas (1992)	Unknown	Research Commentary	Regional Specialist
Kleemann & Richardson (1985)	Unknown	Survey Factor analysis	Research Metropolitan Regional
Litten (1982)	0	Conceptual review	literature Varied
Roche et al. (1987)	1193	Survey	Regional Metropolitan
Sanders & Peretto (1993)	0	Commentary	Varied
Sevier (1990)	0	Commentary	
Webb et al. (1996)	222	Survey	Research Metropolitan

B.3.3.2 On campus housing or availability of accommodation

On campus housing or availability of accommodation			
<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Abbott - Chapman et al.(1992)		Survey	Regional
Boyer(1986)	0	Research commentary	Varied
Brown (1996)	0	Commentary	International
Carnegie Foundation for the Advancement of Teaching (1986)	1000	Survey	Varied
Chapman (1993)	55,276	Meta-analysis	Varied
Dehne (1995)	0	Commentary	Varied
Discenza et al. (1985)	500	Survey Factor analysis	Metropolitan Regional
Dolinsky & Quazi (1994)	134	Survey	Metropolitan
Edgett & Cullen (1992)	581	Survey	Metropolitan
Fooks (1995)	0	Commentary	Regional College)
James et al. (1999)	934	Survey Depth interviews	Varied
Jonas (1992)	Unknown	Research Commentary	Regional Specialist
Martin (1996)	774	Survey	Regional university
Mullet (1985)	Unknown	Survey	Varied
Roche et al. (1987)	1193	Survey	Regional Metropolitan
Sanders (1990)	1592	Survey	Metropolitan Regional
Sekely & Yates (1991)	1574	Survey	Regional
Sevier (1990)	0	Commentary	
Stanley & Reynolds (1994)	2053	Survey	Varied
Widdows & Hilton (1989)	1600	Survey	Metropolitan Regional
Withuhn (1997)	0	Commentary	Varied

B.3.3.3 Personal safety

<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Coccarri & Javalgi (1995)	1534	Survey	Metropolitan Regional
Dolinsky & Quazi (1994)	134	Survey	Metropolitan
Edgett & Cullen (1992)	581	Survey	Metropolitan
Harris (1994)	0	Commentary	Metropolitan Regional
Kellaris & Kellaris (1988)	188	Survey	Specialist
Mullet (1985)	Unknown	Survey	Varied
Sevier (1990)	0	Commentary	

B.3.4 Achievement related issues

Achievement related criteria relate to those factors that will assist a student to achieve their personal and academic goals. The following criteria have been found to be consequential in the decision to attend a particular institution.

B.3.4.1 Contact with students

<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Cook & Zallocco (1983)	241	Survey	Regional Metropolitan
Widdows & Hilton (1989)	1600	Survey	Metropolitan Regional

B.3.4.2 Opportunities for employment after graduation and career services

Opportunities for employment after graduation and career services			
<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Barondess & Glaser (1993)	1003	Survey	Research Metropolitan
Brown (1991)	398	Survey	Regional
Bruwer (1996)	922	Survey	Metropolitan
Coccarri & Javalgi (1995)	1534	Survey	Metropolitan Regional
Dehne (1993)	4000	Survey	Research Metropolitan Regional Specialist
Dehne (1995)	0	Commentary	Varied
Dwyer (1993)	0	Commentary	Varied
Elam et al. (1997)	1243	Graduate surveys	Regional Metropolitan
Esteban & Apel (1992)	0	Content analysis of written materials	Varied
Fooks (1995)	0	Commentary	Regional College)
Grace (1989)	500	Survey	Regional Specialist
Hollenbeck (1988)	3330	Survey	Varied
Houston (1984)	0	Literature review / commentary	Specialist
James et al. (1999)	934	Survey Depth interviews	Varied
Jonas (1992)	Unknown	Research Commentary	Regional Specialist
Kleemann & Richardson (1985)	Unknown	Survey Factor analysis	Research Metropolitan Regional
Korb (1990)	1292	Survey	Regional College)
Litten (1982)	0	Conceptual literature review	Varied
Little et al. (1997)	467	Telephone survey	Metropolitan
Marginson (1995)	0	Commentary	Varied
Martin (1996)	774	Survey	Regional university
Mullet (1985)	Unknown	Survey	Varied
Peters (1994)	3305	Survey	Regional College
Powlette & Young (1996)	1047	Survey	Varied
Richardson & Stacey (1993)	213	Survey	Metropolitan Regional
Rosenfeld & Peng (1980)	0	Literature review	
Rudd (1984)	0	Literature review	Varied
Sanders (1990)	1592	Survey	Metropolitan Regional
Sanders & Peretto (1993)	0	Commentary	Varied
Sevier (1990)	0	Commentary	
Stevens, McConkey, Loudon & Warren (1993)	162	Survey	Metropolitan Regional
McGinty Stodt & Wagner (1985)	1038	Survey	Metropolitan
Straumanis (1987)	119	Survey	Metropolitan
The Australian (1998)	0	Commentary	Varied
The Australian (1999)	0	Commentary	Varied

Opportunities for employment after graduation and career services

<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Webb (1993)	654	Survey	Metropolitan
Webb & Allen (1994)	1499	Survey Graduate	Varied
Webb et al. (1996)	222	Survey	Research Metropolitan
Wiese (1994)	344	Survey	Regional
Winzar & Morley (1994)	95	Survey Factor analysis	Research Metropolitan Metropolitan / regional
Yavas & Yaprak (1991)	152	Survey	Regional Metropolitan
Yavas & Shemwell(1996)	58	Survey Correspondence analysis	Research Metropolitan Regional Specialist

B.3.4.3 Academic advising and assistance with study program

<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Abbott - Chapman et al. (1992)	Unknown	Survey	Regional
Ashar & Lane (1996)	15	Focus groups	Metropolitan
Brown (1991)	398	Survey	Regional
Coccarri & Javalgi (1995)	1534	Survey	Metropolitan Regional
Dehne (1993)	4000	Survey	Research Metropolitan Regional Specialist
Dolinsky & Quazi (1994)	134	Survey	Metropolitan
Dwyer (1993)	0	Commentary	Varied
James et al. (1999)	934	Survey Depth interviews	Varied
Kleemann & Richardson (1985)	Unknown	Survey Factor analysis	Research Metropolitan Regional
Martin (1996)	774	Survey	Regional university
Mullet (1985)	Unknown	Survey	Varied
Richardson & Stacey (1993)	213	Survey	Metropolitan Regional
Widdows & Hilton (1989)	1600	Survey	Metropolitan Regional
Yavas & Shemwell (1996)	58	Survey Correspondence analysis	Research Metropolitan Regional Specialist

B.4 Aspects of the institution relating to location

Locational aspects of the institution are considered in this section to be related the ‘Place’ dimension of the theoretical Four P’s marketing mix. Product, Price, Promotion, Place). Thus, location incorporates the physical location as well as any physical facilities that may enhance the core product.

B.4.1 Location and/or distance from home (either close to or away from)

Location and/or distance from home (Either close to or away from)			
<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Brennan & Marriott (1996)	735	Survey	Research Metropolitan
Brown (1991)	398	Survey	Regional
Bruwer (1996)	922	Survey	Metropolitan
Buckley et al. (1996)	194	Survey	Regional
Chapman (1981)	0	Structural modeling Conceptual review)	Literature Varied
Chapman (1984)	0	Conceptual argument	Varied
Chapman (1993)	55,276	Meta-analysis	Varied
Coccarl & Javalgi (1995)	1534	Survey	Metropolitan Regional
Cook et al. (1977)	70	Survey	Varied Regional
Cook & Zallocco (1983)	241	Survey	Regional Metropolitan
Dembowski (1980)	1352	Modelling admission information	Metropolitan
Discenza et al. (1985)	500	Survey	Metropolitan Regional
Edgett & Cullen (1992)	581	Survey	Metropolitan
Elam et al. (1997)	1243	Graduate surveys	Regional Metropolitan
Esteban & Apel (1992)	0	Content analysis of written materials	Varied
Grace (1989)	500	Survey	Regional Specialist
Harris (1994)	0	Commentary	Metropolitan Regional
Hollenbeck (1988)	3330	Survey	Varied
James et al. (1999)	934	Survey	Varied
Jonas (1992)	Unknown	Depth interviews	Regional Specialist
Kellaris & Kellaris (1988)	188	Research Commentary	Specialist
King et al. (1986)	150	Survey	Regional
Korb (1990)	1292	Survey	Regional College)
LeClaire (1987)	144	Depth Interviews	Metropolitan
Litten (1982)	0	Conceptual review	literature Varied
Maguire & Lay (1981)	2500	Survey	Metropolitan
Martin (1996)	774	Survey	Regional university
Mullet (1985)	Unknown	Survey	Varied
Murphy (1981)	186	Survey	
Punj & Staelin (1978)	177	Survey	Research
Rice (1987)	1513	Survey	Regional College)
Roche et al. (1987)	1193	Survey	Regional Metropolitan
Rosenfeld & Peng (1980)	0	Literature review	
Sanders & Peretto (1993)	0	Commentary	Varied
Sekely & Yates (1991)	1574	Survey	Regional
Sevier (1990)	0	Commentary	
Sevier (1994)	0	Commentary	
Stanley & Reynolds (1994)	2053	Survey	Varied
Straumanis (1987)	119	Survey	Metropolitan
Webb (1993)	654	Survey	Metropolitan
Webb & Allen (1994)	1499	Survey Graduate	Varied

Location and/or distance from home (Either close to or away from)			
<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Webb et al. (1996)	222	Survey	Research Metropolitan
Weiler (1989)	1009+239	Survey	Varied
Whiddon (1995)	0	Commentary	Metropolitan Research
Widdows & Hilton (1989)	1600	Survey	Metropolitan Regional
Wing & Rowse (1986)	0	Modelling	Varied
Winzar & Morley (1994)	95	Survey Factor analysis	Research Metropolitan Metropolitan / regional
Yavas & Shemwell (1996)	58	Survey Correspondence analysis	Research Metropolitan Regional Specialist

B.4.2 Surroundings (including the opportunity for off campus activities)

Surroundings (Including the opportunity for off campus activities)			
<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Brown (1991)	398	Survey	Regional
Brown (1996)	0	Commentary	International
Chapman (1993)	55,276	Meta-analysis	Varied
Cook et al. (1977)	70	Survey Multidimensional scaling	Varied Regional
Cook & Zallocco (1983)	241	Survey	Regional Metropolitan
Edgett & Cullen (1992)	581	Survey	Metropolitan
Jonas (1992)	Unknown	Research Commentary	Regional Specialist
Kellaris & Kellaris (1988)	188	Survey	Specialist
Marshall & Delman (1984)	829	Survey Factor analysis	Regional
Roche et al. (1987)	1193	Survey	Regional Metropolitan
Sekely & Yates (1991)	1574	Survey	Regional
Webb et al. (1996)	222	Survey	Research Metropolitan
Wing & Rowse (1986)	0	Modelling	Varied

B.4.3 Off campus activities

<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Chapman (1993)	55,276	Meta-analysis	Varied
Dehne (1993)	4000	Survey	Research Metropolitan Regional Specialist

B.4.4 Campus attractiveness

Campus attractiveness			
<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Brennan & Marriott (1996)	735	Survey	Research Metropolitan
Brown (1991)	398	Survey	Regional
Bruwer (1996)	922	Survey	Metropolitan
Chapman (1981)	0	Conceptual review)	Literature Varied
Chapman (1993)	55,276	Meta-analysis	Varied
Dehne (1993)	4000	Survey	Research Metropolitan Regional Specialist
Edgett & Cullen (1992)	581	Survey	Metropolitan
James et al. (1999)	934	Survey Depth interviews	Varied
Jonas (1992)	Unknown	Research Commentary	Regional Specialist
King et al. (1986)	150	Survey	Regional
Litten (1982)	0	Conceptual review	literature Varied
Mullet (1985)	Unknown	Survey	Varied
Roche et al. (1987)	1193	Survey	Regional Metropolitan
Sekely & Yates (1991)	1574	Survey	Regional
Sevier (1990)	0	Commentary	
Stout & Channell (1987)	Unknown	Research commentary	Regional Metropolitan
Webb et al. (1996)	222	Survey	Research Metropolitan
Widdows & Hilton (1989)	1600	Survey	Metropolitan Regional
Wing & Rowse (1986)	0	Modelling	Varied
Yavas & Shemwell(1996)	58	Survey Correspondence analysis	Research Metropolitan Regional Specialist

B.4.5 Ease of transport (to and from Location)

<i>Authors</i>	<i>Number of Students</i>	<i>Type of study</i>	<i>Type of institution</i>
Chapman (1993)	55,276	Meta-analysis	Varied
Dolinsky & Quazi (1994)	134	Survey	Metropolitan
James et al. (1999)	934	Survey Depth interviews	Varied
Roche et al. (1987)	1193	Survey	Regional Metropolitan
Stanley & Reynolds (1994)	2053	Survey	Varied



How people choose a higher education institution

A research project by The University of Melbourne

***conducted by
Linda Brennan
61 3 9905 5539***

Please return the completed survey in the reply paid envelope to:
REPLY PAID NUMBER 55
Monash University
Department of Marketing
Building 11, Menzies
Wellington Road
Clayton, Victoria, 3168
Attn Linda Brennan

This questionnaire is designed to explore the factors that are important to people when they make a decision about the institution that they will attend for post secondary education.

The survey should only be answered if you have enrolled in or changed levels within an institution in the last 12 months (this change might be from one degree program to another). The survey can also be filled out if you are about to change to another institution. The questions should be answered by thinking about the decision to change to the *current* or *new* institution if the change is yet to take place.

Please circle or tick *only* ONE response unless the instruction says you may circle or tick MORE than one.

On completion, please return the questionnaire in the reply paid envelope within 10 days. Your information is strictly confidential. The results will be aggregated and no individual will be able to be identified from the survey. ALL INFORMATION WILL BE STRICTLY CONFIDENTIAL. Your responses will be absolutely confidential within the normal legal limitations of the confidentiality of the information.

If you have any problems or queries about this survey, please call Ms Linda Brennan, 03 99055539 or Dr Richard James, 03 93447627 any time during business hours.

C.1 The way you buy things

C.1.1 Firstly we would like to know about the way you buy products. Please note that 'product' means any services or goods.

Level of agreement 1 = *strongly disagree* 5 = *Strongly agree*

I consult other people to help choose the best product	1	2	3	4	5
If I want to be like someone, I often try to buy the same brands that they buy	1	2	3	4	5
It is important that others like the products and brands that I buy	1	2	3	4	5
To make sure I buy the right product or brand, I often observe what others are buying and using	1	2	3	4	5
I rarely purchase the latest fashion styles until I am sure that my friends approve of them	1	2	3	4	5
I often identify with other people by purchasing the same products or brands they purchase	1	2	3	4	5
If I have little experience with a product, I often ask my friends about the product	1	2	3	4	5
When buying products, I generally purchase those brands that I think others will approve of	1	2	3	4	5
I like to know what brands and products make good impressions on others	1	2	3	4	5
I frequently gather information from friends or family about a product before I buy	1	2	3	4	5
If other people can see me using a product, I often purchase the brand they expect me to buy	1	2	3	4	5
I achieve a sense of belonging by purchasing the products and brands that others purchase	1	2	3	4	5

C.2 Yourself and your attitude to life

C.2.1 These questions explore the type of person you believe yourself to be and the way you view 'life.' There is no 'right' or 'wrong' answer, so you can be honest.

Level of agreement 1 = *strongly disagree* 5 = *Strongly agree*

1	In uncertain times, I usually expect the best	1	2	3	4	5
2	If something can go wrong for me, it will	1	2	3	4	5
3	I'm always optimistic about my future	1	2	3	4	5
4	I hardly ever expect things to go my way	1	2	3	4	5
5	I rarely count on good things happening to me	1	2	3	4	5
6	Overall, I expect more good things to happen to me than bad	1	2	3	4	5
7	I only think as hard as I have to	1	2	3	4	5
8	I like things to do that require little thought once I have learned them	1	2	3	4	5
9	Thinking hard is not my idea of fun	1	2	3	4	5
10	I prefer my life to be full of puzzles I must solve	1	2	3	4	5
11	It's enough for me to get the job done, I do not care how or why it works	1	2	3	4	5
12	Learning new ways to think doesn't excite me very much	1	2	3	4	5
13	Heredity plays the major role in determining one's personality	1	2	3	4	5
14	It is one's experience in life which determines what they are like	1	2	3	4	5
15	I have often found that what is going to happen, will happen	1	2	3	4	5
16	Trusting to fate has never turned out as well for me as making a decision to take a definite course of action	1	2	3	4	5
17	In the case of the well prepared student, there is rarely, if ever, such a thing as an unfair test	1	2	3	4	5
18	Many times exam questions tend to be so unrelated to the course work that studying is really useless	1	2	3	4	5

Level of agreement 1 = strongly disagree 5 =
Strongly agree

19	In the long run people get the respect they deserve in this world	1	2	3	4	5
20	Unfortunately an individual's worth often passes unrecognised no matter how hard they try	1	2	3	4	5
21	Becoming a success is a matter of hard work. Luck has little or nothing to do with it	1	2	3	4	5
22	Getting a good job depends mainly on being in the right place at the right time	1	2	3	4	5
23	I believe that it is important to challenge our beliefs from time to time	1	2	3	4	5
24	If I do not understand something, I find out about it	1	2	3	4	5
25	I like to experiment with new ideas, even if they turn out later to be a waste of time	1	2	3	4	5
26	I enjoy spending time discovering new things	1	2	3	4	5
27	I like to find out why things happen	1	2	3	4	5
28	I often put myself in situations in which I could learn something new.....	1	2	3	4	5
29	I enjoy thinking about ideas that challenge my views of the world	1	2	3	4	5
30	Hard work is something I like to avoid	1	2	3	4	5
31	If I get the most important part of a job done, I don't worry about the little details	1	2	3	4	5
32	I must admit that I often do as little work as I can get away with	1	2	3	4	5
33	If I had enough money, I would not work	1	2	3	4	5
34	The most important thing about a job is the pay	1	2	3	4	5
35	I am basically a lazy person	1	2	3	4	5
36	I would like an important job where people look up to me	1	2	3	4	5
37	I like talking to people who are important	1	2	3	4	5
38	I think I would enjoy having authority over other people	1	2	3	4	5
39	I want to be an important person in the community	1	2	3	4	5
40	If given the chance I would make a good leader of people	1	2	3	4	5
41	I enjoy planning things and deciding what other people should do	1	2	3	4	5
42	I take a positive attitude towards myself	1	2	3	4	5
43	I am a person of worth	1	2	3	4	5
44	I am able to do things as well as others	1	2	3	4	5
45	I am satisfied with myself	1	2	3	4	5

C.3 The institution

C.3.1 Which institutions did you

	C.3.1.1 Collect information from ↓	C.3.1.2 Consider attending ↓	C.3.1.3 Enrol in ↓
Australian Catholic University	1 <input type="checkbox"/>	1 <input type="checkbox"/>	1 <input type="checkbox"/>
The University of Melbourne	2 <input type="checkbox"/>	2 <input type="checkbox"/>	2 <input type="checkbox"/>
Monash University	3 <input type="checkbox"/>	3 <input type="checkbox"/>	3 <input type="checkbox"/>
Deakin University	4 <input type="checkbox"/>	4 <input type="checkbox"/>	4 <input type="checkbox"/>
Latrobe University	5 <input type="checkbox"/>	5 <input type="checkbox"/>	5 <input type="checkbox"/>
Victoria University of Technology	6 <input type="checkbox"/>	6 <input type="checkbox"/>	6 <input type="checkbox"/>
Swinburne University of Technology	7 <input type="checkbox"/>	7 <input type="checkbox"/>	7 <input type="checkbox"/>
RMIT (Royal Melbourne Institute of Technology)	8 <input type="checkbox"/>	8 <input type="checkbox"/>	8 <input type="checkbox"/>
Interstate	9 <input type="checkbox"/>	9 <input type="checkbox"/>	9 <input type="checkbox"/>
International	10 <input type="checkbox"/>	10 <input type="checkbox"/>	10 <input type="checkbox"/>
Other (please specify)	11 <input type="checkbox"/>	11 <input type="checkbox"/>	11 <input type="checkbox"/>

C.3.2 Level

- Undergraduate (Degree)
 Diploma
 Associate Diploma
 Certificate

C.3.3 Campus _____

C.3.4 Field of study (tick two boxes if you are enrolled in a combined course)

- Arts / Humanities / Social Sciences Other _____
 Business / Administration / Economics _____
 Engineering / Surveying / Computer technology _____

C.3.5 Type of entry

- School leaver - year 12 completion tertiary entry ranked score (from any state of Australia)
 Mature age student (Yr 12 not completed or completed more than 2 years ago)
 Transfer from another course or institution
 Other _____

C.3.6 Are you enrolled?

- C.3.6.1 Part time Full time

- C.3.6.2 On campus Off campus

C.3.7 How many campuses does your current institution have? _____

C.3.8 What is the full (official) name of the Faculty (ies) you are enrolled in?

C.3.9 How long is a semester in your university? Weeks _____

C.3.10 Do you know where all the libraries are in your institution?
Yes No

C.3.11 How much time did you take to make the decision to attend your current institution?

Weeks Months Years Many years
Other? _____

C.3.12 Would you have spent more time looking for alternatives if it was available?
Yes No

C.3.13 Did you feel that, in the end, you had to make a decision about the institution quickly?
Yes No

C.3.14 Was there adequate time between getting your results and having to make your final decision? Yes No

C.4 The process of deciding which institution to attend

C.4.1 Please nominate your level of agreement with the following statements about how you went about selecting an institution to attend.

Level of agreement 1 = strongly disagree 5 = Strongly agree

1	I used several ways of evaluating institutions before making my final choice	1	2	3	4	5
2	I did some detailed comparisons of institutions before making my decision	1	2	3	4	5
3	I searched for more information about institutions than what was provided by my current institution	1	2	3	4	5
4	I put a lot of time and effort into my choice of institution	1	2	3	4	5
5	The amount of time you spend comparing institutions is worth the effort	1	2	3	4	5
6	You really have to do research on the institutions in order to find out what is bad about them as well as what is good about them	1	2	3	4	5
7	Visits from institution staff while I was still at school were important in making my choice	1	2	3	4	5
8	I generally found the promotional material provided by institutions to be useless	1	2	3	4	5
9	It is important to go on an institution tour before deciding on an institution	1	2	3	4	5
10	When I compared institutions I relied a lot on the brochures sent by the institution	1	2	3	4	5
11	The opinion that my friends had of the institution was very important to me on making my choice of institution	1	2	3	4	5

12	I relied pretty heavily on the advice of professional counsellors in deciding on which institution to attend	1	2	3	4	5
13	My family members were important influences on my decision to attend the institution	1	2	3	4	5
14	I talked a great deal to my friends and family about the decision before I made my choice	1	2	3	4	5
15	I do not care at all which institution I attend as long as I get a degree	1	2	3	4	5
16	I think institutions are all alike	1	2	3	4	5
17	It does not matter if I make the wrong choice about which institution I attend	1	2	3	4	5
18	I am not concerned about choosing an institution	1	2	3	4	5
19	I chose my current university very carefully	1	2	3	4	5
20	Choosing a university is a very important decision for me	1	2	3	4	5
21	Which university I attend matters to me a lot	1	2	3	4	5
22	I knew where to get information about institutions	1	2	3	4	5
23	I knew exactly which information I needed to make my decision	1	2	3	4	5
24	I did not have time to evaluate all the information provided to me	1	2	3	4	5
25	I looked at only one or two important criteria in making my decision	1	2	3	4	5
26	I knew what was important in selecting the best institution	1	2	3	4	5
27	It is important to consider more than one institution when choosing an institution	1	2	3	4	5
28	Choosing an institution can be a very risky business	1	2	3	4	5
29	Your family might not like you if you choose the wrong institution	1	2	3	4	5
30	You should never choose an institution that you only know a little about	1	2	3	4	5
31	Attending the right institution expresses who I am as a person	1	2	3	4	5
32	Choosing the right institution can help you attain the type of life you strive for	1	2	3	4	5
33	You can really tell about a person by the type of institution they attend	1	2	3	4	5
34	I know a lot about institutions	1	2	3	4	5
35	I have a clear idea about which characteristics are important in choosing an institution	1	2	3	4	5
36	I am very familiar with higher education institutions	1	2	3	4	5
37	I am very knowledgeable about institutions relative to the rest of the population	1	2	3	4	5

C.4.2 If you collected any information from ANY institution(s), which did you find useful? (you may circle MORE than one) (This is called *general information*)

<i>Yes, collected info</i>		<i>Usefulness</i>				
B		<i>1 = not at all useful 5 = very useful</i>				
<input type="checkbox"/>	1 Curriculum and course handbook	1	2	3	4	5
<input type="checkbox"/>	2 General information brochure	1	2	3	4	5
<input type="checkbox"/>	3 Institution mission/policy statement	1	2	3	4	5
<input type="checkbox"/>	4 Map of institution grounds and pictures of facilities	1	2	3	4	5
<input type="checkbox"/>	5 Pictures of students socialising and studying (the atmosphere)	1	2	3	4	5
<input type="checkbox"/>	6 Information about sporting programs and facilities	1	2	3	4	5
<input type="checkbox"/>	7 Information about artistic programs and facilities	1	2	3	4	5
<input type="checkbox"/>	8 Information about overseas study programs	1	2	3	4	5
<input type="checkbox"/>	9 Admissions policies and procedures	1	2	3	4	5
<input type="checkbox"/>	10 Information about social programs and facilities	1	2	3	4	5
<input type="checkbox"/>	11 Information about fees and scholarship information	1	2	3	4	5
<input type="checkbox"/>	12 Records of academic achievements	1	2	3	4	5
<input type="checkbox"/>	13 Information about institution academic research record	1	2	3	4	5
<input type="checkbox"/>	14 Information about individual subjects offered	1	2	3	4	5
<input type="checkbox"/>	15 Information about courses (degrees or diplomas) offered	1	2	3	4	5
<input type="checkbox"/>	16 Institution newsletter/magazines	1	2	3	4	5
<input type="checkbox"/>	17 Boarding facilities	1	2	3	4	5
<input type="checkbox"/>	18 Student welfare programs and facilities	1	2	3	4	5

Yes, collected info

Usefulness 1 = not at all useful 5 = very useful

B

<input type="checkbox"/>	19	Merchandise such as hats, pens and t-shirts	1	2	3	4	5
<input type="checkbox"/>	20	Video of institution	1	2	3	4	5
<input type="checkbox"/>	21	Other _____	1	2	3	4	5

C.4.3 Of the people listed below, WHO DID YOU TALK TO about your current institution before making your decision, and HOW RELIANT WERE YOU ON THEIR OPINION?

Yes, spoke to

↓

Level of reliance 1 = did not rely on 5 = Strongly reliant

<input type="checkbox"/>	1	Friends and neighbours	1	2	3	4	5
<input type="checkbox"/>	2	Students enrolled at the current institution	1	2	3	4	5
<input type="checkbox"/>	3	Students who attend other post secondary institutions	1	2	3	4	5
<input type="checkbox"/>	4	Teachers or staff from the current institution	1	2	3	4	5
<input type="checkbox"/>	5	Teachers or staff from another post secondary institution	1	2	3	4	5
<input type="checkbox"/>	6	Members of an accreditation body (eg the Society of CPAs)	1	2	3	4	5
<input type="checkbox"/>	7	A Government organisation (eg Centrelink)	1	2	3	4	5
<input type="checkbox"/>	8	Careers counsellors, teachers and staff at school	1	2	3	4	5
<input type="checkbox"/>	9	Training and development staff from work	1	2	3	4	5
<input type="checkbox"/>	10	Parents/ brothers and / or sisters	1	2	3	4	5
<input type="checkbox"/>	11	Other family members eg grandparents, uncles and aunts	1	2	3	4	5
<input type="checkbox"/>	12	Others _____	1	2	3	4	5

C.4.4 Where did you collect OTHER (*promotional*) information about institutions?

Promotional information collection

- | | | | | | |
|--------------------------|----|---|--------------------------|----|---|
| <input type="checkbox"/> | 1 | Local newspaper article (not advertising) | <input type="checkbox"/> | 11 | A handbook on institutions such the 'Good Universities Guide' |
| <input type="checkbox"/> | 2 | Advertising | <input type="checkbox"/> | 12 | Advertising in magazines or journals |
| <input type="checkbox"/> | 3 | Signs at or near the institution | <input type="checkbox"/> | 13 | Bus or transport signs |
| <input type="checkbox"/> | 4 | Information provided by professionals | <input type="checkbox"/> | 14 | Contact with an agent |
| <input type="checkbox"/> | 5 | The Internet | <input type="checkbox"/> | 15 | School visits to institutions |
| <input type="checkbox"/> | 6 | Bill boards and signs | <input type="checkbox"/> | 16 | Visits to your school by institutional representatives |
| <input type="checkbox"/> | 7 | Cinema advertising | <input type="checkbox"/> | 17 | Personal visits to the institution for open days or seminars |
| <input type="checkbox"/> | 8 | Large metropolitan newspaper article | <input type="checkbox"/> | 18 | Careers information collected from school or work |
| <input type="checkbox"/> | 9 | Tertiary admission guides | <input type="checkbox"/> | 19 | 'Study Link' CD ROM |
| <input type="checkbox"/> | 10 | Other _____ | | | |

C.4.5 Did you attend an Information Day or Evening at the institution that you currently attend?

Yes No

C.4.5.1 If yes, how helpful did you find it in making your choice?

C.4.6 Did you attend Open Days at any other institutions?

Yes No

C.4.6.1 If YES, how many? _____

C.4.7 Of ALL the types and sources of information you used, which did you find most helpful

		<i>Level of usefulness</i>				
		<i>1 = not at all useful 5 = very useful</i>				
1	Close personal sources such as friends and family	1	2	3	4	5
2	Other personal sources such as teachers or other advisers	1	2	3	4	5
3	Non personal sources such as information provided by the institution	1	2	3	4	5
4	Non personal sources such as "How to choose " guides and newspaper editorials	1	2	3	4	5

C.5 Influences on your decision

C.5.1 This set of questions asks what issues were IMPORTANT to you in choosing the institution you attend. In addition to telling us if it were important or not could you ALSO NOMINATE UP TO FIVE FACTORS which were the MOST important influence on your decision by placing a number in the relevant boxes (on the left side).

		<i>Level of importance</i>				
		<i>1 = not important 5 = very important</i>				
<i>Rank (1-5)</i>						
B						
C.5.1.1	C.5.1.2					
1	<input type="checkbox"/> 1 Fees and costs associated with attending	1	2	3	4	5
2	<input type="checkbox"/> 2 Exemptions for prior learning and credits for subjects studied elsewhere	1	2	3	4	5
3	<input type="checkbox"/> 3 Image or reputation of the institution	1	2	3	4	5
4	<input type="checkbox"/> 4 Size of the campus and the university	1	2	3	4	5
5	<input type="checkbox"/> 5 Location of the university	1	2	3	4	5
6	<input type="checkbox"/> 6 Degree programs offered	1	2	3	4	5
7	<input type="checkbox"/> 7 The difficulty of the academic program of study (it was hard)	1	2	3	4	5
8	<input type="checkbox"/> 8 Educational facilities such as the library, class rooms and computers	1	2	3	4	5
9	<input type="checkbox"/> 9 Campus facilities such as halls, gardens, parking and sports fields	1	2	3	4	5
10	<input type="checkbox"/> 10 Prestige of course of study	1	2	3	4	5
11	<input type="checkbox"/> 11 Prestige of institution teaching staff	1	2	3	4	5
12	<input type="checkbox"/> 12 Opportunities to meet people and socialise	1	2	3	4	5
13	<input type="checkbox"/> 13 Extra curricular activities - sports, arts and societies	1	2	3	4	5
14	<input type="checkbox"/> 14 Job placement programs and the ability to get a good job on graduation	1	2	3	4	5
15	<input type="checkbox"/> 15 Being able to attain the right grades to get in	1	2	3	4	5
16	<input type="checkbox"/> 16 Non academic facilities (eg parking and sporting)	1	2	3	4	5
17	<input type="checkbox"/> 17 Easy access to shopping (eg banks and cafes)	1	2	3	4	5
18	<input type="checkbox"/> 18 Availability of part time study options	1	2	3	4	5
19	<input type="checkbox"/> 19 Availability of financial aid and student welfare programs	1	2	3	4	5
20	<input type="checkbox"/> 20 Personal safety on campus	1	2	3	4	5
21	<input type="checkbox"/> 21 The type of people who attend the institution	1	2	3	4	5
22	<input type="checkbox"/> 22 Relevance of course and subjects to your chosen career	1	2	3	4	5
23	<input type="checkbox"/> 23 You were familiar with the institution	1	2	3	4	5
24	<input type="checkbox"/> 24 The institution had to be easy to get into	1	2	3	4	5

C.5.2 Could you please describe your impression of the reputation of your current institution and the way in which it influenced you.

I eliminated the institutions that did not meet my minimum requirements before looking at other institutions. Then I ranked the factors which influenced my decision and compared the remaining institutions only on those aspects I thought were most important

I ranked the aspects from most important to least important and then selected the institutions that had the highest 'score' on the most important aspect(s). If there was a tie, I selected the next most important issue and then compared institutions until there was only one institution left to consider

I chose the institution that performed the best when comparing *all* the relevant aspects. I averaged out the relative importance of each of the aspects to compensate for both good and bad aspects

I chose the institution which was recommended to me by people who knew more about it than I did

I selected the course that was closest to my level of ENTER (TER) achievement.

1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5

C.6 You and your family

C.6.1 How far do you travel to get to your institution? km

C.6.2 What form of transport do you use to get to your institution?

C.6.3 Gender Male Female

C.6.4 How old are you? _____Years

C.6.5 What is the highest level of education you and your parents have completed?

<i>You</i>	<i>Father</i>	<i>Mother</i>	
C.6.5.1	C.6.5.2	C.6.5.3	
1 <input type="checkbox"/>	1 <input type="checkbox"/>	1 <input type="checkbox"/>	did not attend school or only completed primary school
2 <input type="checkbox"/>	2 <input type="checkbox"/>	2 <input type="checkbox"/>	some secondary school
3 <input type="checkbox"/>	3 <input type="checkbox"/>	3 <input type="checkbox"/>	completed secondary school
4 <input type="checkbox"/>	4 <input type="checkbox"/>	4 <input type="checkbox"/>	vocational qualification, diploma or associate diploma (eg TAFE)
5 <input type="checkbox"/>	5 <input type="checkbox"/>	5 <input type="checkbox"/>	university degree
6 <input type="checkbox"/>	6 <input type="checkbox"/>	6 <input type="checkbox"/>	higher degree
7 <input type="checkbox"/>	7 <input type="checkbox"/>	7 <input type="checkbox"/>	don't know

C.6.6 What is the *main* occupation (even if not currently in paid employment) of your

<i>Father</i>		<i>Mother</i>		
C.6.6.1		C.6.6.2		
1	<input type="checkbox"/>	1	<input type="checkbox"/>	Para professional (eg nurse, legal secretary, assistant teacher)
2	<input type="checkbox"/>	2	<input type="checkbox"/>	Managers or administrator
3	<input type="checkbox"/>	3	<input type="checkbox"/>	Professional, including doctors, lawyers, and teachers
4	<input type="checkbox"/>	4	<input type="checkbox"/>	Trades-person
5	<input type="checkbox"/>	5	<input type="checkbox"/>	Sales person
6	<input type="checkbox"/>	6	<input type="checkbox"/>	Plant operator
7	<input type="checkbox"/>	7	<input type="checkbox"/>	Labourer
8	<input type="checkbox"/>	8	<input type="checkbox"/>	Clerical worker
9	<input type="checkbox"/>	9	<input type="checkbox"/>	Other _____

C.6.7 What type of student are you (please tick only ONE)

<input type="checkbox"/>	1	International - Full fee paying
<input type="checkbox"/>	2	Australian – Full fee paying
<input type="checkbox"/>	3	Australian – HECS paying up front
<input type="checkbox"/>	4	Australian – HECS deferred payment
<input type="checkbox"/>	5	Other – please describe _____

C.6.8 What is your total *household* income in the last financial year from all sources before taxes? (Please include *all* income received by *anyone* in your household.) \$ _____(optional)

Thank you for your time, your effort is sincerely appreciated

D Supporting documentation for Chapters 4 to 7

This appendix presents the frequency data gathered in the examination of how students choose between universities. The purpose of this appendix is to provide supporting evidence and frequency data for the questionnaire. The purpose of this thesis is to examine *relationships* between elements in a hypothetical buyer behaviour process model. Accordingly, the results presented in this thesis do not contribute directly to the ‘proving’ of hypotheses.

The structure of the appendix follows that of the earlier chapters. The results relating to institutional choice are presented, then results relating criteria for developing preferences, followed by external information search. Subsequent to external information search is the students’ motivation to search for information and decision-making capability. The final section is the demographic information relating to the respondent students.

Each section has the table of frequencies with measures of central tendency and tests of significance results where appropriate. Further, each section has Analysis of Variance (ANOVA) results by institutional type.

Summaries of this information have been used where relevant in the earlier chapters.

D.1 Structure of the decision and University Choice

This section relates to questions Appendix C, Section 3 (page C-4). The students were asked to nominate which institution they collected information from, considered attending and enrolled in. They were also asked a number of questions relating to their enrolment status.

D.1.1 Universities of choice

The institutions available for prospective students to choose are presented in Chapter Two. The pseudonyms are used throughout this appendix.

D.1.1.1 Students and their institutions of enrolment (C:3.1.3)

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Pe</i>
Sandstone	108	18.8	18.8	18.8
Post War University	113	19.6	19.6	38.4
Flexible University	101	17.5	17.5	55.9
University of Technology	104	18.1	18.1	74.0
Metro Regional University	58	10.1	10.1	84.0
National Specialist University	84	14.6	14.6	98.6
Other	8	1.4	1.4	100.0
Total	576	100.0	100.0	

D.1.2 Level of enrolment of students participating in the study (C:3.2)

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
Undergraduate degree	549	95.3	95.3	95.3
Diploma	17	3.0	3.0	98.3
Associate diploma	3	.5	.5	98.8
Certificate	7	1.2	1.2	100.0
Total	576	100.0	100.0	

D.1.2.1 The Institutions in which students are enrolled analysed by students' level of study

	Level of study enrolled in				<i>Total</i>
	<i>Undergraduate degree</i>	<i>Diploma</i>	<i>Associate diploma</i>	<i>Certificate</i>	
Sandstone University	107	1			108
Post War University	113				113
Flexible University	101				101
University of Technology	83	13	2	6	104
Metro Regional University	58				58
National Specialist University	80	3		1	84
Other	7		1		8
Total	549	17	3	7	576

D.1.3 Students' campus of enrolment

This data was used to determine the regional and distance data. It was also used to estimate the ENTER score associated with the students' fields of study.

D.1.3.1 Campus of enrollment – frequencies (C:3.3)

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
Hawthorn	104	18.1	18.1	18.1
Bundoora	46	8.0	8.0	26.0
Bendigo	11	1.9	1.9	28.0
Caulfield	34	5.9	5.9	33.9
Clayton	53	9.2	9.2	43.1
Parkville	109	18.9	18.9	62.0
Burwood	40	6.9	6.9	68.9
Gippsland	16	2.8	2.8	71.7
Geelong/Woolstores	43	7.5	7.5	79.2
Berwick	3	.5	.5	79.7
Warnambool	11	1.9	1.9	81.6
Waurm Ponds	2	.3	.3	81.9
Malaysia	2	.3	.3	82.3
Peninsula	5	.9	.9	83.2
Oakleigh	75	13.0	13.0	96.2
Ballarat	2	.3	.3	96.5
Ascot Vale	6	1.0	1.0	97.6
Rusden	4	.7	.7	98.3
Other	10	1.7	1.7	100.0
Total	576	100.0	100.0	

D.1.4 Students' type of entry to university - frequencies (C:3.5)

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
School leaver	361	62.7	62.7	62.7
Mature age	105	18.2	18.2	80.9
Transfer	57	9.9	9.9	90.8
Other	53	9.2	9.2	100.0
Total	576	100.0	100.0	

D.1.4.1 Type of entry to university analysed by institutions of choice

	Type of entry to university				<i>Total</i>
	<i>School leaver</i>	<i>Mature age</i>	<i>Transfer</i>	<i>Other</i>	
Sandstone University	89	5	4	10	108
Post War University	75	13	8	17	113
Flexible University	41	36	17	7	101
University of Technology	48	26	20	10	104
Metro Regional University	42	9	4	3	58
National Specialist University	64	14	3	3	84
Other	2	2	1	3	8
Total	361	105	57	53	576

D.1.5 Students' field of study – frequencies (C3:3.4)

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
Arts/Humanities/Social Sciences	254	44.1	44.1	44.1
Business/Administration/Economics	131	22.7	22.7	66.8
Engineering/Surveying/Computer Technology	82	14.2	14.2	81.1
Other	29	5.0	5.0	86.1
Double Degree	80	13.9	13.9	100.0
Total	576	100.0	100.0	

D.1.5.1 Institutions enrolled in analysed by field of study

	Field of study					<i>Total</i>
	<i>Arts Humanities Social Sciences</i>	<i>Business Administration Economics</i>	<i>Engineering Surveying Computer Technology</i>	<i>Other</i>	<i>Double Degree</i>	
Sandstone University	38	12	22	3	33	108
Post War University	42	27	25		19	113
Flexible University	42	33	16	7	3	101
University of Technology	43	21	13	7	20	104
Metro Regional University	25	26	6		1	58
National Specialist University	60	9		11	4	84
Other	4	3		1		8
Total	254	131	82	29	80	576

D.1.6 Students' high school performance

The students' high school performance was estimated by assessing the students' field of study, campus of enrolment and institution of choice. Of course, this may not be representative of the students' actual performance. Consequently, this measure is not used in any definitive analysis.

D.1.6.1 Students' high school performance - ENTER estimated score

This result is estimated by determining the ENTER score allocated to the field of study and degree program at the University of choice at the campus of enrolment. Scores derived from Victorian Tertiary Admissions Centre (1999).

<i>Score</i>	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
45	1	.2	.2	.2
48	8	1.4	1.4	1.6
50	77	13.4	13.4	14.9
52	1	.2	.2	15.1
53	1	.2	.2	15.3
55	57	9.9	9.9	25.2
57	42	7.3	7.3	32.5
60	85	14.8	14.8	47.2
62	7	1.2	1.2	48.4
65	6	1.0	1.0	49.5
70	3	.5	.5	50.0
72	8	1.4	1.4	51.4
74	19	3.3	3.3	54.7
75	54	9.4	9.4	64.1
80	74	12.8	12.8	76.9
81	1	.2	.2	77.1
82	10	1.7	1.7	78.8
85	9	1.6	1.6	80.4
87	23	4.0	4.0	84.4
88	36	6.3	6.3	90.6
90	21	3.6	3.6	94.3
92	23	4.0	4.0	98.3
95	10	1.7	1.7	100.0
Total	576	100.0	100.0	

D.1.6.2 Students' ENTER score categorisation into five groups

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
45-55	145	25.2	25.2	25.2
56-65	140	24.3	24.3	49.5
66-75	84	14.6	14.6	64.1
76-85	94	16.3	16.3	80.4
>86	113	19.6	19.6	100.0
Total	576	100.0	100.0	

The ENTER score category was derived by analysing the estimated ENTER score and determining five relatively equal groups. It was necessary to create five categories in order to put ENTER scores into later structural equation modelling analysis. Structural equation modelling requires scales to be the same size as it is sensitive to scale variation (Hair, et al 1995).

D.1.6.2 ENTER score category analysed by students' institution of choice

	ENTER score category					<i>N</i>
	<i>45-55</i>	<i>56-65</i>	<i>66-75</i>	<i>76-85</i>	<i>>86</i>	
Sandstone University				5	103	108
Post War University	8	5	59	33	8	113
Flexible University	59	4	22	15	1	101
University of Technology	10	53		41		104
Metro Regional University	56	1			1	58
National Specialist University	5	76	3			84
Other	7	1				8
Total	145	140	84	94	113	576

D.1.7 Enrolment status of students at the institution of choice

D.1.7.1 Students' enrolment status – time (C:3.6.1)

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
Part time	124	21.5	21.5	21.5
Full time	452	78.5	78.5	100.0
Total	576	100.0	100.0	

D.1.7.2 Students' enrolment status – mode (C:3.6.2)

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
On campus	506	87.8	87.8	87.8
Off campus	70	12.2	12.2	100.0
Total	576	100.0	100.0	

D.1.7.3 Students enrolment status analysed by institution of choice

	Enrolment status - time		Enrolment status -mode		<i>Total</i>
	<i>Part time</i>	<i>Full time</i>	<i>On campus</i>	<i>Off campus</i>	
Sandstone University	11	97	104	4	108
Post War University	21	92	95	18	113
Flexible University	36	65	70	31	101
University of Technology	35	69	97	7	104
Metro Regional University	6	52	51	7	58
National Specialist University	12	72	82	2	84
Other	3	5	7	1	8
Total	124	452	506	70	576

D.1.8 Student consideration sets (C:3.1.1)

Students were asked to nominate the institutions they collected information from and the institutions they considered attending.

	<i>Sandstone University</i>		<i>Post War University</i>		<i>Flexible University</i>		<i>University of Technology</i>		<i>Metro Regional University</i>		<i>National Specialist University</i>		Sig
	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	
Sandstone University	1.21	.41	1.44	.49	1.63	.48	1.63	.48	1.68	.46	1.73	.44	.000
Post War University	1.26	.44	1.20	.40	1.51	.50	1.46	.50	1.55	.50	1.38	.48	.000
Institute of Technology	1.60	.49	1.61	.48	1.59	.49	1.57	.49	1.48	.50	1.66	.47	.420
Flexible University	1.81	.39	1.68	.46	1.27	.44	1.59	.49	1.63	.48	1.38	.48	.000
University of Technology	1.90	.29	1.84	.36	1.83	.37	1.25	.43	1.74	.44	1.75	.43	.000
Metro Regional University	1.77	.41	1.77	.41	1.79	.40	1.73	.44	1.41	.42	1.67	.46	.000
New State University	1.98	.14	1.94	.22	1.88	.32	1.87	.33	1.83	.39	1.75	.43	.000
National Specialist University	1.99		1.93	.24	1.97	.17	1.97	.16	1.90	.25	1.23	.42	.000
Interstate	1.86	.34	1.92	.25	1.84	.360	1.91	.28	1.90	.25	1.96	.18	.048
International	1.95	.21	1.98	.13	1.99		1.98	.13	1.98	.13	1.95	.21	.519
Other	1.99		1.97	.15	1.95	.21	2.00	.00	2.00	.00	1.95	.21	.102

1= yes considered 2 = did not consider. Means closer to one are indicative of higher levels of consideration
ANOVA

D.1.8.1 Institutions that students collected information about (C:3.1.2)

	<i>Sandstone University</i>		<i>Post War University</i>		<i>Flexible University</i>		<i>University of Technology</i>		<i>Metro Regional University</i>		<i>National Specialist University</i>		Sig
	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	
Sandstone University	1.19	.39	1.42	.49	1.53	.50	1.51	.50	1.55	.50	1.61	.48	.000
Post War University	1.33	.47	1.15	.35	1.50	.50	1.41	.49	1.48	.50	1.32	.46	.000
University of Technology	1.76	.42	1.70	.45	1.73	.44	1.25	.43	1.67	.47	1.71	.45	.000
Interstate	1.88	.31	1.88	.32	1.82	.38	1.92	.26	1.96	.18	1.94	.23	.042
Institute of Technology	1.61	.48	1.53	.50	1.65	.47	1.61	.48	1.51	.50	1.59	.49	.303
International	1.96	.18	1.96	.18	1.99		1.99		1.96	.18	1.97	.15	.732
Metro Regional University	1.56	.49	1.61	.48	1.61	.48	1.59	.49	1.12	.32	1.67	.46	.000
National Specialist University	1.98	.13	1.90	.29	1.91	.28	1.89	.30	1.94	.22	1.23	.42	.000
News State University	1.87	.32	1.80	.39	1.80	.40	1.75	.43	1.74	.44	1.72	.44	.135
Flexible University	1.59	.49	1.52	.50	1.17	.38	1.54	.50	1.56	.49	1.33	.47	.000

ANOVA 1 = yes collected information 2 = Did not collect information Means closer to one are indicative of higher levels of collection

D.2 Students' criteria for preference of an institution (C:5.1)

Students were asked to nominate what was important to their decision to attend a particular institution. They were asked to select five of these factors and then asked to rank them from 1 to 5.

D.2.1 Students' criteria for preference - ranked data

D.2.1.1 Criteria ranked in the top five by students - analysed by count of students (C:5.1.1)

<i>Criterion</i>	<i>Count</i>	<i>Percent of responses</i>	<i>Percent of respondents</i>
Degrees	318	13.0%	55.1%
Location	300	12.3%	52.0%
Relevance	263	10.8%	45.6%
Image or reputation	237	9.7%	41.1%
Job placement	210	8.6%	36.4%
Fees and costs	157	6.4%	27.2%
Attaining the right grades	130	5.3%	22.5%
Prestige courses	119	4.9%	20.6%
Exemptions	104	4.3%	18.0%
Educational facilities	95	3.9%	16.5%
Size	75	3.1%	13.0%
Social life	73	3.0%	12.7%
Part time	68	2.8%	11.8%
Prestige staff	63	2.6%	10.9%
Familiar	52	2.1%	9.0%
Extracurricular	28	1.1%	4.9%
Campus facilities	26	1.1%	4.5%
Easy to get into	26	1.1%	4.5%
Type of people	25	1.0%	4.3%
Difficulty	21	0.9%	3.6%
Safety	19	0.8%	3.3%
Financial aid	13	0.5%	2.3%
Access to shopping	12	0.5%	2.1%
Parking and sporting facs	11	0.4%	1.9%
Total	2445	100.0%	423.7%

D.2.1.2 Level of importance of criteria nominated by the student – ranked by most important factor (C:5.1.2)

	<i>Not Important</i>		2		3		4		<i>Very Important</i>	
	1	%	2	%	3	%	4	%	5	%
Relevance to career	118	20.5	12	2.1	40	6.9	148	25.7	258	44.8
Degrees offered	111	19.3	16	2.8	50	8.7	164	28.5	235	40.8
Location	123	21.4	31	5.4	60	10.4	178	30.9	184	31.9
Job Placement	180	31.3	32	5.6	66	11.5	120	20.8	178	30.9
Image or reputation	142	24.7	28	4.9	100	17.4	178	30.9	128	22.2
Attaining the right grades	189	32.8	37	6.4	87	15.1	153	26.6	110	19.1
Part time study	308	53.5	90	15.6	50	8.7	52	9.0	76	13.2
Prestige of course	186	32.3	54	9.4	119	20.7	144	25.0	73	12.7
Fees	215	37.3	83	14.4	99	17.2	106	18.4	73	12.7
Exemptions	288	50.0	74	12.8	61	10.6	81	14.1	72	12.5
Educational facs	176	30.6	52	9.0	131	22.7	156	27.1	61	10.6
Social opportunities	215	37.3	65	11.3	116	20.1	124	21.5	56	9.7
Prestige of staff	197	34.2	59	10.2	129	22.4	141	24.5	50	8.7
Size of institution	219	38.0	88	15.3	123	21.4	99	17.2	47	8.2
Familiar with uni	242	42.0	76	13.2	115	20.0	96	16.7	47	8.2
Campus facs	241	41.8	83	14.4	126	21.9	85	14.8	41	7.1
Safety on campus	272	47.2	74	12.8	99	17.2	94	16.3	37	6.4
Extra curricular activities	257	44.6	85	14.8	116	20.1	85	14.8	33	5.7
Type of people who attend	260	45.1	86	14.9	116	20.1	82	14.2	32	5.6
Parking and sporting	276	47.9	107	18.6	104	18.1	66	11.5	23	4.0
Financial aid	320	55.6	111	19.3	81	14.1	41	7.1	23	4.0
Easy to get into	323	56.1	110	19.1	84	14.6	37	6.4	22	3.8
Shopping	311	54.0	99	17.2	94	16.3	55	9.5	17	3.0
Hard to study	237	41.1	87	15.1	164	28.5	74	12.8	14	2.4

D.2.2 Students' criteria for preferring an institution analysed by institution of enrolment

	<i>Sandstone University</i>		<i>Post War University</i>		<i>Flexible University</i>		<i>University of Technology</i>		<i>Metro Regional University</i>		<i>National Specialist University</i>		Sig
	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	
Attaining the right grades	2.98	1.62	3.03	1.59	2.51	1.53	2.81	1.49	3.36	1.44	3.15	1.48	.007
Campus facs	2.62	1.41	2.42	1.39	1.90	1.21	2.08	1.20	2.66	1.19	2.36	1.41	.000
Degrees offered	3.68	1.55	3.71	1.49	3.73	1.54	3.61	1.46	3.86	1.43	3.68	1.53	.737
Easy to get into	1.56	1.02	1.73	1.03	1.78	1.07	2.06	1.30	2.16	1.20	1.85	1.10	.001
Educational facs	2.81	1.39	2.82	1.48	2.90	1.40	2.69	1.39	3.00	1.36	2.62	1.35	.102
Exemptions	1.77	1.21	2.20	1.49	2.72	1.66	2.46	1.53	2.40	1.56	2.05	1.30	.000
Extra curricular activities	2.51	1.39	2.18	1.25	1.84	1.18	2.14	1.23	2.38	1.24	2.44	1.45	.002
Familiar with uni	2.61	1.52	2.46	1.46	2.14	1.39	2.39	1.27	2.31	1.25	2.19	1.23	.162
Fees	2.07	1.35	2.58	1.46	2.91	1.51	2.57	1.44	2.71	1.45	2.55	1.45	.005
Financial aid	1.69	1.03	1.82	1.13	1.78	1.09	1.92	1.14	1.84	1.20	2.13	1.36	.087
Hard to study	2.24	1.25	2.19	1.23	2.19	1.15	2.27	1.18	2.29	1.14	2.10	1.10	.756
Image or reputation	3.86	1.38	3.52	1.36	2.65	1.44	3.01	1.52	3.12	1.43	3.02	1.43	.000
Job Placement	3.26	1.65	3.12	1.63	2.53	1.65	3.45	1.62	3.24	1.63	3.43	1.58	.000
Location	3.44	1.57	3.55	1.49	2.92	1.67	3.47	1.45	3.74	1.26	3.93	1.27	.000
Parking and sporting	1.98	1.16	1.88	1.10	1.78	1.13	2.15	1.25	2.41	1.34	2.36	1.32	.002
Part time study	1.46	.92	2.00	1.42	2.67	1.71	2.44	1.51	1.93	1.36	2.20	1.45	.000
Prestige of course	3.20	1.51	2.96	1.40	2.21	1.34	2.85	1.43	2.74	1.37	2.64	1.40	.000
Prestige of staff	2.86	1.42	2.60	1.37	2.27	1.32	2.64	1.36	2.91	1.42	2.70	1.42	.010
Relevance to career	3.50	1.60	3.77	1.51	3.70	1.59	3.88	1.46	3.76	1.48	3.88	1.51	.066
Safety on campus	2.05	1.26	2.29	1.40	2.04	1.31	2.35	1.43	2.34	1.36	2.40	1.35	.088
Shopping	2.06	1.25	1.72	1.04	1.52	.93	1.99	1.20	2.17	1.13	2.17	1.29	.000
Size of institution	2.45	1.44	2.45	1.37	2.03	1.23	2.35	1.32	2.22	1.04	3.15	1.38	.000
Social opportunities	2.85	1.50	2.44	1.41	2.25	1.38	2.48	1.34	2.78	1.39	2.69	1.41	.013
Type of people who attend	2.44	1.42	2.19	1.33	1.89	1.20	2.21	1.22	2.26	1.29	2.30	1.27	.051

ANOVA

D.2.3 Reputation

The visual scale (See Appendix C:5.3) was converted into a five-point scale by decomposing the scale into five categories. Each of the lines was originally coded 1 to 22 including the two anchor points. The original 22-point scale was collapsed into five unequal sized categories. 1 to 4 Poor, 5 to 8, 9 to 12, 13 to 17, 18 to 22 Excellent. It was necessary to use unequal sized categories, rather than a categorisation based on percentiles, in order to capture the range of results. There was only one respondent who suggested that the reputation of their present institution was ‘poor.’

D.2.3.1 Image of institution, visual scale data (C:5.3)

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
Poor	1	.2	.2	.2
2	8	1.4	1.4	1.6
3	55	9.5	9.5	11.1
4	332	57.6	57.6	68.8
Excellent	180	31.3	31.3	100.0
Total	576	100.0	100.0	

D.2.3.2 Reputation scaled data analysed by institution of choice

	<i>N</i>	<i>Mean</i>	<i>Std. Dev</i>	<i>95% Confidence Interval for Mean</i>	
				<i>Lower Bound</i>	<i>Upper Bound</i>
Sandstone University	108	4.60	.52	4.50	4.70
Post War University	113	4.38	.55	4.27	4.48
Flexible University	101	4.03	.63	3.91	4.16
University of Technology	104	4.02	.58	3.91	4.14
Metro Regional University	58	4.15	.67	3.97	4.33
National Specialist University	84	3.79	.72	3.64	3.95
Other	8	3.8750	.99	3.04	4.70
Total	576	4.1840	.66	4.12	4.23

ANOVA Sig .000

D.2.4 Students' perception of the image of the institution (C:5.4)

This data relates to Appendix C:5.4. The data were originally scaled from 1 to 7. However, the two end categories were collapsed to generate a 5-point scale.

D.2.4.1 Students' perception of the image of their institution analysed by institution of choice

	<i>Sandstone University</i>		<i>Post War University</i>		<i>Flexible University</i>		<i>University of Technology</i>		<i>Metro Regional University</i>		<i>National Specialist University</i>		Sig
	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	
Hard v Easy	1.67	1.14	2.37	1.14	3.39	1.13	3.25	1.14	3.45	1.22	3.69	1.11	.000
Exceptional v Ordinary	1.72	.92	2.17	1.02	2.25	1.00	2.49	1.01	2.29	.94	2.50	1.24	.000
Formal v Informal	2.51	1.26	3.29	1.31	3.64	1.07	3.83	1.13	3.57	1.22	3.77	1.09	.000
General v Specialist	3.45	1.36	3.46	1.27	3.36	1.20	3.62	1.21	3.12	1.26	3.55	1.32	.263
Hard to get into v Easy to get into	1.77	.95	2.06	1.02	2.74	.99	2.60	.93	2.67	.94	2.92	1.04	.000
Influential v Non influential	1.53	.86	1.77	.95	2.40	1.01	2.29	1.07	2.14	.96	2.65	1.28	.000
Innovative v Not innovative	2.10	1.01	1.93	1.14	2.00	1.06	2.02	1.01	2.24	1.01	2.25	1.14	.253
Known v Unknown	1.15	.47	1.27	.78	1.66	.97	1.77	.99	1.60	.88	3.55	1.26	.000
Modern v Fashioned v New	3.01	1.34	4.14	1.04	4.42	.97	3.82	1.06	4.09	1.17	3.33	1.33	.000
High Prestige Low	1.86	1.09	3.38	1.40	3.81	1.30	3.02	1.24	3.24	1.20	3.04	1.41	.000
Quantitative v non quantitative	1.28	.73	1.67	.99	2.30	.88	2.49	.91	2.24	1.03	3.02	1.21	.000
Research oriented v Teaching oriented	2.41	.97	2.50	1.04	2.89	.85	2.76	.79	2.66	.85	3.06	1.01	.000
Large v Small	2.56	1.23	2.70	1.29	3.14	1.10	2.90	1.19	2.90	1.17	3.37	1.23	.000
Theoretical v Practical	1.44	.86	1.72	1.26	2.35	1.45	3.12	1.34	1.52	1.00	4.81	.50	.000
Traditional v Not traditional	2.28	1.27	2.88	1.25	3.05	1.05	3.40	1.36	2.64	1.13	3.13	1.21	.000
Traditional v Not traditional	1.81	.99	2.88	1.17	3.41	.93	3.29	.94	2.84	.87	2.56	1.24	.000

ANOVA

Exploratory factor analysis identified the dimensions denominated Status, Style, Tradition and Approach (See Chapter Four). Composite variables were computed using a mean of the scale items. This was derived by adding each item and dividing by the number of items.

D2.4.2 Students' perceptions of the image of their institution dimensions by institution of choice

	<i>Sandstone University</i>		<i>Post War University</i>		<i>Flexible University</i>		<i>University of Technology</i>		<i>Metro Regional University</i>		<i>National Specialist University</i>		Sig
	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	
REP Status Factor score	1.47	.64	1.83	.74	2.41	.65	2.55	.70	2.22	.70	3.33	.69	.000
REP Style Factor scores	2.33	.69	2.40	.79	2.67	.61	2.59	.74	2.53	.73	2.86	.77	.000
REP Tradition factor scores	2.42	.89	3.52	.87	3.99	.71	3.63	.75	3.62	.85	3.30	.84	.000
REP Approach factor scores	3.02	1.06	3.34	.95	3.42	.89	3.68	.96	3.01	.99	3.52	.88	.000

ANOVA

D.3 External information search activities

External information search consists of several dimensions: the effort spent on external information search activities, the variety of sources used and the type of information sought.

D.3.1 Students' overall self perceived intensity of search scale (C:4.1)

Intensity of search was measured by a series of six questions. The questions were evaluated for their reliability and produced a standardised alpha of .85. A composite variable was generated using a mean of the scale items. This was derived by adding each item and dividing by the number of items. This procedure is recommended by Sharma (1996) in situations where there is a need to produce smoothed variables for inputting into any form of modelling.

D.3.1.1 Students' self-perceived intensity of search – item response frequencies analysed by students institution of choice (C:4.1 1-6)

	<i>Sandstone University</i>		<i>Post War University</i>		<i>Flexible University</i>		<i>University of Technology</i>		<i>Metro Regional University</i>		<i>National Specialist University</i>		Sig
	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	
Detailed comparisons	3.24	1.23	3.35	1.24	3.18	1.31	3.08	1.21	3.19	1.30	3.23	1.23	.778
More info than was provided	3.19	1.34	3.06	1.17	2.88	1.28	2.91	1.14	3.00	1.26	3.23	1.27	.197
Research is necessary	3.55	1.08	3.70	1.05	3.75	1.08	3.56	1.04	3.47	1.25	3.71	1.10	.388
Several ways of evaluating	3.52	1.26	3.46	1.19	3.31	1.28	3.36	1.25	3.52	1.29	3.49	1.27	.573
Spent time and effort in choice	3.34	1.28	3.34	1.14	3.28	1.20	3.17	1.13	3.31	1.17	3.60	1.15	.222
Time spent is worth it	3.72	1.07	3.68	1.03	3.54	1.29	3.70	1.08	3.64	1.09	3.74	1.02	.682

ANOVA

D.3.1.2 Students' intensity of search - composite variable analysed by institution of choice

	<i>Sandstone University</i>	<i>Post War University</i>	<i>Flexible University</i>	<i>University of Technology</i>	<i>Metro Regional University</i>	<i>National Specialist University</i>	<i>Other</i>	<i>Total</i>
Mean	3.50	3.54	3.36	3.37	3.47	3.57	2.88	3.46
N	108	113	101	104	58	84	8	576
Std. Dev	.92	.86	1.03	.94	1.03	.91	.99	.94

ANOVA Sig .276

D.3.2 Students' perceptions of the efficacy of marketer controlled sources of information analysed by institution of choice (C:4.1 7-10)

	<i>Sandstone University</i>		<i>Post War University</i>		<i>Flexible University</i>		<i>University of Technology</i>		<i>Metro Regional University</i>		<i>National Specialist University</i>		
	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Sig
Institutional tours are important	3.45	1.12	3.24	1.29	2.80	1.41	3.10	1.24	3.05	1.25	3.44	1.23	.001
Promotional material useless	3.35	1.10	3.37	1.11	3.37	1.18	3.52	1.02	3.57	1.09	3.54	1.07	.702
Relied on brochures	2.98	1.18	3.03	1.14	3.25	1.26	3.27	1.18	3.10	.95	3.27	1.15	.367
Visits from institutional staff	2.44	1.24	2.31	1.15	2.29	1.19	2.13	1.10	2.28	1.23	2.37	1.21	.704

Alpha .3123 Scale item reliability was too low to generate a composite variable. Consequently, this variable has not been included in further statistical modelling analysis.

D.3.3 Students' perceptions of the efficacy of non-marketer controlled sources of information analysed by institution of choice (C:4.1 11-14)

	<i>Sandstone University</i>		<i>Post War University</i>		<i>Flexible University</i>		<i>University of Technology</i>		<i>Metro Regional University</i>		<i>National Specialist University</i>		
	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Sig
Opinion of friends	2.63	1.25	2.42	1.29	2.35	1.24	2.60	1.30	2.64	1.13	2.04	1.16	.019
Reliance on family influence	3.26	1.36	3.12	1.38	2.46	1.27	2.37	1.30	2.95	1.23	2.90	1.26	.000
Reliance on professional counsellors	2.44	1.19	2.33	1.19	2.33	1.10	2.52	1.21	2.66	1.38	2.32	1.12	.535
Talked to family and friends	3.37	1.26	3.00	1.35	2.96	1.33	2.99	1.23	3.12	1.26	3.07	1.27	.287

ANOVA

Alpha for these items was .5813. This was considered to be sufficient to generate a composite variable to be used in further analysis.

D.3.3.1 Students' beliefs in the efficacy of non-marketer controlled information analysed by the institution of choice

	<i>Sandstone University</i>	<i>Post War University</i>	<i>Flexible University</i>	<i>University of Technology</i>	<i>Metro Regional University</i>	<i>National Specialist University</i>
Mean	3.09	2.85	2.66	2.70	2.98	2.70
N	108	113	101	104	58	84
Std. Dev	.94	.96	.86	.93	.91	.80

ANOVA Significant .007

D.3.4 Commercial (promotional) sources of information and their usage by students (C:4.4)

D.3.4.1 Sources of promotional information used by students - ranked in order of percent of respondents who used the source

	<i>Count</i>	<i>Percent of responses</i>	<i>Percent of Respondents</i>
Admission guide	313	15.93%	54.34%
Internet	232	11.81%	40.28%
Personal visits	224	11.40%	38.89%
Careers info	207	10.53%	35.94%
Visits to Uni's	157	7.99%	27.26%
How to Handbook	154	7.84%	26.74%
Schools visits	133	6.77%	23.09%
Advertising	124	6.31%	21.53%
Information from professionals	95	4.83%	16.49%
Local Newspaper	62	3.16%	10.76%
Signs	52	2.65%	9.03%
Metro paper	48	2.44%	8.33%
Magazine Advertising	40	2.04%	6.94%
Study Link	37	1.88%	6.42%
Contact with an agent	31	1.58%	5.38%
Billboards and Signs	26	1.32%	4.51%
Other	13	0.66%	2.26%
Cinema advertising	12	0.61%	2.08%
Bus or transport signs	5	0.25%	0.87%
Total	1965	100.00%	700.00%

D.3.4.2 Use of promotional sources of information analysed by students' institution of choice

	<i>Sandstone University</i>		<i>Post War University</i>		<i>Flexible University</i>		<i>University of Technology</i>		<i>Metro Regional University</i>		<i>National Specialist University</i>		<i>Sig</i>
	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	
Admission guides	1.61	.48	1.53	.50	1.47	.50	1.49	.50	1.55	.50	1.63	.48	.194
Agents	1.06	.24	1.05	.22	1.07	.27	1.04	.21	1.05	.22	1.01	.10	.508
Billboards and signs	1.03	.18	1.01	.13	1.05	.23	1.07	.26	1.01	.13	1.05	.23	.334
Bus or transport	1.00		1.00	.00	1.00		1.01	.13	1.00	.00	1.01	.10	.807
Careers info	1.45	.50	1.36	.48	1.30	.46	1.28	.45	1.31	.46	1.45	.50	.014
Cinema	1.01	.13	1.01	.13	1.01	.14	1.01	.13	1.03	.18	1.02	.15	.991
How to guides	1.26	.44	1.23	.42	1.38	.48	1.29	.45	1.15	.36	1.22	.42	.031
In school visits	1.33	.47	1.28	.45	1.15	.36	1.18	.38	1.15	.36	1.23	.42	.021
Internet	1.45	.50	1.42	.49	1.42	.49	1.34	.47	1.39	.49	1.38	.48	.455
Magazines	1.04	.21	1.07	.25	1.10	.31	1.06	.25	1.05	.22	1.05	.23	.662
Metro paper	1.05	.23	1.08	.28	1.07	.27	1.07	.26	1.06	.25	1.14	.35	.427
Other sources	1.00		1.01	.13	1.02	.17	1.04	.21	1.03	.18	1.00	.00	.343
Personal visits	1.50	.50	1.40	.49	1.28	.45	1.34	.47	1.32	.47	1.42	.49	.036
Professionals	1.17	.38	1.17	.38	1.13	.34	1.17	.38	1.20	.40	1.14	.35	.761
Study link	1.08	.27	1.06	.24	1.03	.19	1.02	.16	1.08	.28	1.10	.31	.284
University visits	1.35	.47	1.27	.44	1.21	.41	1.24	.42	1.31	.46	1.25	.43	.409

ANOVA

D.3.4.3 Counted sources of promotional sources of information – number of sources by students

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
.00	46	8.0	8.0	8.0
1.00	83	14.4	14.4	22.4
2.00	91	15.8	15.8	38.2
3.00	99	17.2	17.2	55.4
4.00	79	13.7	13.7	69.1
5.00	60	10.4	10.4	79.5
6.00	39	6.8	6.8	86.3
7.00	79	13.7	13.7	100.0
Total	576	100.0	100.0	

D.3.4.4 Counted number of promotional sources used analysed by students' institution of choice

	<i>Sandstone University</i>	<i>Post War University</i>	<i>Flexible University</i>	<i>University of Technology</i>	<i>Metro Regional University</i>	<i>National Specialist University</i>	<i>Total</i>
Mean	3.72	3.45	3.18	3.29	3.15	3.70	3.40
N	108	113	101	104	58	84	576
Std. Dev	2.11	2.11	1.99	2.38	2.06	2.09	2.15

ANOVA Sig .073

The raw count data were further analysed to determine the extent of search within the category. The counted number of sources was divided by the number of sources available generating a percentage of available sources figure.

D.3.4.5 Students' extent of use of promotional sources of information analysed by institution of choice

	<i>Sandstone University</i>	<i>Post War University</i>	<i>Flexible University</i>	<i>University of Technology</i>	<i>Metro Regional University</i>	<i>National Specialist University</i>	<i>Total</i>
Mean	19.96%	18.16%	16.78%	17.36%	16.61%	19.49%	17.95%
N	108	113	101	104	58	84	576
Std. Dev	.1112	.1114	.1052	.1257	.1088	.1102	.1134

ANOVA Sig .073

In order to generate a five-point scale that could be used in modelling techniques, a variable was generated from the promotional counted sources data using the categorise variables technique in SPSS. Categorize Variables converts continuous numeric data to a discrete number of categories. The procedure creates new variables containing the categorical data. Data are categorized based on percentile groups, with each group containing approximately the same number of cases. For example, a specification of 4 groups would assign a value of 1 to cases below the 25th percentile, 2 to cases between the 25th and 50th percentile, 3 to cases between the 50th and 75th percentile, and 4 to cases above the 75th percentile. (SPSS 9.0 Help topics.)

D.3.4.6 Frequencies of promotional sources of information percentage of sources available – percentile categories

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
Less than 5%	129	22.4	22.4	22.4
2	91	15.8	15.8	38.2
3	99	17.2	17.2	55.4
4	139	24.1	24.1	79.5
More than 32%	118	20.5	20.5	100.0
Total	576	100.0	100.0	

D.3.5 Students use of interpersonal sources of information - frequencies (C:4.3)

	<i>Did not contact</i>		<i>Did not rely on</i>						<i>Strongly reliant</i>			
	0	%	1	%	2	%	3	%	4	%	5	%
Careers counsellors	240	41.7	25	4.3	29	5.0	81	14.1	106	18.4	95	16.5
Extended Family	400	69.4	17	3.0	23	4.0	57	9.9	49	8.5	30	5.2
Family	172	29.9	18	3.1	38	6.6	112	19.4	132	22.9	104	18.1
Friends	136	23.6	35	6.1	83	14.4	174	30.2	112	19.4	36	6.3
Government organisations	524	91.0	19	3.3	9	1.6	9	1.6	7	1.2	8	1.4
Members of accrediting bodies	510	88.5	14	2.4	12	2.1	8	1.4	15	2.6	17	3.0
Others	528	91.7	5	.9			11	1.9	13	2.3	19	3.3
Students at Uni	271	47.0	11	1.9	19	3.3	67	11.6	141	24.5	67	11.6
Students from other Uni's	351	60.9	10	1.7	27	4.7	65	11.3	92	16.0	31	5.4
Teachers and Staff from Uni	360	62.5	11	1.9	15	2.6	43	7.5	96	16.7	51	8.9
Training and development staff	511	88.7	13	2.3	9	1.6	13	2.3	17	3.0	13	2.3
Staff from other Unis	460	79.9	13	2.3	15	2.6	29	5.0	38	6.6	21	3.6

D.3.5.1 Students use of interpersonal sources of information used by analysed by students' institution of choice

	<i>Sandstone University</i>		<i>Post War University</i>		<i>Flexible University</i>		<i>University of Technology</i>		<i>Metro Regional University</i>		<i>National Specialist University</i>		Sig
	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	
Careers counsellors	2.33	1.94	2.18	1.90	1.61	1.97	2.02	2.12	2.41	2.13	2.50	2.01	.008
Extended Family	1.30	1.84	1.19	1.69	.86	1.56	.94	1.58	.78	1.65	.89	1.58	.153
Family	3.15	1.72	2.74	1.89	2.18	1.93	2.09	1.86	2.79	2.00	2.55	1.95	.001
Friends	2.50	1.47	2.36	1.60	2.04	1.52	2.50	1.64	2.64	1.58	2.13	1.71	.142
Government organisations	.16	.74	.13	.73	.15	.61	.48	1.25	.14	.51	.30	.95	.036
Members of accrediting bodies	.29	1.02	.18	.85	.38	1.11	.62	1.41	.29	1.06	.37	1.16	.122
Others	.19	.90	.16	.80	.52	1.44	.54	1.39	.31	1.16	.18	.88	.052
Students at Uni	2.49	1.94	2.19	1.93	1.79	2.02	1.74	2.06	2.07	2.04	1.63	1.99	.039
Students from other Uni's	1.46	1.80	1.07	1.68	1.09	1.71	1.55	1.90	1.47	1.95	1.70	1.87	.071
Teachers and Staff from Uni	1.15	1.80	1.23	1.81	1.71	2.04	1.47	1.94	1.26	1.93	1.70	2.07	.139
Training and development staff	.22	.89	.25	.99	.45	1.22	.56	1.33	.29	.94	.30	1.05	.213
Staff from other unis	.64	1.40	.64	1.42	.74	1.54	.61	1.38	.63	1.47	.73	1.52	.995

ANOVA

D.3.5.2 Counted number of interpersonal sources used by students

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
.00	18	3.1	3.1	3.1
1.00	37	6.4	6.4	9.5
2.00	83	14.4	14.4	24.0
3.00	107	18.6	18.6	42.5
4.00	94	16.3	16.3	58.9
5.00	95	16.5	16.5	75.3
6.00	65	11.3	11.3	86.6
7.00	32	5.6	5.6	92.2
8.00	10	1.7	1.7	93.9
9.00	7	1.2	1.2	95.1
11.00	19	3.3	3.3	98.4
12.00	9	1.6	1.6	100.0
Total	576	100.0	100.0	

The raw count data were further analysed to determine the extent of search within the category. The counted number of sources was divided by the number of sources available generating a percentage of available sources figure.

For further analysis these data were collapsed into groups and ranked from low extent of search to high extent of interpersonal search using the SPSS categorise function. Groups were assigned 1 = low extent of search 5 = high extent of search. The computed variable was then used to analyse by institution of choice.

D.3.5.3 Students' extent of interpersonal search analysed by institution of choice

	<i>Sandstone University</i>	<i>Post War University</i>	<i>Flexible University</i>	<i>University of Technology</i>	<i>Metro Regional University</i>	<i>National Specialist University</i>	<i>Total</i>
Mean	3.31	3.02	2.72	2.91	3.05	3.02	2.99
N	108	113	101	104	58	84	576
Std. Dev	1.45	1.49	1.54	1.49	1.52	1.58	1.52

ANOVA Sig .064

D.3.6 Students attendance at an Open Day or Information session at the institution of choice (C:4.5) Experiential information

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
Yes	237	41.1	41.1	41.1
No	339	58.9	58.9	100.0
Total	576	100.0	100.0	

D.3.6.1 The students' perception of the helpfulness of open day at the institution of choice on the decision to attend (C:4.5.1)

The qualitative responses in the questionnaire were reviewed and the comments assigned to one of the five categories indicated in the following table. Comments were assigned using at least three opinions.

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
Did not attend	339	58.9	58.9	58.9
Not at all helpful	9	1.6	1.6	60.4
2	20	3.5	3.5	63.9
3	62	10.8	10.8	74.7
4	60	10.4	10.4	85.1
Very helpful	86	14.9	14.9	100.0
Total	576	100.0	100.0	

D.3.6.2 Students attendance at open days other than the institution of final choice (C:4.6)

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
Yes	298	51.7	51.7	51.7
No	278	48.3	48.3	100.0
Total	576	100.0	100.0	

D.3.6.3 The number of open days other than the institution of final choice attended by the student (C:4.6.1)

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
0 (none)	278	48.3	48.3	48.3
1 open day	92	16.0	16.0	64.2
2	114	19.8	19.8	84.0
3	49	8.5	8.5	92.5
4	25	4.3	4.3	96.9
5	15	2.6	2.6	99.5
6	3	.5	.5	100.0
Total	576	100.0	100.0	

D.3.6.4 Students' extent of experiential search – counted total number of open days attended

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
.00	278	48.3	48.3	48.3
1.00	2	.3	.3	48.6
2.00	91	15.8	15.8	64.4
3.00	114	19.8	19.8	84.2
4.00	48	8.3	8.3	92.5
5.00	25	4.3	4.3	96.9
6.00	15	2.6	2.6	99.5
7.00	3	.5	.5	100.0
Total	576	100.0	100.0	

The raw count data were further analysed to determine the extent of search within the category. The counted number of sources was divided by the number of sources available generating a percentage of available sources figure. These were then collapsed into an extent of search variable using the SPSS categorise variables.

D.3.6.5 Students' extent of experiential search index analysed by institution of choice

	<i>Sandstone University</i>	<i>Post War University</i>	<i>Flexible University</i>	<i>University of Technology</i>	<i>Metro Regional University</i>	<i>National Specialist University</i>	<i>Total</i>
Mean	1.97	2.14	1.90	2.08	2.10	2.25	2.06
N	108	113	101	104	58	84	576
Std. Dev	1.07	1.29	1.13	1.33	1.19	1.21	1.21

ANOVA Sig .420

D.3.6.6 Counts of open day attendance analysed by students' institution of choice

	<i>OPENDAY – Attendance at CURRENT institution</i>		<i>OPEN - Attendance at OTHER open days</i>		
	Yes	No	Yes	No	Total
Sandstone University	58	50	58	50	108
Post War University	43	70	58	55	113
Flexible University	40	61	47	54	101
University of Technology	43	61	48	56	104
Metro Regional University	19	39	33	25	58
National Specialist University	30	54	51	33	84
Other	4	4	3	5	8
Total	237	339	298	278	576

ANOVA Sig .103 ANOVA Sig .365

D.3.6.7 Counted number of other open days attended analysed by institution of choice

	<i>None</i>	<i>1 day</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>Total</i>
Sandstone University	50	24	21	12	1			108
Post War University	56	13	22	12	5	5		113
Flexible University	54	13	24	5	2	2	1	101
University of Technology	56	10	16	10	7	4	1	104
Metro Regional University	25	13	11	5	2	1	1	58
National Specialist University	32	17	20	4	8	3		84
Other	5	2		1				8
Total	278	92	114	49	25	15	3	576

ANOVA Sig .176

D.3.6.8 The students' perception of the helpfulness of open day to decision analysed by institution of choice (C:4.5.1)

	<i>Did not attend</i>	<i>Not at all helpful</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>Very helpful</i>	<i>Total</i>
Sandstone University	50	5	9	14	19	11	108
Post War University	70	1	4	11	14	13	113
Flexible University	61	1	1	11	9	18	101
University of Technology	61		2	15	10	16	104
Metro Regional University	39	1	4	3	2	9	58
National Specialist University	54	1		8	4	17	84
Other	4				2	2	8
Total	339	9	20	62	60	86	576

ANOVA Significant .010

D.3.7 Students' perception of the usefulness of information of information provided by the institution – ranked by mean of usefulness to student (C:4.2)

	<i>Did not collect</i>		<i>Not at all useful</i>						<i>Very useful</i>				<i>Tot</i>	<i>Mean</i>
	0	%	1	%	2	%	3	%	4	%	5	%		
Handbook	73	12.7	5	0.9	7	1.2	72	12.5	190	33	229	39.8	576	3.72
Courses degrees/diplomas	105	18.2	3	0.5	7	1.2	35	6.1	156	27.1	270	46.9	576	3.64
Brochure	86	14.9	13	2.3	52	9	156	27.1	178	30.9	91	15.8	576	3.04
Individual subjects	178	30.9	1	0.2	9	1.6	40	6.9	128	22.2	220	38.2	576	3.04
Fees and scholarships	217	37.7	10	1.7	32	5.6	87	15.1	121	21	109	18.9	576	2.37
Map of Uni	203	35.2	23	4	45	7.8	100	17.4	111	19.3	94	16.3	576	2.30
Admissions policies	281	48.8	9	1.6	20	3.5	74	12.8	109	18.9	83	14.4	576	1.95
Sporting	318	55.2	28	4.9	39	6.8	82	14.2	82	14.2	27	4.7	576	1.41
Social programs	347	60.2	17	3	21	3.6	84	14.6	81	14.1	26	4.5	576	1.33
Overseas study	357	62	22	3.8	22	3.8	63	10.9	66	11.5	46	8	576	1.30
Students socialising	313	54.3	75	13	65	11.3	71	12.3	41	7.1	11	1.9	576	1.11
Newsletters and magazines	405	70.3	12	2.1	24	4.2	62	10.8	54	9.4	19	3.3	576	0.97
Boarding facilities	415	72	24	4.2	31	5.4	37	6.4	38	6.6	31	5.4	576	0.88
Student welfare	431	74.8	11	1.9	27	4.7	45	7.8	43	7.5	19	3.3	576	0.81
Arts programs	431	74.8	16	2.8	23	4	52	9	38	6.6	16	2.8	576	0.78
Mission statement	432	75	16	2.8	31	5.4	53	9.2	25	4.3	19	3.3	576	0.75
Academic achievements	455	79	8	1.4	19	3.3	35	6.1	28	4.9	31	5.4	576	0.73
Academic research	483	83.9	9	1.6	13	2.3	29	5	26	4.5	16	2.8	576	0.53
Merchandise	486	84.4	40	6.9	21	3.6	19	3.3	3	0.5	7	1.2	576	0.32
Video of Uni	518	89.9	22	3.8	12	2.1	10	1.7	6	1.0	8	1.4	576	0.25
Other	576	100												0.0

D.3.7.1 Students' perception of the usefulness of information provided by the institution – ranked by collection rate of items (C:4.2)

	<i>Did not collect</i>		<i>Not at all useful</i>						<i>Very useful</i>				<i>Tot</i>	<i>Mean</i>
	0	%	1	%	2	%	3	%	4	%	5	%		
Handbook	73	12.7	5	0.9	7	1.2	72	12.5	190	33	229	39.8	576	3.72
Brochure	86	14.9	13	2.3	52	9	156	27.1	178	30.9	91	15.8	576	3.04
Courses degrees/diplomas	105	18.2	3	0.5	7	1.2	35	6.1	156	27.1	270	46.9	576	3.64
Individual subjects	178	30.9	1	0.2	9	1.6	40	6.9	128	22.2	220	38.2	576	3.04
Map of Uni	203	35.2	23	4	45	7.8	100	17.4	111	19.3	94	16.3	576	2.30
Fees and scholarships	217	37.7	10	1.7	32	5.6	87	15.1	121	21	109	18.9	576	2.37
Admissions policies	281	48.8	9	1.6	20	3.5	74	12.8	109	18.9	83	14.4	576	1.95
Students socialising	313	54.3	75	13	65	11.3	71	12.3	41	7.1	11	1.9	576	1.11
Sporting	318	55.2	28	4.9	39	6.8	82	14.2	82	14.2	27	4.7	576	1.41
Social programs	347	60.2	17	3	21	3.6	84	14.6	81	14.1	26	4.5	576	1.33
Overseas study	357	62	22	3.8	22	3.8	63	10.9	66	11.5	46	8	576	1.30
Newsletters and magazines	405	70.3	12	2.1	24	4.2	62	10.8	54	9.4	19	3.3	576	0.97
Boarding facilities	415	72	24	4.2	31	5.4	37	6.4	38	6.6	31	5.4	576	0.88
Student welfare	431	74.8	11	1.9	27	4.7	45	7.8	43	7.5	19	3.3	576	0.81
Arts programs	431	74.8	16	2.8	23	4	52	9	38	6.6	16	2.8	576	0.78
Mission statement	432	75	16	2.8	31	5.4	53	9.2	25	4.3	19	3.3	576	0.75
Academic achievements	455	79	8	1.4	19	3.3	35	6.1	28	4.9	31	5.4	576	0.73
Academic research	483	83.9	9	1.6	13	2.3	29	5	26	4.5	16	2.8	576	0.53
Merchandise	486	84.4	40	6.9	21	3.6	19	3.3	3	0.5	7	1.2	576	0.32
Video of Uni	518	89.9	22	3.8	12	2.1	10	1.7	6	1.0	8	1.4	576	0.25
Other	576	100												0.0

D.3.7.2 Students' perceptions of the usefulness of general sources of information analysed by institution of choice

	<i>Sandstone University</i>		<i>Post War University</i>		<i>Flexible University</i>		<i>University of Technology</i>		<i>Metro Regional University</i>		<i>National Specialist University</i>		Sig
	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	
Academic achievements	.87	1.65	.72	1.54	.80	1.60	.63	1.36	.72	1.54	.64	1.43	.783
Academic research	.50	1.28	.50	1.24	.75	1.48	.52	1.32	.45	1.24	.46	1.27	.637
Admission information	2.82	1.38	2.77	1.30	2.89	1.44	2.47	1.42	2.72	1.40	2.89	1.36	.082
Admissions policies	1.94	1.99	2.01	2.10	2.16	2.03	1.48	1.90	1.86	2.07	2.25	2.14	.197
Arts programs	1.00	1.63	.63	1.33	.86	1.46	.72	1.36	.71	1.48	.80	1.58	.437
Boarding facilities	1.25	1.90	.81	1.53	.87	1.53	.71	1.36	.79	1.56	.81	1.48	.140
Brochure	3.06	1.40	2.83	1.61	3.03	1.53	2.96	1.71	3.21	1.68	3.39	1.46	.034
Courses (degrees/diplomas)	3.65	1.86	3.60	1.83	3.59	1.97	3.61	1.86	3.90	1.75	3.76	1.68	.020
Fees and scholarships	2.66	2.02	2.59	2.01	2.60	1.91	2.03	2.01	2.07	2.16	2.13	2.02	.093
Handbook	3.97	1.39	3.51	1.72	3.74	1.59	3.46	1.77	3.86	1.52	3.98	1.43	.007
Map of Uni	2.53	2.01	2.42	1.87	2.20	1.94	2.11	2.02	2.62	1.86	2.18	1.93	.115
Merchandise	.26	.81	.37	1.03	.28	.85	.34	.89	.36	.91	.39	.91	.904
Mission statement	.49	1.11	.65	1.39	.91	1.56	.57	1.29	1.10	1.64	1.07	1.62	.011
Newsletters and magazines	.65	1.38	.98	1.63	.83	1.39	1.11	1.60	1.02	1.71	1.39	1.91	.058
Other	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
Overseas study	1.76	1.92	1.19	1.83	1.34	1.82	1.28	1.77	1.22	1.90	.92	1.63	.062
Social programs	1.20	1.78	1.31	1.70	1.35	1.75	1.25	1.73	1.57	1.86	1.48	1.85	.403
Sporting	1.38	1.69	1.56	1.78	1.16	1.57	1.28	1.77	1.90	1.79	1.45	1.90	.183
Student welfare	.56	1.35	1.18	1.77	.89	1.43	.84	1.53	.47	1.17	.82	1.57	.021
Students socialising	1.29	1.48	1.19	1.48	1.15	1.55	.97	1.37	1.00	1.39	.98	1.38	.637
Video of Uni	.21	.77	.19	.74	.32	.99	.31	.99	.29	1.06	.17	.62	.811

ANOVA

D.3.7.3 Students' extent of general information search - number of sources used

<i>No of sources used</i>	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
0	13	2.3	2.3	2.3
1.00	7	1.2	1.2	3.5
2	18	3.1	3.1	6.6
3	28	4.9	4.9	11.5
4	37	6.4	6.4	17.9
5	49	8.5	8.5	26.4
6	51	8.9	8.9	35.2
7	60	10.4	10.4	45.7
8	50	8.7	8.7	54.3
9	50	8.7	8.7	63.0
10	48	8.3	8.3	71.4
11	34	5.9	5.9	77.3
12	35	6.1	6.1	83.3
13	15	2.6	2.6	85.9
14	18	3.1	3.1	89.1
15	9	1.6	1.6	90.6
16	6	1.0	1.0	91.7
17	4	.7	.7	92.4
18	4	.7	.7	93.1
19	2	.3	.3	93.4
20	38	6.6	6.6	100.0
Total	576	100.0	100.0	

The raw count data were further analysed to determine the extent of search within the category. The counted number of sources was divided by the number of sources available generating a percentage of available sources figure. These were then collapsed into an extent of search variable using the SPSS categorise variables.

D.3.7.4 Students' extent of search for general information frequencies percentage usage of available sources

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
less than 19%	103	17.9	17.9	17.9
2	100	17.4	17.4	35.2
3	160	27.8	27.8	63.0
4	82	14.2	14.2	77.3
More than 62%	131	22.7	22.7	100.0
Total	576	100.0	100.0	

D.3.7.5 Students' extent of search for general information frequencies percentage - usage of available sources analysed by institution of choice

	<i>Sandstone University</i>	<i>Post War University</i>	<i>Flexible University</i>	<i>University of Technology</i>	<i>Metro Regional University</i>	<i>National Specialist University</i>	<i>Total</i>
Mean	3.20	3.08	3.14	2.84	3.12	3.12	3.07
N	108	113	101	104	58	84	576
Std. Dev	1.27	1.30	1.48	1.52	1.33	1.41	1.39

ANOVA Sig .236

D.3.8 Types of information found useful by students analysed by institution of choice (C:4.7)

	<i>Sandstone University</i>		<i>Post War University</i>		<i>Flexible University</i>		<i>University of Technology</i>		<i>Metro Regional University</i>		<i>National Specialist University</i>		
	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Sig
Close personal sources	3.73	.99	3.63	1.09	3.34	1.12	3.40	1.15	3.72	1.02	3.49	1.09	.081
Non personal institutional sources	3.76	1.11	3.79	.98	3.79	1.14	3.82	1.05	3.52	1.14	3.86	.96	.639
Non personal, non controlled sources	2.19	1.03	2.42	1.09	2.50	1.25	2.52	1.15	2.26	1.02	2.48	1.06	.287
Other personal sources	3.60	1.05	3.37	1.00	3.35	1.21	3.49	1.22	3.78	1.04	3.63	1.24	.117

ANOVA

D.3.9 Overall extent of information search activity undertaken by students in the information search process

A variable to measure the extent of overall search was generated using the extent variables previously mentioned. The formula was: Extent of *interpersonal* information + extent of *General* sources of information + extent of *experiential* sources of information + extent of *promotional* sources of information divided by four.

	<i>Sandstone University</i>	<i>Post War University</i>	<i>Flexible University</i>	<i>University of Technology</i>	<i>Metro Regional University</i>	<i>National Specialist University</i>	<i>Total</i>
Mean	2.93	2.79	2.71	2.71	2.71	2.90	2.78
N	108	113	101	104	58	84	576
Std. Dev	.92	.98	1.13	1.26	.94	1.08	1.07

ANOVA Sig .205

D.4 Motivation to search

Motivation to search for information is hypothesised as comprising of a number of variables that have been categorised as motivational for the purposes of discussion. Each of the variables is reported with frequencies and scale reliability. Where scale reliability is over .5000, this is considered sufficient to generate an average composite variable. The composite

variable is computed by adding the response of each item and dividing by the number of items in the scale. This produces a result which can be measured on the original 5-point scale and which also takes account of variability of responses.

D.4.1 Students' purchase decision involvement

Purchase decision involvement is a consumer's felt level of involvement and sense of importance about the purchase decision. The scale used to measure purchase decision involvement was that proposed by Mittal (1995).

D.4.1.1 Students' purchase decision involvement frequencies (C:4.1 19-21)

	<i>Strongly disagree</i>				<i>Strongly agree</i>						Mean
	1	%	2	%	3	%	4	%	5	%	
Choosing is important	16	2.8	45	7.8	113	19.6	235	40.8	167	29.0	3.85
I chose Uni carefully	28	4.9	73	12.7	144	25.0	196	34.0	135	23.4	3.59
Which university matters a lot	17	3.0	63	10.9	132	22.9	214	37.2	150	26.0	3.72

Standardised item alpha .8437 – created composite variable for further analysis.

D.4.1.2 Purchase decision involvement composite variable analysed by institution of choice

	<i>Sandstone University</i>	<i>Post War University</i>	<i>Flexible University</i>	<i>University of Technology</i>	<i>Metro Regional University</i>	<i>National Specialist University</i>	<i>Total</i>
Mean	4.07	3.82	3.57	3.65	3.70	3.64	3.74
N	108	113	101	104	58	84	576
Std. Dev	.83	.84	.98	.98	.95	1.04	.95

ANOVA Significant .000

D.4.2 Students' product class involvement

Product class involvement is the consumers felt level of involvement and general interest with the product class. The scale used to measure purchase decision involvement was that proposed by Mittal (1995).

D.4.2.1 Students' product class involvement table of frequencies (C:4.1 15-18)

	<i>Strongly disagree</i>				<i>Strongly agree</i>						Mean
	1	%	2	%	3	%	4	%	5	%	
All University's are alike	254	44.1%	171	29.7%	100	17.4%	40	6.9%	11	1.9%	1.93
Doesn't matter if I get it wrong	304	52.8	176	30.6	54	9.4	30	5.2	12	2.1	1.73
Don't care which University	290	50.3	147	25.5	75	13.0	43	7.5	21	3.6	1.89
I am not concerned about University's	281	48.8	162	28.1	83	14.4	34	5.9	16	2.8	1.86

Standardised item alpha .7454 – Composite variable created. Due to the negative wording of this scale, it was reverse-coded for input into modelling and future analysis. This made it more consistent with the scale measuring purchase decision involvement.

D.4.2.2 Students' product class involvement – Composite variable analysed by institution of choice

	<i>Sandstone University</i>	<i>Post War University</i>	<i>Flexible University</i>	<i>University of Technology</i>	<i>Metro Regional University</i>	<i>National Specialist University</i>	<i>Total</i>
Mean	4.37	4.18	3.86	3.94	4.06	3.95	4.06
N	108	113	101	104	58	84	576
Std. Dev	.79	.77	.88	.90	.85	.89	.86

ANOVA Significant .001

D.4.3 Student's perceptions of the risk associated with the purchase of the educational product

Risk is the consumers' felt sense of the potential risk associated with the purchase decision.

The scale used here is adapted from Mittal (1995).

D.4.3.1 Students' perceptions of the risk associated with purchase – item response frequencies C:4.1 27-30)

	<i>Strongly disagree</i>				<i>Strongly agree</i>				Mean		
	1	%	2	%	3	%	4	%		5	%
Choosing can be risky	57	9.9	125	21.7	215	37.3	117	20.3	62	10.8	3.00
Consider more than one	14	2.4	29	5.0	88	15.3	210	36.5	235	40.8	4.08
Family might not like you if you get it wrong	347	60.2	96	16.7	69	12.0	43	7.5	21	3.6	1.78
Shouldn't choose if you do not know about a university	53	9.2	94	16.3	148	25.7	181	31.4	100	17.4	3.31

The scale items had a standardised item alpha .4778 due to the item relating to family not liking you having an inconsistent response. This item was deleted from the scale resulting in an alpha of .5863. The composite variable generated using the 3-item average.

D.4.3.2 Students' perceptions of purchase risk – composite variable analysed by institution of choice

	<i>Sandstone University</i>	<i>Post War University</i>	<i>Flexible University</i>	<i>University of Technology</i>	<i>Metro Regional University</i>	<i>National Specialist University</i>	<i>Total</i>
Mean	3.64	3.50	3.21	3.48	3.46	3.50	3.46
N	108	113	101	104	58	84	576
Std. Dev	.72	.74	.88	.71	.89	.81	.79

ANOVA Sig .013

D.4.4 Students' perceptions of time pressure associated with institutional choice

The perceptions of time pressure questions were developed for the purpose of this questionnaire.

D.4.4.1 Students' perceptions of time pressure - item response frequencies (C:3.11 – C:3.14)

		<i>Yes</i>	<i>No</i>	<i>Total</i>
Adequate time between getting results and making decision	Frequency	410	166	576
	Percent	71.18	28.82	100
Felt they had to make the decision quickly*	Frequency	255	321	576
	Percent	44.27	55.73	100
Would have used more time if available*	Frequency	240	336	576
	Percent	41.67	58.33	100

* These results were coded 2 = high felt pressure in the calculation of time pressure analysis.

D.4.4.2 Students' perceptions of time pressure - item responses analysed by institution of choice

	<i>Sandstone University</i>		<i>Post War University</i>		<i>Flexible University</i>		<i>University of Technology</i>		<i>Metro Regional University</i>		<i>National Specialist University</i>		Sig
	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	
Getting results and making the decision	1.74	.44	1.68	.47	1.83	.38	1.67	.47	1.59	.50	1.70	.46	.037
Making the decision quickly	1.41	.49	1.45	.50	1.30	.46	1.57	.50	1.45	.50	1.49	.50	.010
More time if available	1.72	.45	1.59	.49	1.56	.50	1.56	.50	1.47	.50	1.54	.50	.037

ANOVA

The above results were used to compute a time pressure index. If students responded 'Yes' to the question asking would they have spent more time if it were available, this was given a code of 1. If they responded that they had to make a decision quickly, this was also given a code of 1. If students responded that they did not have adequate time between getting their results and making a decision, this was coded one. The results of the three variables were added together. Thus, a student with a result of 3 was considered to be under time pressure, students with a result of 6 were not under pressure. These results were then reverse coded 1 = low levels of pressure, 5 = high levels of felt pressure.

D.4.4.3 Students' perceptions of time pressure computed variable frequencies

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>	<i>Mean</i>
1.00	75	13.0	13.0	13.0	
2.00	299	51.9	51.9	64.9	
3.00	178	30.9	30.9	95.8	
4.00	24	4.2	4.2	100.0	
Total	576	100.0	100.0		2.26

D.4.4.4 Students perceptions of time pressure analysed by institution of choice

	<i>Sandstone University</i>	<i>Post War University</i>	<i>Flexible University</i>	<i>University of Technology</i>	<i>Metro Regional University</i>	<i>National Specialist University</i>	<i>Total</i>
Mean	2.12	2.27	2.30	2.20	2.50	2.27	2.26
N	108	113	101	104	58	84	576
Std. Dev	.69	.73	.68	.76	.73	.76	.73

ANOVA Sig .095

It was originally intended to include the variable *time taken to make a decision*; however, there was no association between the variables of felt pressure and the amount of time the student had taken to decide. Consequently, the results included in the following table have not been used in further analysis of the concept of time pressure.

D.4.4.5 The time students took to decide – item response frequencies

		<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>	<i>Mean</i>
1	Weeks	247	42.88	42.88	42.88	1.75
2	Months	255	44.27	44.27	87.15	
3	Years	47	8.16	8.16	95.31	
4	Many Years	27	4.69	4.69	100	
Total		576	100	100		

D.4.4.6 Students' time taken to decide analysed by institution of choice

	<i>Sandstone University</i>	<i>Post War University</i>	<i>Flexible University</i>	<i>University of Technology</i>	<i>Metro Regional University</i>	<i>National Specialist University</i>
Mean	1.80	1.89	1.70	1.60	1.66	1.74
N	108	113	101	104	58	84
Std. Dev	.87	.84	.74	.78	.76	.70

ANOVA Sig .056

D.4.5 Students' perceptions of the symbolic value of education (social significance)

The symbolic value of education is the student's perception of the social significance of the educational product. The scale used here is adapted from the sign value of the product by Kapferer and Laurent (1993).

D.4.5.1 Students' perceptions of the symbolic value of education - item response frequencies (C:4.1 31-33)

	<i>Strongly disagree</i>						<i>Strongly agree</i>				Mean
	1	%	2	%	3	%	4	%	5	%	
Can tell about the person	188	32.64	196	34.03	114	19.79	57	9.90	21	3.65	2.18
Expresses who I am	146	25.35	155	26.91	149	25.87	94	16.32	32	5.56	2.50
Helps attain the life we strive for	51	8.85	83	14.41	155	26.91	206	35.76	81	14.06	3.32

Standardised item alpha .6452. Composite variable created for further analysis.

D.4.5.2 Social significance of the educational product composite variable analysed by students' institution of choice

	<i>Sandstone University</i>	<i>Post War University</i>	<i>Flexible University</i>	<i>University of Technology</i>	<i>Metro Regional University</i>	<i>National Specialist University</i>	<i>Total</i>
Mean	2.89	2.69	2.47	2.64	2.61	2.65	2.66
N	108	113	101	104	58	84	576
Std. Dev	.94	.94	.86	.74	.93	.78	.87

ANOVA Sig .041

D.4.6 Students' status aspirations

The students' status aspirations are measured using the scale from Lynn, Hampson and Magee (1983).

D.4.6.1 Students' status aspirations item response frequencies (C:2.1 36-41)

	<i>Strongly disagree</i>								<i>Strongly agree</i>		<i>Mean</i>
	1	%	2	%	3	%	4	%	5	%	
I enjoy planning others lives	40	6.94	106	18.40	185	32.12	174	30.21	71	12.33	3.23
I'd be a good leader	28	4.86	68	11.81	178	30.90	200	34.72	102	17.71	3.49
I'd like authority	65	11.28	105	18.23	182	31.60	155	26.91	69	11.98	3.10
I'd like to be important in the community	32	5.56	81	14.06	171	29.69	194	33.68	98	17.01	3.43
Like talking to important people	55	9.55	124	21.53	187	32.47	146	25.35	64	11.11	3.07
Look up to me	29	5.03	79	13.72	149	25.87	193	33.51	126	21.88	3.53

Standardised item alpha .8206. Composite variable created for further analysis.

D.4.6.2 Students' status aspiration composite variable analysed by institution of choice

	<i>Sandstone University</i>	<i>Post War University</i>	<i>Flexible University</i>	<i>University of Technology</i>	<i>Metro Regional University</i>	<i>National Specialist University</i>	<i>Total</i>
Mean	3.37	3.48	3.51	3.30	3.39	3.35	3.41
N	108	113	101	104	58	84	576
Std. Dev	.89	.88	.84	.83	.81	.84	.85

ANOVA Sig .616

D.4.7 Students' preferred decision-making strategy - Choice rules

The questions relating to choice rules were created for the purposes of the thesis. The questions relating to the type of rule were developed from the description of the rules by Hawkins, et al (1997).

D.4.7.1 Students use of decision-making choice rules - item response frequencies (C:5.5)

	Strongly disagree						Strongly agree						Mean
	1	%	2	%	3	%	4	%	5	%			
Compensatory choice rule	37	6.4	74	12.8	232	40.3	162	28.1	71	12.3	3.27		
Conjunctive choice rule	118	20.5	150	26.0	210	36.5	74	12.8	24	4.2	2.54		
Disjunctive choice rule	67	11.6	139	24.1	227	39.4	111	19.3	32	5.6	2.83		
Elimination by aspects	44	7.6	79	13.7	110	19.1	211	36.6	132	22.9	3.53		
Lexicographic choice rule	86	14.9	120	20.8	206	35.8	113	19.6	51	8.9	2.87		
Subcontracted choice rule	97	16.8	110	19.1	189	32.8	139	24.1	41	7.1	2.86		
Used the highest TER choice rule	182	31.6	114	19.8	98	17.0	115	20.0	67	11.6	2.60		

D.4.7.2 Students' use of decision-making choice rules analysed by their institution of choice

	<i>Sandstone University</i>		<i>Post War University</i>		<i>Flexible University</i>		<i>University of Technology</i>		<i>Metro Regional University</i>		<i>National Specialist University</i>		Sig
	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	
Compensatory choice rule	3.23	1.13	3.32	.98	3.28	1.14	3.29	1.02	3.17	.92	3.32	1.04	.948
Conjunctive choice rule	2.31	1.09	2.73	1.08	2.57	1.10	2.41	1.09	2.72	.87	2.55	1.14	.061
Disjunctive choice rule	2.71	1.16	2.81	1.05	2.80	1.03	2.90	1.07	2.88	.86	2.86	1.04	.635
Elimination by aspects	3.51	1.24	3.70	1.14	3.59	1.30	3.38	1.08	3.19	1.25	3.74	1.19	.057
Lexicographic choice rule	2.81	1.24	3.00	1.04	2.80	1.20	2.77	1.09	2.88	.96	2.93	1.40	.795
Subcontracted choice rule	3.05	1.12	2.85	1.12	2.67	1.21	3.07	1.17	2.88	1.14	2.56	1.25	.028
Used the highest TER choice rule	2.59	1.44	2.77	1.38	2.30	1.38	2.44	1.33	3.03	1.41	2.64	1.44	.036

ANOVA

D.5 Decision-making capability

Decision-making capability was hypothesised to consist of the variables subjective knowledge, subjective expertise, objective expertise, life optimism, self-esteem, locus of control, susceptibility to interpersonal influence, status aspiration, need for cognition and uncertainty orientation.

D.5.1 Students' subjective knowledge

A student's subjective knowledge is considered to be the level of belief the student has about their levels of knowledge in the decision-making domain. This was measured using the scale

developed by Edgett and Cullen (1992). The students' subjective expertise was measured using the scale developed by Celsi and Olson (1988).

D.5.1.1 Students' subjective knowledge of the information search process – item response frequencies (C: 4.1 22-26)

	<i>Strongly disagree</i>						<i>Strongly agree</i>				<i>Mean</i>
	1	%	2	%	3	%	4	%	5	%	
Knew exactly which information	39	6.8	121	21.0	174	30.2	150	26.0	92	16.0	3.23
I did not have enough time*	114	19.8	194	33.7	141	24.5	95	16.5	32	5.6	2.54
Used one or two important criteria*	71	12.3	171	29.7	142	24.7	149	25.9	43	7.5	2.86
Knew what was important	20	3.5	74	12.8	172	29.9	212	36.8	98	17.0	3.51
Knew where to get information	26	4.5	82	14.2	136	23.6	219	38.0	113	19.6	3.54

Standardised item alpha .4149, Starred items deleted from further analysis, new alpha standardised item alpha .7273 Composite variable generated with remaining items.

D.5.1.2 Students' perceptions of their knowledge of the information search process (subjective knowledge) analysed by institution of choice

	<i>Sandstone University</i>	<i>Post War University</i>	<i>Flexible University</i>	<i>University of Technology</i>	<i>Metro Regional University</i>	<i>National Specialist University</i>	<i>Total</i>
Mean	3.49	3.45	3.45	3.45	3.32	3.34	3.43
N	108	113	101	104	58	84	576
Std. Dev	.95	.89	.98	.88	1.01	.92	.93

ANOVA Sig .883

D.5.1.3 Students' belief in their expertise in the decision-making domain (Subjective expertise) – item response frequencies (C:4.1 34-37)

	<i>Strongly disagree</i>						<i>Strongly agree</i>				<i>Mean</i>
	1	%	2	%	3	%	4	%	5	%	
Clear about what is important	32	5.6	123	21.4	203	35.2	179	31.1	39	6.8	3.12
Familiar with Uni's	72	12.5	182	31.6	200	34.7	94	16.3	28	4.9	2.69
Know a lot about Uni	114	19.8	222	38.5	169	29.3	62	10.8	9	1.6	2.36
Relatively knowledgeable	115	20.0	170	29.5	201	34.9	73	12.7	17	3.0	2.49

Standardised item alpha .8083 Composite variable generated for further analysis.

D.5.1.4 Students' belief in their expertise in the decision-making domain (Subjective expertise) analysed by institution of choice

	<i>Sandstone University</i>	<i>Post War University</i>	<i>Flexible University</i>	<i>University of Technology</i>	<i>Metro Regional University</i>	<i>National Specialist University</i>	<i>Total</i>
Mean	2.87	2.75	2.62	2.79	2.60	2.83	2.76
N	108	113	101	104	58	84	576
Std. Dev	.89	.79	.84	.81	.85	.88	.84

ANOVA Sig .283

D.5.2 Students' levels of objective knowledge

Objective expertise is a composite variable determined by determining the correct answer to questions such as 'How many campuses does your institution have?' Objective knowledge items are subject specific and these were developed for the purpose. However, they were based on the work of Celsi and Olson (1988).

D.5.2.1 Students' levels of objective expertise – item response frequencies (C:3.7 – C:3.10)

	<i>Correctly identified</i>		<i>Incorrect</i>	
	Count	%	Count	%
Full name of faculty of enrollment	265	46.0	311	54.0
Length of semester	286	49.7	290	50.3
Number of campuses knowledge	79	13.7	497	86.3
Location of libraries	415	72.0	161	28.0

The correct answer was assigned a score of 1, the incorrect answer was assigned a score of 2. In the following table the number 4 represents a student who answered all four items correctly. The number 8 represents a student who answered all four questions incorrectly.

D.5.2.2 Objective expertise - item responses composite variable

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
4.00	21	3.6	3.6	3.6
5.00	118	20.5	20.5	24.1
6.00	215	37.3	37.3	61.5
7.00	177	30.7	30.7	92.2
8.00	45	7.8	7.8	100.0
Total	576	100.0	100.0	

The results were then reverse scored and assigned a figure from 1 to 5 to achieve a level of expertise. 1 was assigned as a low level of expertise, 5 as a high level of expertise. Thus, a score of 8 becomes a score of 1 – low level of expertise.

D.5.2.3 Students' objective expertise in the decision-making domain composite variable analysed by institution of choice

	<i>Sandstone University</i>	<i>Post War University</i>	<i>Flexible University</i>	<i>University of Technology</i>	<i>Metro Regional University</i>	<i>National Specialist University</i>	<i>Total</i>
Mean	2.77	3.10	2.90	2.10	2.83	3.32	2.81
N	108	113	101	104	58	84	576
Std. Dev	.93	.98	1.02	.66	.88	.81	.97

ANOVA Sig .000

D.5.3 Students' levels of self-confidence

Students' confidence was hypothesised to be comprised of their locus of control, self-esteem and life optimism. These scales were adapted from Rotter's Locus of Control (1966), Ethington's (1988) self-concept scale was used as a proxy for self-esteem, and the life optimism scale used was the revised Life Orientation Test by Scheier and Carver (1994).

D.5.3.1 Students' Locus of control - item response frequencies (C:2.1 13-22)

	<i>Strongly disagree</i>						<i>Strongly agree</i>						Mean
	1	%	2	%	3	%	4	%	5	%			
Hard work pays off _a	27	4.7	101	17.5	171	29.7	200	34.7	77	13.4	3.35		
Exam questions are unrelated _b	124	21.5	237	41.1	123	21.4	73	12.7	19	3.3	2.35		
Heredity is major determinant _b	134	23.3	141	24.5	174	30.2	98	17.0	29	5.0	2.56		
Life's experiences are major determinant _a	13	2.3	29	5.0	136	23.6	264	45.8	134	23.3	3.83		
No matter how hard you try _b	49	8.5	150	26.0	161	28.0	155	26.9	61	10.6	3.05		
People get the respect they deserve _a	45	7.8	101	17.5	175	30.4	160	27.8	95	16.5	3.28		
Preparation = no unfair tests _a	36	6.3	111	19.3	134	23.3	195	33.9	100	17.4	3.37		
Right place at the right time _b	27	4.7	127	22.0	204	35.4	166	28.8	52	9.0	3.15		
What will happen, will happen _b	18	3.1	91	15.8	239	41.5	165	28.6	63	10.9	3.28		
Trusting to fate doesn't work _a	26	4.5	86	14.9	220	38.2	174	30.2	70	12.2	3.31		

_a Internal locus of control

_b External locus of control

Internal locus of control standardised item alpha .3477. Scale excluded from further analysis.

External locus of control standardised item alpha .4183 Scale excluded from further analysis.

D.5.3.2 Students' levels of self esteem - item response frequencies (C:2.1 42-45)

	<i>Strongly disagree</i>						<i>Strongly agree</i>						Mean
	1	%	2	%	3	%	4	%	5	%			
I am a person of worth	9	1.56	30	5.21	112	19.44	226	39.24	199	34.55	4.00		
I am able to do things as well as others	2	0.35	29	5.03	118	20.49	262	45.49	165	28.65	3.97		
I am satisfied with myself	14	2.43	67	11.63	135	23.44	221	38.37	139	24.13	3.70		
Positive towards me	18	3.13	56	9.72	162	28.13	225	39.06	115	19.97	3.63		

Standardised item alpha .8371 Composite variable generated for further analysis.

D.5.3.3 Students' self-esteem composite variable analysed by institution of choice

	<i>Sandstone University</i>	<i>Post War University</i>	<i>Flexible University</i>	<i>University of Technology</i>	<i>Metro Regional University</i>	<i>National Specialist University</i>	<i>Total</i>
Mean	3.90	3.88	4.01	3.91	3.93	4.05	3.95
N	108	113	101	104	58	84	576
Std. Dev	.81	.83	.84	.80	.76	.84	.81

ANOVA Sig .605

D.5.3.4 Students level of life optimism item response frequencies (C:2.1 1-6)

	<i>Strongly disagree</i>						<i>Strongly agree</i>				<i>Mean</i>
	1	%	2	%	3	%	4	%	5	%	
Can go wrong – will _a	84	14.6	174	30.2	187	32.5	87	15.1	44	7.6	2.71
I do not expect things to go my way _a	119	20.7	206	35.8	167	29.0	66	11.5	18	3.1	2.41
Rarely count on good things _a	128	22.2	181	31.4	161	28.0	84	14.6	22	3.8	2.46
Expect the best	38	6.6	134	23.3	224	38.9	126	21.9	54	9.4	3.04
Optimistic about the future	18	3.1	74	12.8	182	31.6	211	36.6	91	15.8	3.49
More good things than bad	19	3.3	51	8.9	156	27.1	241	41.8	109	18.9	3.64

_a Pessimism items _b Optimism items

Pessimism standardised item alpha .7750 Composite scale generated.

Optimism standardised item alpha .5690 Composite scale generated.

D.5.3.5 Life optimism and pessimism composite variable analysed by institution of choice

	<i>Sandstone University</i>		<i>Post War University</i>		<i>Flexible University</i>		<i>University of Technology</i>		<i>Metro Regional University</i>		<i>National Specialist University</i>		<i>Sig</i>
	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	
Optimism	3.50	.81	3.30	.84	3.43	.84	3.33	.78	3.41	.70	3.48	.82	.458
Pessimism	2.35	.86	2.61	.97	2.50	.96	2.50	.94	2.63	.96	2.55	1.02	.338

ANOVA

D.5.4 Students' susceptibility to interpersonal influence

Students' susceptibility to interpersonal influence is defined as the students' overall "need to identify with or enhance one's image in the opinion of significant others" (Bearden, et al 1993 p 78). The scale proposed by Bearden consists of two dimensions: the informational dimension, in which the consumer seeks interpersonal information and the normative dimension, in which the consumer seeks social approval for the purchase behaviour.

D.5.4.1 Students' susceptibility to interpersonal influence - item response frequencies (C:1 1-12)

	<i>Strongly disagree</i>						<i>Strongly agree</i>						<i>Mean</i>
	1	%	2	%	3	%	4	%	5	%			
Ask others with experience ^a	31	5.4	58	10.1	138	24.0	248	43.1	101	17.5	3.57		
Consult others ^a	33	5.7	78	13.5	210	36.5	193	33.5	62	10.8	3.30		
Gather information from family and friends ^a	64	11.1	154	26.7	174	30.2	138	24.0	46	8.0	2.91		
Observe what others buy ^a	101	17.5	156	27.1	190	33.0	111	19.3	18	3.1	2.63		
Be like someone ^b	276	47.9	159	27.6	83	14.4	42	7.3	16	2.8	1.89		
Buy what others expect me to ^b	271	47.0	176	30.6	90	15.6	32	5.6	7	1.2	1.83		
Buy what others will approve ^b	219	38.0	182	31.6	111	19.3	53	9.2	11	1.9	2.05		
Buy what will impress ^b	191	33.2	158	27.4	129	22.4	76	13.2	22	3.8	2.27		
Get a sense of belonging ^b	290	50.3	159	27.6	87	15.1	35	6.1	5	0.9	1.80		
Identify with others ^b	239	41.5	197	34.2	91	15.8	45	7.8	4	0.7	1.92		
Important that others like ^b	209	36.3	184	31.9	123	21.4	46	8.0	14	2.4	2.08		
Rarely buy unless others approve ^b	315	54.7	150	26.0	77	13.4	24	4.2	10	1.7	1.72		

^a Information search dimension ^b Social approval dimension

Susceptibility to interpersonal influence - information search dimension standardised item alpha .7237, composite variable generated.

Susceptibility to interpersonal influence – social approval dimension standardised item alpha .8810, composite variable generated.

D.5.4.2 Students' susceptibility to interpersonal influence composite variable analysed by institution of choice

	<i>Sandstone University</i>		<i>Post War University</i>		<i>Flexible University</i>		<i>University of Technology</i>		<i>Metro Regional University</i>		<i>National Specialist University</i>		<i>Sig</i>
	<i>Mean</i>	<i>Std. Dev</i>	<i>Mean</i>	<i>Std. Dev</i>	<i>Mean</i>	<i>Std. Dev</i>	<i>Mean</i>	<i>Std. Dev</i>	<i>Mean</i>	<i>Std. Dev</i>	<i>Mean</i>	<i>Std. Dev</i>	
Social dimension	2.26	.91	2.03	.73	1.80	.83	1.97	.81	1.91	.84	1.92	.83	.003
Informational dimension	3.37	.92	3.00	.87	3.04	.94	3.11	.88	2.94	.98	2.79	.83	.001

ANOVA

D.5.5 Students' need for thinking

Students' need for cognition is defined as their need to engage in a thinking task. The measurement scale for this was adapted from Cacioppo and Petty (1982) short form scale. Only six of the 18 items used by Cacioppo and Petty are used in the final scale. Thus, they are not a direct measurement of need for cognition as proposed by the authors. However, the full scale was not considered necessary to the issues under consideration in this thesis.

D.5.5.1 Students' need for cognition item - response frequencies (C:1.2 7-12)

	<i>Strongly disagree</i>						<i>Strongly agree</i>				<i>Mean</i>
	1		2		3		4		5		
	<i>%</i>		<i>%</i>		<i>%</i>		<i>%</i>		<i>%</i>		
Prefer life's puzzles to solve*	48	8.3	148	25.7	209	36.3	138	24.0	33	5.7	2.93
Don't care how it works	242	42.0	194	33.7	84	14.6	39	6.8	17	3.0	1.95
Learning new ways to think doesn't excite me	254	44.1	189	32.8	72	12.5	51	8.9	10	1.7	1.91
Like things which require little thought	105	18.2	173	30.0	153	26.6	102	17.7	43	7.5	2.66
Only think as hard as I have to	131	22.7	174	30.2	115	20.0	108	18.8	48	8.3	2.60
Thinking is no fun	118	20.4	192	33.3	145	25.1	84	14.5	37	6.4	2.53

Standardised item alpha .6042 deleted starred item to increase alpha to .7856. Composite variable generated for further analysis. The scale developed was subsequently reverse coded so that 1 was low levels of need for cognition and 5 was high levels of need for cognition.

D.5.5.2 Students' need for cognition composite variable analysed by institution of choice

	<i>Sandstone University</i>	<i>Post War University</i>	<i>Flexible University</i>	<i>University of Technology</i>	<i>Metro Regional University</i>	<i>National Specialist University</i>	<i>Total</i>
Mean	2.30	2.36	2.17	2.34	2.50	2.32	2.33
N	108	113	101	104	58	84	576
Std. Deviation	.88	.87	.87	.87	.90	.93	.89

ANOVA Sig .223

D.5.6 Students' work ethic

Students' work ethic was measured using the scale of Lynn, Hampson and Magee (1983).

D.5.6.1 Students' work ethic - item response frequencies (C:2.1 30-35)

	<i>Strongly disagree</i>						<i>Strongly agree</i>				<i>Mean</i>
	1		2		3		4		5		
	<i>%</i>		<i>%</i>		<i>%</i>		<i>%</i>		<i>%</i>		
Hard work is something I like to avoid	112	19.4	200	34.7	157	27.3	84	14.6	23	4.0	2.53
I do as little as I can get away with	133	23.1	179	31.1	126	21.9	103	17.9	35	6.1	2.34
I am basically lazy	190	33.0	143	24.8	131	22.7	80	13.9	32	5.6	2.27
Most important thing is the pay	184	31.9	174	30.2	121	21.0	71	12.3	26	4.5	2.39
Not work if I had money	177	30.7	172	29.9	101	17.5	78	13.5	48	8.3	2.27
Not worry about the details	147	25.5	232	40.3	110	19.1	70	12.2	17	3.0	2.49

Scale reliability .7485, composite variable generated. The items were reverse coded in order to ensure that 1 = low level of work ethic and 5 indicated a high level of work ethic.

D.5.6.2 Students' work ethic composite variable analysed by institution of choice

	<i>Sandstone University</i>	<i>Post War University</i>	<i>Flexible University</i>	<i>University of Technology</i>	<i>Metro Regional University</i>	<i>National Specialist University</i>	<i>Total</i>
Mean	2.50	2.57	2.29	2.54	2.51	2.21	2.44
N	108	113	101	104	58	84	576
Std. Dev	.79	.86	.91	.84	.82	.72	.84

ANOVA Sig .022

D.5.7 Students' uncertainty orientation

Students' uncertainty orientation is defined as their ability to tolerate an uncertain decision-making environment. The scale used for measuring the students' tolerance for uncertainty in the decision-making environment is Smith and Bristor's (1994) uncertainty orientation scale.

D.5.7.1 Students' uncertainty orientation - item response frequencies (C:2.1 23-27)

	<i>Strongly disagree</i>				<i>Strongly agree</i>				<i>Mean</i>		
	1	%	2	%	3	%	4	%		5	%
Challenge our beliefs	16	2.8	14	2.4	103	17.9	276	47.9	167	29.0	3.98
Challenge view of the world	9	1.6	50	8.7	137	23.8	236	41.0	144	25.0	3.79
Discover things	10	1.7	42	7.3	136	23.6	228	39.6	160	27.8	3.84
Experiment to find out	8	1.4	58	10.1	151	26.2	260	45.1	99	17.2	3.67
Find out if I do not know	2	0.3	29	5.0	125	21.7	255	44.3	165	28.6	3.96
Find out why	13	2.3	39	6.8	109	18.9	236	41.0	179	31.1	3.92
Like learning new things	8	1.4	48	8.3	189	32.8	219	38.0	112	19.4	3.66

Standardised item alpha .8522, composite variable generated.

D.5.7.2 Students' uncertainty orientation analysed by institution of choice

	<i>Sandstone University</i>	<i>Post War University</i>	<i>Flexible University</i>	<i>University of Technology</i>	<i>Metro Regional University</i>	<i>National Specialist University</i>	<i>Total</i>
Mean	3.91	3.84	3.85	3.80	3.69	3.84	3.83
N	108	113	101	104	58	84	576
Std. Dev	.68	.63	.75	.63	.73	.72	.68

ANOVA Sig .632

D.6 Demographics of the students who responded to the survey

D.6.1 Students' travel distance to university (C:6.1)

The students nominated the distance they travelled to university. These results were collated into five categories of distance.

D.6.1.1 Students' distance travelled to university categories – frequencies

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
0-15k	268	46.5	46.5	46.5
16-30k	121	21.0	21.0	67.5
31-45k	45	7.8	7.8	75.3
46-60k	15	2.6	2.6	78.0
Greater than 60k or distance education	127	22.0	22.0	100.0
Total	576	100.0	100.0	

D.6.1.2 Students' distance travelled to university analysed by institution of choice

	<i>Sandstone University</i>	<i>Post War University</i>	<i>Flexible University</i>	<i>University of Technology</i>	<i>Metro Regional University</i>	<i>National Specialist University</i>
Mean	1.88	2.52	3.23	1.96	2.05	2.08
N	108	113	101	104	58	84
Std. Dev	1.32	1.65	1.82	1.37	1.32	1.42

ANOVA Sig .000

D.6.2 Students' form of transport (C:6.2)

Students were asked to nominate form of transport to university. These were categorised into the following categories.

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
Car	224	38.9	38.9	38.9
Bus	27	4.7	4.7	43.6
Bicycle	7	1.2	1.2	44.8
Motorbike	2	.3	.3	45.1
Train	56	9.7	9.7	54.9
Tram	21	3.6	3.6	58.5
Combination	131	22.7	22.7	81.3
Walk	68	11.8	11.8	93.1
Mail	37	6.4	6.4	99.5
Internet	2	.3	.3	99.8
Plane	1	.2	.2	100.0
Total	576	100.0	100.0	

D.6.2.1 Student's nominated form of transport analysed by their institution of choice

	<i>Sandstone University</i>		<i>Post War University</i>		<i>Flexible University</i>		<i>University of Technology</i>		<i>Metro Regional University</i>		<i>National Specialist University</i>	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Car	9	8.3	39	34.5	44	43.6	39	37.5	32	55.2	58	69.0
Bus	7	6.5	4	3.5	4	4.0			2	3.4	10	11.9
Bicycle	4	3.7					1	1.0	2	3.4		
Motorbike	1	.9			1	1.0						
Train	16	14.8	13	11.5	4	4.0	21	20.2	1	1.7		
Tram	9	8.3	2	1.8	2	2.0	5	4.8	2	3.4	1	1.2
Combination	41	38.0	28	24.8	11	10.9	23	22.1	11	19.0	14	16.7
Walk	21	19.4	18	15.9	10	9.9	11	10.6	7	12.1	1	1.2
Mail			7	6.2	24	23.8	4	3.8	1	1.7		
Internet			1	.9	1	1.0						
Plane			1	.9								

ANOVA Sig .000

D.6.3 Gender of the students (C:6.3)

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
Male	199	34.5	34.5	34.5
Female	377	65.5	65.5	100.0
Total	576	100.0	100.0	

D.6.3.1 Students' Gender analysed by their institution of choice

	<i>Sandstone University</i>		<i>Post War University</i>		<i>Flexible University</i>		<i>University of Technology</i>		<i>Metro Regional University</i>		<i>National Specialist University</i>	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Male	46	42.6	41	36.3	31	30.7	31	29.8	29	50.0	17	20.2
Female	62	57.4	72	63.7	70	69.3	73	70.2	29	50.0	67	79.8

ANOVA Sig .003

This result is indicative of the enrolment profile of the institution and the type of course being offered.

D.6.4 Age of the student (C:6.4)

Students were asked to nominate their age. The responses were assigned to one of the following categories of age.

D.6.4.1 Age of student – categorised frequencies

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
16 to17	23	4.0	4.0	4.0
18 to 21	398	69.1	69.1	73.1
22 to 30	85	14.8	14.8	87.8
31 to 40	44	7.6	7.6	95.5
41 to 65	26	4.5	4.5	100.0
Total	576	100.0	100.0	

D.6.4.2 Age of student analysed by institution of choice

	<i>Sandstone University</i>		<i>Post War University</i>		<i>Flexible University</i>		<i>University of Technology</i>		<i>Metro Regional University</i>		<i>National Specialist University</i>	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
16 to17	8	7.4	5	4.4	1	1.0	4	3.8	5	8.6	68	81.0
18 to 21	92	85.2	81	71.7	53	52.5	56	53.8	44	75.9	6	7.1
22 to 30	4	3.7	14	12.4	30	29.7	22	21.2	6	10.3	7	8.3
31 to 40	1	.9	8	7.1	12	11.9	15	14.4	1	1.7		
41 to 65	3	2.8	5	4.4	5	5.0	7	6.7	2	3.4	3	3.6

ANOVA Significant .003

D.6.5 Students' socio-economic status

D6.5.1 The levels of educational achievement of students and their parents (C:6.5)

	<i>Education of father</i>		<i>Education of mother</i>		<i>Education of respondent</i>	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
1 Primary	41	7.1	33	5.7	7	1.2
2 Some secondary	141	24.5	164	28.5	409	71.0
3 Completed secondary	93	16.1	109	18.9	101	17.5
4 Vocational	102	17.7	112	19.4	49	8.5
5 University	123	21.4	112	19.4	8	1.4
6 Higher degree	53	9.2	26	4.5	2	.3
0 Don't know*	23	4.0	20	3.5		
Total	576	100.0	576	100.0	576	100.0

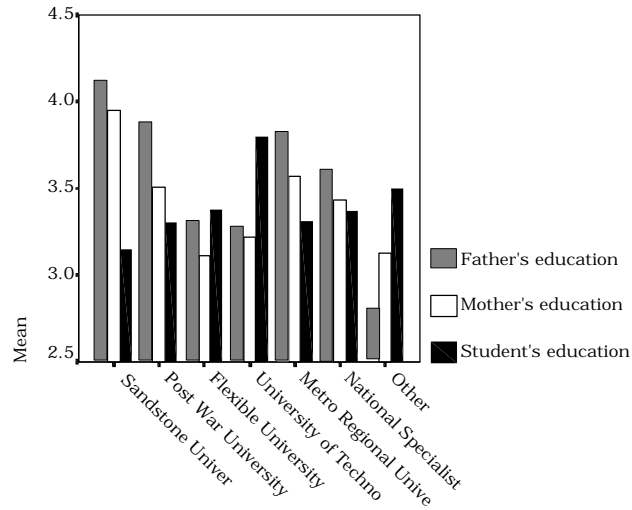
*Coded as zero to prevent inflation of means

D.6.5.2 Educational achievement of students and their parents analysed by institution of choice

	<i>Education of</i>	<i>Primary</i>		<i>Some Secondary</i>		<i>Complete Secondary</i>		<i>Vocational</i>		<i>University</i>		<i>Higher Degree</i>		<i>Don't know</i>	
		Cou	%	Cou	%	Cou	%	Cou	%	Cou	%	Cou	%	Cou	%
Sandstone University	Mother	2	1.9	16	14.8	22	20.4	24	22.2	35	32.4	7	6.5	2	1.9
	Father	4	3.7	15	13.9	15	13.9	19	17.6	41	38.0	13	12.0	1	.9
	Student					98	90.7	4	3.7	6	5.6				
Post War University	Mother	9	8.0	32	28.3	21	18.6	18	15.9	18	15.9	7	6.2	8	7.1
	Father	10	8.8	21	18.6	15	13.3	23	20.4	24	21.2	11	9.7	9	8.0
	Student					89	78.8	15	13.3	8	7.1	1	.9		
Flexible University	Mother	8	7.9	34	33.7	25	24.8	14	13.9	15	14.9	3	3.0	2	2.0
	Father	8	7.9	35	34.7	17	16.8	17	16.8	13	12.9	8	7.9	3	3.0
	Student			3	3.0	60	59.4	35	34.7	3	3.0				
University of Technology	Mother	9	8.7	28	26.9	24	23.1	21	20.2	19	18.3	2	1.9	1	1.0
	Father	12	11.5	24	23.1	24	23.1	20	19.2	15	14.4	8	7.7	1	1.0
	Student			1	1.0	55	52.9	21	20.2	19	18.3	7	6.7	1	1.0
Metro Regional University	Mother	3	5.2	17	29.3	9	15.5	13	22.4	9	15.5	3	5.2	4	6.9
	Father	3	5.2	16	27.6	8	13.8	6	10.3	16	27.6	5	8.6	4	6.9
	Student			2	3.4	42	72.4	8	13.8	6	10.3				
National Specialist University	Mother			35	41.7	7	8.3	21	25.0	15	17.9	4	4.8	2	2.4
	Father	3	3.6	26	31.0	12	14.3	17	20.2	14	16.7	8	9.5	4	4.8
	Student			1	1.2	61	72.6	14	16.7	7	8.3			1	1.2

Education of mother ANOVA Sig .000. Education of father ANOVA Sig .002. Education of student ANOVA Sig .000.

The data in the above table have been plotted in a bar chart to enable effective interpretation.



ENROL Institutions enrolled in

Figure D-1: Education of family analysed by institution of choice

D.6.5.3 The occupations of students' parents (C:6.6)

	<i>Mother's occupation</i>		<i>Father's Occupation</i>	
	Frequency	Percent	Frequency	Percent
Labourer	25	4.3	34	5.9
Clerical	59	10.2	14	2.4
Plant operator	6	1.0	12	2.1
Sales	41	7.1	26	4.5
Other	172	29.9	88	15.3
Trades	9	1.6	68	11.8
Para professional	112	19.4	22	3.8
Manager / admin	59	10.2	177	30.7
Professional	93	16.1	135	23.4
Total	576	100.0	576	100.0

D.6.5.4 Occupation of students' parents analysed by institution of choice

	<i>Sandstone University</i>				<i>Post War University</i>				<i>Flexible University</i>			
	<i>Father</i>		<i>Mother</i>		<i>Father</i>		<i>Mother</i>		<i>Father</i>		<i>Mother</i>	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Labourer	4	3.7	5	4.6	6	5.3	8	7.1	9	8.9	4	4.0
Clerical	2	1.9	6	5.6	1	.9	10	8.8	2	2.0	11	10.9
Plant operator	1	.9			3	2.7	2	1.8	2	2.0		
Sales	1	.9	3	2.8	4	3.5	10	8.8	7	6.9	9	8.9
Other	15	13.9	19	17.6	15	13.3	35	31.0	16	15.8	39	38.6
Trades	7	6.5	1	.9	17	15.0	6	5.3	13	12.9		
Para professional	2	1.9	20	18.5	7	6.2	22	19.5	3	3.0	14	13.9
Manager / admin	34	31.5	16	14.8	28	24.8	7	6.2	36	35.6	14	13.9
Professional	42	38.9	38	35.2	32	28.3	13	11.5	13	12.9	10	9.9

D6.5.4a Occupation of students' parents analysed by institution of choice (Part two)

	<i>University of Technology</i>				<i>Metro Regional University</i>				<i>National Specialist University</i>			
	<i>Father</i>		<i>Mother</i>		<i>Father</i>		<i>Mother</i>		<i>Father</i>		<i>Mother</i>	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Labourer	7	6.7	2	1.9	3	5.2	3	5.2	5	6.0	3	3.6
Clerical	3	2.9	9	8.7	4	6.9	6	10.3	2	2.4	17	20.2
Plant operator	3	2.9	1	1.0	3	5.2	3	5.2	1	1.2		
Sales	5	4.8	10	9.6	1	1.7	3	5.2	8	9.5	6	7.1
Other	12	11.5	41	39.4	12	20.7	15	25.9	15	17.9	19	22.6
Trades	12	11.5	2	1.9	5	8.6			13	15.5		
Para professional	8	7.7	18	17.3			14	24.1	1	1.2	20	23.8
Manager / admin	33	31.7	7	6.7	20	34.5	8	13.8	23	27.4	7	8.3
Professional	21	20.2	14	13.5	10	17.2	6	10.3	16	19.0	12	14.3

ANOVA Mother's occupation Sig .000. Father's occupation Sig .006

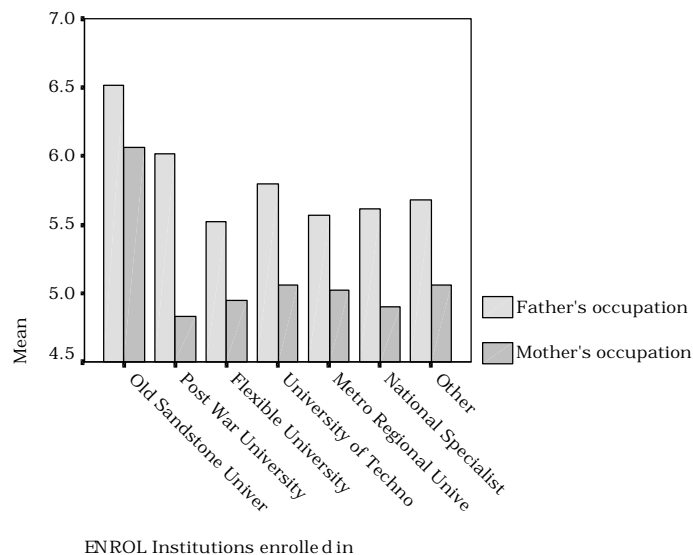


Figure D-2: Occupations of parents analysed by institution of choice

D.6.5.5 Students' family income (C:6.8)

Student responses were categorised into the following groups. This grouping was determined by using the Australian mean average income of \$38,000 as the mid-point in the range of income.

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
Less than \$25,000	54	9.4	9.4	9.4
\$25,999 to 37,000	32	5.6	5.6	14.9
\$37,001 to \$40,000	408	70.8	70.8	85.8
\$40,001 to 55,000	32	5.6	5.6	91.3
More than \$55,000	50	8.7	8.7	100.0
Total	576	100.0	100.0	

D.6.5.6 Index of students' socioeconomic status

A socioeconomic status index was generated using the variables: *occupation* of mother and father, *education* of mother and father, and family *income*. Students were assigned to one of the following categories.

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
Low	17	3.0	3.0	3.0
Below average	111	19.3	19.3	22.2
Average	237	41.1	41.1	63.4
Above average	173	30.0	30.0	93.4
High	38	6.6	6.6	100.0
Total	576	100.0	100.0	

The technique used was to rank *occupation* by status assigned to each position using the Australian Bureau of Statistics Social Indicators data (1995). The next step involved ranking the *education* of parents by their respective level of achievement. The final step in the ranking process entailed the ranking of income into groups based on the median Australian income level of \$38,000; above average if it was over \$45,000. \$38,000 is median average Australian income (Australian Bureau of Statistics 2000). The three variables were then used to generate an additive composite variable. The final stage in the process of generating the socioeconomic status index was to create five categories of socioeconomic status based on percentiles of the additive composite.

D.6.5.7 Students' socioeconomic status composite variable analysed by institution of choice

	<i>Sandstone University</i>	<i>Post War University</i>	<i>Flexible University</i>	<i>University of Technology</i>	<i>Metro Regional University</i>	<i>National Specialist University</i>	<i>Total</i>
Mean	3.55	3.17	2.93	3.15	3.14	3.10	3.18
N	108	113	101	104	58	84	576
Std. Dev	.87	.93	.92	.91	.93	.84	.92

ANOVA Sig .000

D.6.6 Type of student attending institutions (C:6.7)

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
International	60	10.4	10.4	10.4
Aust-Full fee paying	32	5.6	5.6	16.0
Aust - HECS upfront	99	17.2	17.2	33.2
Aust HECS deferred	364	63.2	63.2	96.4
Other	21	3.6	3.6	100.0
Total	576	100.0	100.0	

D.6.6.1 Type of student analysed by institution of choice

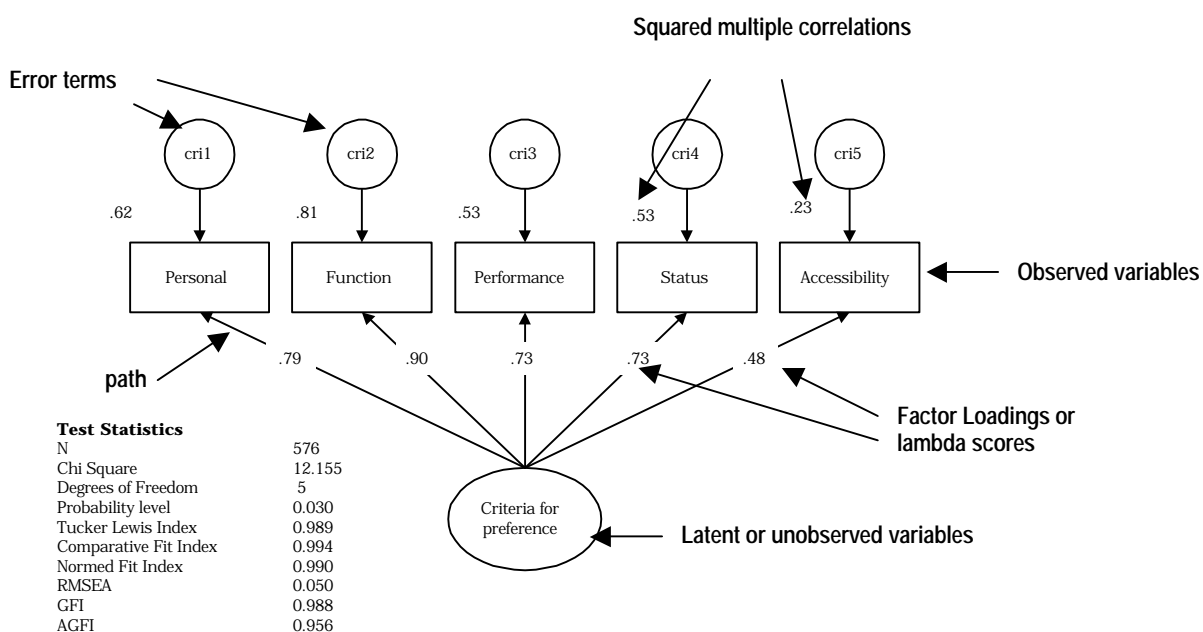
	<i>Sandstone University</i>		<i>Post War University</i>		<i>Flexible University</i>		<i>University of Technology</i>		<i>Metro Regional University</i>		<i>National Specialist University</i>	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
International	15	13.9	17	15.0	12	11.9	8	7.7	6	10.3		
Aust-Full fee paying	6	5.6	2	1.8	3	3.0	17	16.3	1	1.7	3	3.6
Aust - HECS upfront	22	20.4	18	15.9	26	25.7	16	15.4	6	10.3	10	11.9
Aust HECS deferred	58	53.7	71	62.8	58	57.4	57	54.8	44	75.9	71	84.5
Other	7	6.5	5	4.4	2	2.0	6	5.8	1	1.7		

ANOVA Sig .016

E Appendix Reading AMOS output

Reading AMOS output requires a consideration of the principles of latent variable or causal modelling. The following is generated from a wide variety of sources. However, the major source used to develop this Appendix is Holmes-Smith and Rowe (1994).

AMOS produces diagrams such as that included below. The ovals represent the latent or unobserved variables. The rectangles represent the observed or indicator variables. The circles represent the error terms associated with each variable. The arrows indicate the relationship between the variables. This often called a path diagram.



1. Latent (unobserved variables) have no scale, thus a scale is usually assigned to be the same as one of the observed variables by assigning the parameter as one in the path diagram.
2. The figures represent parameters which are estimated by the program. These can be constrained to any number and in complex diagrams are often constrained to the estimates generated by factor analysis.
3. The 2-step process recommends fixing variables using single factor analysis before inputting into a structural equations modelling
4. Endogenous variables have arrows leading out of them (eg criteria for preference is an endogenous variable)
5. Exogenous variables have arrows leading into them

6. Conventionally, AMOS accepts entirely endogenous models
7. Chi square figures are ideally close to zero; however, in samples over 200, this may not be possible
8. Probability levels should be greater than 0.05; however, large samples may have lower probabilities
9. Degrees of Freedom should be at least one
10. Ideally, a model should take less than 20 iterations to run
11. The variance is scale dependent; thus scales that are different sizes will produce a high degree of variance. Scales should, therefore, be the same size.
12. The critical ratio (t-value) should be greater than 1.96 or less than -1.96 . The absolute value is important.
13. The standardised regression weights are the parameter estimates (lambda). Lambda is the factor score line between the endogenous variables and their indicators.
14. The squared multiple correlations are similar to item reliability in classical test theory. If the value is less than 0.30, then less than 30% of the variance is explained by that variable. Some circumstances might allow for lower levels of variance than this figure.
15. Factor score weights give the weight of impact of each variable on the endogenous variables.
16. RMR is the root mean residual and the result should be less than 0.05
17. GFI is the goodness of fit index and the result should be greater than 0.95
18. AGFI is the adjusted goodness of fit index and the result should be greater than 0.95
19. DELTA1, RHO1, and DELTA2 should be greater than 0.95
20. TLI is the Tucker Lewis Index, this should be close to but not greater than one
21. CFI is the comparative fit index and is equal to the Peter Bentler test in EQS (software package)
22. RMSEA is the root square mean error of approximation and should be less than 0.05
23. CAIC is a measure of parsimony and will decline with you add parameters. The closer to zero the better
24. Offending estimates (unacceptable results) are: negative error variances, non significant error variances, standardised coefficients (factors scores) exceeding one (or equal to one if previously un-estimated), large standard errors



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Title:

How prospective students choose universities: a buyer behaviour perspective

Date:

2001

Citation:

Brennan, L. (2001). How prospective students choose universities: a buyer behaviour perspective, PhD thesis, Centre for the Study of Higher Education, The University of Melbourne.

Publication Status:

Unpublished

Persistent Link:

<http://hdl.handle.net/11343/39537>

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