Post-choice satisfaction of international postgraduate students from Asia studying in Victorian Universities

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ABSTRACT

This research examines the relative customer satisfaction or dissatisfaction (CS/D) of international post-graduate students from Asia with the university as a study destination. The investigation is guided by the main research question: *Are there differences in the level of customer satisfaction and dissatisfaction between international postgraduate students from Asia studying in Victorian universities?* A conceptual model of post-choice satisfaction is developed and tested to support the analysis of four groups of students from China, India, Indonesia and Thailand studying in five universities in Victoria: Deakin University, La Trobe University, Swinburne University of Technology, The University of Melbourne and Victoria University of Technology.

The research comprised two interrelated studies: a qualitative investigation, and a quantitative study. The qualitative study included a literature review and an exploratory study, which consisted of focus groups and depth interviews, and the development of the preliminary model of post-choice satisfaction. The analysis of this stage resulted in the identification of 36 variables influencing post-choice satisfaction of students, which were operationalised in a survey questionnaire based on the seminal expectancy disconfirmation paradigm and the SERVQUAL instrument. A final model of post-choice satisfaction was developed following the preliminary analysis of the qualitative data, and tested at the quantitative stage of the study. During this stage, the total variables included in the model were reduced to 26 variables within four composite constructs that were used to measure CS/D supplemented by the testing of eleven hypotheses using multiple techniques.

The results showed that there were differences in the level of satisfaction between student groups and universities. In terms of the overall satisfaction, there were significant differences in the number of satisfied students, with students from India recording the lowest satisfaction levels followed by students from Thailand, Indonesia and China. The tests of significance indicated that *education standards and facilities (UNISAT1),*

customer value and study outcomes (UNISAT3), and image, prestige and recognition (UNISAT4), were the most dominant factors in influencing post-choice satisfaction among student groups. Among the classificatory variables, age and semester were the most significant in explaining the variances in the satisfaction levels of students. High student expectations, the strength of student-lecturer relationship, the perceived role of lecturers, university bureaucracy, lack of student friendly policies, passive complaining behaviour and the lack of opportunities for industry experience were among the key findings of the study, which were directly related to the student satisfaction formation process.

The thesis makes a contribution to knowledge by developing a conceptual model of post-choice satisfaction, cross national comparison of post-choice decision making behaviour of international postgraduate students, the use of triangulation methodology to ensure rigour in research and particularly the use of ratio scores in addition to weighted average gap scores to measure satisfaction.

At a practical level, the major findings of this research provide greater insight into the post-choice decision-making process of postgraduate international students, which would enable Australian universities to devise appropriate strategies to enhance their attractiveness and competitiveness in a highly globalised industry. Several limitations of the research are identified and suggestions for future research including more longitudinal studies to improve the validity of the research and the findings are presented.

Table of Contents

List of Tables

Chapter 6

List of Figures

List of abbreviations

AEI	Australian Education International
ANOVA	Analysis of variance
CS/D	Customer Satisfaction and Dissatisfaction
DETYA	Department of Employment, Education, Training and Youth Affairs
EBM Model	The Consumer behaviour model developed by Engel, Blackwell and Miniard
ELICOS	English Language Instruction Courses for Overseas Students
IDP	EDP Education Australia Pty Ltd
SERVQUAL	An instrument developed by Parasuraman et al (1988) to measure service quality
UNESCO	United Nations Educational Scientific and Cultural Oranisation
UNISAT	University Satisfaction. Used to identify four composite constructs resulting from factor analysis.

Declaration of originality

The work presented in this thesis is original and it contains no material previously written or published, except where due credits are given. To the best of my knowledge, none of the material has been submitted for a degree at any other university.

Rodney Arambewela

Publications associated with this thesis

Arambewela, R., and Hall, J., 2001. Post-choice satisfaction of postgraduate students from Asia., Refereed Paper, Conference proceedings, **ANZMAC, Auckland,** 1-5 December.

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Chapter 1

Introduction and Background

1.1 Introduction

This study focuses on the post-choice decision making process of international post-graduate students from Asia studying at Victorian universities. More specifically it investigates the relative customer satisfaction or dissatisfaction (CS/D), of international post-graduate students from China, India, Indonesia, and Thailand with the university as a study destination. In this study, university education is viewed as a high involvement professional service, with international students representing customers and universities being the service providers (Coaldrake, 2001; Guolla, 1999; Houston and Rees, 1999).

The main theme of the study is international education at university level, and it brings together other fields of study such as marketing, economics and consumer behaviour including cross-cultural analysis.

This chapter will discuss the background to the study, present the rationale for the research including the research problem and questions, and outline the structure of the thesis.

1.2. Background

University education, the world over, has undergone significant transformation and reform with respect to higher education systems meeting the growing role of information and communication revolution, and the demand for knowledge, which represent the new challenges of globalisation (Salmi, 2001; Marginson, 1998). These challenges are seen as threats as well as opportunities for higher education systems around the world. Drucker (1997) has boldly predicted the demise of *"traditional universities"* with the growth of open and online universities. The extent to which

these new learning institutions would impact on campus based teaching and learning is yet to be seen. This challenge, however, has produced significant changes in the way that higher educational institutions operate. These changes include the emergence of new types of institutions, patterns of financing and governance, curriculum reforms, and technological innovations (Salmi, 2001).

1.2.1. Postgraduate students as customers

This thesis examines postgraduate students as *customers*, which is compatible with the measurement criterion of customer satisfaction. The argument is based on the nature of the relationship that is developed between students and the university in the educational product/service exchange process. In marketing literature the customer is defined as "anyone who might conceivably buy or consume a given product or service" (Kotler, Fitzroy and Shaw, 1980). This thesis considers postgraduate education as a professional service, and students as the recipients or customers of the service who expect universities to satisfy their needs following the *service-recipient* paradigm (Havarnek and Brodwin, 1998).

The treatment of postgraduate students as *customers* can be further substantiated by the stakeholder point of view. The thesis emphasises postgraduate students as one of the stakeholders of the universities who have an interest in the institution and where the institution has the responsibility to satisfy the needs and expectations of every stakeholder (Houston and Rees, 1999). Furthermore, with the emphasis placed on the interrelated concepts of customer value and customer satisfaction and given that postgraduate education is a highly valued service, students become one of the key targets of the universities to deliver value in their services like any other stakeholder or customer such as the government or the community (Guolla, 1999). As an outcome of the post-consumption process, it is expected that the highly satisfied students would engage in positive word of mouth (WOM) communication such as recommending the university or course to a friend or relative or from a broader perspective would continue to be patrons of the university by returning for further studies, recruiting prospective students or becoming a pro-active alumni (Guolla, 1999). This behaviour is generally expected from satisfied *customers*.

Researchers (Houston and Rees, 1999; Guolla, 1999; Sirvanci, 1996, Armstrong, 1995; Lindsay, 1993) have however argued that the role of students is subject to change depending on the nature of relationship between students and the university. Different roles such as students as *customers, clients, producers* and *products* have been discussed in the literature based on these relationships, which are acknowledged to be very complex. Sirvanci, (1996) states that because students do not normally pay a full price for the service and are subject to assessments of merit and eligibility unlike a normal customer, they cannot fit into the classical understanding of a customer. It can be argued that these circumstances may be true for local students but international students who pay full fees for their education would need to be looked at differently. Sirvanci (1996) also expresses a contradictory view to the statement above when he points out that university students could fall into the category of *customers* because they are guided and controlled as recipients of educational services. His assertion is based on the university relationship with undergraduate students, but it may be argued that the relationship between the university and postgraduate students is similar though the guidance and the control could be relatively less compared to undergraduate students.

Houston and Rees (1999), on the other hand, claim that at the postgraduate level the relationship between university and students changes as students at that level assume dual roles: as *co-producers* (of research for a third party, which is more aligned with the role of an *external customer/supplier* and as *customers* of the services provided by the university. Guolla (1999) sees another role for students as *clients* based on the relationship where they receive services from qualified education professionals similar to other professionals like a medical doctor or a dentist and that they are dependant on the expert advice of these professionals. As *clients* of the university, students expect to be "intellectually improved" by the instructors with academic achievements as a measure of success. This is similar to the "personal improvement" in the case of other professional outcomes.

The role of students is also interpreted in the form of *products* that are marketable to potential employers who "purchase" the package of benefits offered by students. This role is closely linked with the students' role as *clients* where the main concern would

be the process while in the role of students as *products*, the concern will be on the final outcome (Guolla, 1999).

Despite varied interpretations of the relationships, there appears to be a consensus of opinion among researchers that the students' role as *customers* is more realistic when satisfaction is used as a measurement criterion. From a marketing perspective students assume a role as *customers* since satisfaction with an educational service is one outcome of the exchange between instructors and students. This is based on the assumption that the role of the student differs when student achievement becomes a criterion variable. Furthermore the satisfaction variable becomes a suitable criterion when students are treated as *customers* and as a result the concept of satisfaction is seen in the proper context (Guolla, 1999). For example, there is greater clarity in the concept of satisfaction when students are considered as *customers* because satisfaction reflects the outcome of the relationship between students and their instructors. Another argument for treating students as *customers* is that the institution's concern for satisfaction could encourage instructors to continually improve teaching and as Guolla (1999, p.6) states *"students as customers allows an instructor to perform diagnostic research to improve teaching"*. It is further justified on the basis that postgraduate students usually have had prior experience in a university service environment and therefore are able to evaluate an educational service.

1.2.2. Internationalisation of Higher Education

The internationalisation of higher education is a manifestation of globalisation, a phenomenon influencing almost every industry in the contemporary world economy (Jolley, 1997). It is the process of integrating an international and inter-cultural dimension into the teaching, research and service of the institution (Knight, 1995). The driving force of globalisation is competition and the international education market has become fiercely competitive with different marketing strategies being implemented by service providers to attract the growing number of students seeking higher education. This process will continue to have a profound impact on the management of universities and the training of students, resulting in transformation and reform within institutions to maintain competitive positioning. It is evident that with education being an intangible, high professional service, universities, in their

pursuit of competitive advantage, need to understand the special problems associated with the marketing of its services (Mazzarol, 1998).

Internationalisation of higher education is not a recent phenomenon. Countries in the Middle East and Asia had adequate infrastructure to cater for international students more than two millennia ago (Gatfield, 1997). The practice of following scholars for specific knowledge continued since the first universities were established in India around 600 BC (Altbach *et al*, 1993). Though the numbers were limited, such mobility and exchange of students between countries could be considered precursors to the modern concept of international education.

There are diverse views in regard to the internationalisation process of education. Mazzarol (1999) claims that the 1980s were the watershed for the internationalisation of education throughout the world and that this process was supported by reforming university programs based on commercial interests to source additional funding. Kemp (1990), however, says that the number of students studying outside their home countries doubled between 1950 and 1980, asserting that the process commenced much earlier. The inclusion of 1980 as a benchmark for commercialisation of education appears to be misleading because the major increase occurred between 1970 and 1990, when student numbers increased from 373,935 to over 1.5 million (UNESCO, 1995). In the early period before the 1950s, universities and other educational institutions in the United States, United Kingdom, Canada, France and Germany were the study destinations for the majority of international students. The educational services of these countries were actively promoted with special packages and scholarship programs. For example, the universities in Britain embarked on a well-coordinated marketing campaign through the British Council to attract foreign students, offering special assistance to countries such as Hong Kong and Malaysia (Moore, 1989; Williams, 1987).

The concept of internationalisation in Australian universities came to fruition only after the Second World War. Until this stage, the international dimension was largely based on an outward flow of Australian scholars either to the United Kingdom or North America for higher degrees or study leave with little or no reciprocity (Back *et. al*, 1996). While the need for an international perspective for the Australian Higher

Education system was identified with the establishment of the University of Sydney in 1851, no significant move towards internationalisation took place until the launch of the Colombo Plan for Cooperative Development in South and South East Asia in July 1951 (Back *et. al*, 1996). A major element of the plan was direct sponsorship of overseas students to study in Australian universities. This initiative was a result of a series of foreign policy changes in the West, in the light of the developments in the global economic and political landscape following the Second World War. The key developments included the demise of colonialism and the emergence of independent developing nations, growth of world trade and the need for greater goodwill and assistance towards the developing nations on issues concerning social and economic development (*Back et. al*, 1996).

Australia's late entry into international education has offered both opportunities and challenges. It has provided, the tertiary sector with increasing student numbers, significant economic benefits, international goodwill and recognition of Australia as a study destination. However, global competition and changing demands in the higher education market has presented Australia with many challenges associated with attracting international students. There is a concerted effort by the government and individual educational institutions to promote Australian education offshore in an acknowledgment of the significant economic, political, social and cultural benefits accrued through the internationalisation process. This is also supported by an increasing focus on the internationalisation of education as a key objective of university strategic plans.

These trends have given additional impetus to industry rivalry spurred by greater autonomy at an institutional level with regard to the internationalisation process. Higher educational institutions have been given a free hand in decisions regarding target markets, program design and pricing. With cutbacks on federal government funding, institutions are paying greater attention to international student programs as an additional source of revenue (Mazzarol, 1999).

It is estimated that by 2010, the global demand for higher education will more than double to 97 million people seeking courses, rising from 48 million in 1990 (UNESCO, 1998). The demand in Asia is expected to grow from 17 million to 45

million in the same period. Most of the countries in the world will not be able to absorb the increasing number of prospective students in their local institutions and invariably the demand for international education will continue to rise. The figures above indicate the market potential for international students and the growing demand for university places. It is clear that the process of meeting the growing demand for university places requires additional resources and facilities, changes in curriculum, study programs, teaching practices, together with marketing campaigns to attract international students. A study commissioned by IDP Education Australia in 1995 on 25 selected countries has estimated that by 2010 the number of international students seeking overseas education from the Asian region will increase to 1.4 million and by 2025 to 3.1 million (Blight, 1995). It also estimates that an additional 800,000 international university places will be required within the next fifteen years, of which, China and India alone will require nearly 45% (Blight, 1995).

Currently, the USA, UK, Australia, Canada, France, Germany and New Zealand are the established and emerging key players in the global higher education market, and they share between them almost 97% of the total international student enrolments (UNESCO, 1998). These countries are now seeking fresh opportunities in China, India, Brazil, Mexico, and the Middle East, besides their focus on the traditional Asian markets like Malaysia, Indonesia and Singapore.

Kemp (2001) states that Australia, given its advantages in terms of the quality of education, commitment to Asia, its focus on marketing international education, democratic traditions and safe and relaxed environment, will continue to remain an attractive destination for international students. Further reinforcing this position, Nelson (2002) asserts, *"education has been one of Australia's unsung export successes. It is one of Australia's fastest growing exports, generating more revenue than wool, and almost as much as wheat"*. Australia, compared to other major players in the international education market, has shown significant growth in student enrolments. Between 1998 and 1999, the overall growth was over 15% compared to 2% in USA, 2.6% in the UK, 8% in Canada and 8.2% in New Zealand (AEI, 2000). After a relatively slow pace of growth the foreign student enrolments in Australia rose by 67,000 or 79% between the years 1993 and 1997. By 1997, there were over 151,000 international students studying in Australia and during 1999, 157,834

international students were enrolled in Australian educational institutions, 7.3% higher than 1998 (AEI, 2000). The above comparative analysis is further detailed in Appendix 1.

Australia, at present, has approximately a 5% share of the global market for international students in higher education and, it is estimated that by 2010 Australia will increase its share of this market to 7.5%. Based on these trends, the total number of students is expected to increase from 89,000 in the year 2000 to 206,000 in 2010, in terms of university admissions (Blight, 1995). In 2000, the higher education enrolments increased by 19% to 107,622 with strong growth registered from major source countries such as China - increased by 69% to 14,948, Thailand - increased by 22% to 8,179, South Korea - increased by 19% to 11,485, Malaysia - increased by 18% to 19,602, India – increased by10% to 10,572 (Kemp 2001). During the year 2000, even though student enrolments from Indonesia decreased by nearly 7%, largely attributable to the economic crisis in the country, it still represented one of the major sources of international students to Australia. All countries of origin included in this study featured within the top 10 sources of international students to Australia.

Despite the continual growth in overall student enrolment numbers in Australian tertiary institutions as outlined above, the rate of growth over the past three decades suggests a decline in worldwide markets for international students (Kemp, 1990). This trend is associated with the saturation of some markets (Mazzarol and Hosie, 1996). Moreover, global competition and changing demands in the higher education market, particularly as a result of changing student expectations, has also presented Australia with many challenges. With reductions in government funding for higher education, Australian universities became aware of the need to gain a reasonable market share to ensure a steady flow of funds from international student sources (Mazzarol and Hosie, 1996). To increase market share, service quality has become a major strategic variable for universities as service providers (Donaldson and Runciman, 1995). Addressing relevant service quality elements attractive to international students enables universities to improve student satisfaction, a key factor contributing to benefits such as student retention, positive word of mouth communication, and competitive advantage (Townley, 2001; McDougall and Levesque, 2000; Guolla, 1999).

1.3. Research question

The central research question investigated in this thesis is:

"Are there differences in the level of customer satisfaction and dissatisfaction (CS/D) between international postgraduate students from Asia studying in Australian universities?"

The student groups selected for the study are postgraduate students from China, India, Indonesia and Thailand. These countries are ranked highly among the potential sources of international postgraduate students to Australia. The study focuses on five universities in Victoria: Deakin Univeristy, La Trobe University, Swinburne University of Technology, The University of Melbourne and Victoria University of Technology. According to AEI (2000), postgraduate students represent 25% of all international students studying in higher education institutions in Australia and nearly a third of them study in universities in Victoria.

The changing demands and expectations of students (Coaldrake, 2001) and the university's response to such changes lead to variances in student satisfaction between Australian universities. It is imperative for universities to understand the reasons and the differing levels of satisfaction among students and, therefore to address their concerns more appropriately. The competitive nature of the industry and the importance of customer satisfaction to the success of the higher education industry in Australia therefore make this research question highly relevant.

This research will be guided by the following supplementary questions:

(i)   What are the major factors responsible for creating customer satisfaction and dissatisfaction among target student groups?

(ii)   Are there national differences in the rating of these factors?

(iii)   Are there any differences in the levels of CS/D between the student groups?

(iv)   What should be the strategic marketing response of universities to minimise the dissatisfaction levels of students?

The major research objectives that will be pursued in this thesis are as follows.

1. Determine the key factors relating to choice of study destination by the target groups of international postgraduate students, which directly impact on CS/D.

2. Establish the levels of CS/D of the target groups of international postgraduate students and the differences, if any, between them.

3. Develop a model to explain the process of CS/D in relation to the Australian higher education market for international students based on the consumer behaviour model of Engel, Blackwell and Miniard (1986), and extend the choice model developed by Lawley (1993 and1998) and Lawley and Blight (1997).

4. Present the implications of the findings of this study with respect to the international marketing of Australian higher education.

Several hypotheses are developed to address the above objectives and provide answers to the research questions. These are discussed in chapter 4.

1.4. The rationale for the study

This section will discuss the rationale for the proposed study under the following headings:

- filling a gap in the knowledge;
- economic potential of the international education market; and
- implications for management policy and practice

1.4.1. Filling a gap in the knowledge

Whilst there is a body of knowledge relating to how and why international students study abroad and choose particular countries and institutions as study destinations, research on the post-choice behaviour of students and, particularly in relation to regard to their satisfaction with study destinations is limited. The available studies are largely focussed on either one institution or undergraduate students and broader issues

related to service quality elements (Le Blanc *et al*, 1997; Pariseau *et al*, 1997; Tomovick *et al*, 1996), student experiences such as cost of living (Smith *et al*, 2002), education support and delivery (Smith *et al*, 2002) facilities and services (Geall, 2000), intellectual climate (DETYA, 2000), teaching staff and methods (Geall, 2000), and academic quality (Smith *et al*, 2002; Townley, 2001; Burke, 1986). More importantly, no studies have been undertaken on CS/D relating to the choice of a university as a study destination involving the post-graduate student groups selected for this study. The present study, therefore, will make a contribution by filling a void in the academic research in this area.

The development of a conceptual model to explain the satisfaction formation process applicable to the target student groups will be central to this study. It will form the basis of a comparative analysis of satisfaction levels of these students. Student satisfaction leads to positive word-of-mouth (WOM) communications, student retention and few complaints, which would help universities to enhance their attractiveness to potential students and to maintain a competitive edge in the international market place (Harvis *et al*, 2000; Yau, 1994; Halstead *et al*, 1994). The study, therefore, makes a substantial contribution to the knowledge of post-choice consumer decision-making process and its implications for the higher education industry.

1.4.2. Economic potential of the international education market

The export of education is an important source of foreign income earnings for Australia. During 1998 and 1999, the total estimated export revenue from international education services was $3 billion (IDP, 1999). Export revenue is determined on the basis of the total expenditure of international students on all services. According to AEI, 2000, the presence of international students in Australia generated an income of approximately $3.7 billion to the Australian economy in 2000. A revised estimate for 2001 indicates that the contribution to the Australian economy has been over $4 billion (Nelson, 2002).

The economic importance of international students can be demonstrated not only by the continuous increase in the number of international students seeking education in

Australia but also by the cultural diversity of the students. It is notable that between 1999 and 2000 the number of international students in the Australian higher education sector increased by 19.1% from 90,395 to 107,622 of which 57.2% of international students study in Australian universities (AEI, 2000). Another significant dimension is that 75% of all international students studying in Australia are from Asia (AEI, 2000). As Table 1.1 below shows, post-graduate students account for 25% of all international students in higher education and it is estimated that around 30% of them are studying at Victorian universities (AEI, 2000). The student groups from China, India, Indonesia and Thailand selected for this study represent 61% of all Asian postgraduate students studying in Australia and have shown a potential for further growth (AEI, 2000).

Table 1.1:   Asian students in higher education in Australia

Country	Doctorates	Masters	Other	Total PG	Bachelor	Other Courses	Total UG	Grand Total
China*	703	4576	519	5798	11124	148	11272	17070
India	140	1498	326	1964	985	108	1093	3057
Indonesia	452	1881	319	2652	5458	75	5533	8185
Thailand	335	1142	253	1730	837	17	884	2584
Total	1630	9097	1417	12144	18404	348	18752	30896
Singapore	224	1864	344	2432	14140	81	14221	16653
Malaysia	145	1220	177	1542	12291	99	12390	13932
Sri Lanka	50	105	29	184	596	13	609	793
Pakistan	39	252	85	376	234	18	252	628
Other Asia	556	2156	635	3347	6387	203	6608	9937
Total Asia	2644	14694	2687	20025	52052	762	52814	72839

*China includes students from Hong Kong; (PG) Postgraduate and (UG) Undergraduates

Source: Australian Education International, 2000 p 46-47.

As discussed in section 1.2.2, Australia remains a popular study destination for Asian students and the data suggests that the market is expanding. However, given the level of competition both within and outside Australia, the attractiveness and competitiveness of Australian universities as study destinations need to be sustained to ensure future success of the industry. Australia faces competition from other countries such as USA, UK, and Canada, and it is imperative, therefore, for Australian universities to remain competitive as attractive study destinations for international students. Apart from international competition, Australian universities compete with each other for a greater share of the overseas student enrolments primarily driven by

the need to supplement their operating revenue in light of the reduction in government subsidies and grants.

1.4.3. Implications for management policy and practice

This study is significant in view of the potential benefits and outcomes for policy and practice in the Australian higher education industry that will emanate as a result of the study.

As mentioned earlier, Australia is increasingly becoming a popular study destination for international students, particularly from the Asian region. By meeting international students' expectations of service quality, Australian universities play a crucial role in building and sustaining Australia's international image as a quality study destination.

Customer satisfaction is the key to any service industry. The knowledge of the processes of CS/D during the post-purchase (post-choice) period is important to many of the stakeholders involved in international education. Educators, policy makers and educational marketing practitioners will benefit from greater insight and information to develop policies, practices and programs that enhance the attractiveness of the respective educational institutions as study destinations. Educators will benefit by a greater understanding of student perceptions on the quality and delivery of educational services, thereby providing opportunities for better outcomes beyond the traditional boundaries of teaching methodologies, curriculum design and assessment criteria. Policy makers will benefit from an understanding of student motivations and aspirations to develop more *student friendly* policies and similarly marketing practitioners will be able to develop programs more responsive to the cultural diversity of the student population.

The implications of the findings of this thesis for marketing practice are discussed in section 6.4.2.

1.5. The method

The study was undertaken in two stages: preliminary study and the main study. The preliminary study comprised exploratory research, which included a review of the literature, focus groups and depth interviews, followed by identification of the explanatory variables, the conceptual framework of the study and the development of the research hypothesis. The main study was focussed on data gathering and analysis. This stage consists of the development and administration of the questionnaire, sampling and data analysis strategies. The ethical considerations were fundamental at each stage of the study.

The study uses a triangulation technique with different research approaches, methods and techniques aimed at overcoming any potential bias and weakness of using a single method approach (Hussey and Hussey, 1997). According to Jick (1979), the triangulation technique has vital strengths, encourages productive research, enhances qualitative methods and allows the complementary use of quantitative methods.

The expectations/perceptions paradigm is used to measure the relative post-choice satisfaction of international students from China, India, Indonesia and Thailand based on an adapted version of the SERVQUAL instrument (Parasuraman *et al*, 1994, 1991, 1988 and 1985). This paradigm postulates that customer satisfaction is related to the size and direction of disconfirmation, which is defined as the difference between an individual's pre-purchase (pre-choice) expectations (or some other comparative standard) and post-purchase (post choice) performance of the product or service as perceived by the customer (Oliver 1980; Anderson, 1973).

The questionnaire design applies the theoretical structure of the SERVQUAL instrument to international education. SERVQUAL is an instrument for assessing customer perceptions of service quality in service and retailing organisations (Parasuraman *et al*, 1988). The construct of *service quality* is defined in terms of *perceived quality* - a customers' judgement about an entity's overall excellence or superiority. *"It is a sort of attitude and comes from a comparison of expectations and perceived performance"* (Llosa *et al*, 1998, p.17). The questionnaire design is discussed in section 4.4.

Two different approaches are used for the data analysis of this study. First, multivariate analysis of variance is used as a statistical tool to analyse the students' expectations and perceptions regarding four factors relating to a university as a study destination *(education standards and facilities, information support and guidance, customer value and study outcomes, prestige and recognition)*.

The second approach is the use of logistic regression analysis to determine the probability of the impact of each independent variable on *satisfaction,* which is the dependent variable. This analysis is considered appropriate for this study because it offers an accurate measurement of the dependent variable, which is non-metric in this case. This approach is to supplement the first approach with a more robust measurement.

1.6. Thesis structure

The thesis consists of six chapters. An outline of the thesis structure is given in table 1.2.

The present chapter introduces the research topic and discusses the background and rationale for the research. **Chapter 2** reviews the existing literature on subject areas relevant to the study. This review will form the foundation for the development of the theoretical framework and the hypotheses used in the study. The review is aimed at investigating the development of international education, highlighting any research themes and different dimensions related to customer satisfaction including the debate on expectations, disconfirmation and performance as a measurement process of CS/D. Furthermore, the relationship between customer satisfaction and international education, customer value, culture, and the theory of cognitive dissonance is examined, followed by a summary of the chapter.

The purpose of **Chapter 3** is to present a theoretical and conceptual framework and a model of post choice satisfaction, which underpins this study. The development of the framework and the model is based on the findings of the literature reviewed in the preceding chapter.

Table 1.2: Structure of the thesis

Chapter	Title	Major Contents
1	Introduction and Background	- Introduces the research background - Presents the research problem, and questions - Justification of research.
2	Literature review	- Review of literature and empirical findings related to the study
3	Theoretical and conceptual framework	- Conceptual framework underpinning the study - Discussion of research hypothesis - Presentation of model of post-choice satisfaction
4	Method	- Presents research and questionnaire design, data analysis procedures
5	Data Analysis and Results	- Discussion of hypothesis testing and results
6	Conclusions and Implications	- Summarises study findings - Discusses implications of the results - Presents recommendations

Chapter 4 discusses how the research was designed and the stages of the research process, including the exploratory research, development of the survey instrument and its purpose, pilot testing of the questionnaire, sampling strategy, data collection strategy, administration of the questionnaire through universities, ethical considerations and the preliminary model of post-choice CS/D. **Chapter 5** is devoted to the data analysis and presentation of results including, response rates, descriptive statistics and other multivariate analysis of data. **Chapter 6** summarises the results and discusses the implications and provides recommendations.

1.7. Definitions

It is acknowledged that certain words and terms are interpreted differently depending on the discipline and the context in which they are used. On many occasions, acronyms and abbreviations are also used to facilitate the flow of expression. Outlined below are the definitions of the terms used in this thesis to provide clarity of meaning

in their application. A list of abbreviations and related explanations appears on page XV of the thesis

International postgraduate student: An overseas student undertaking a postgraduate course in a higher education institution in Australia either as a full fee-paying student or as a scholarship holder. For the purpose of this study all international students who undertake a full time postgraduate degree either by course work or research are included as part of the universe.

Source country: The home country of a postgraduate student or the country of origin of the student, which is considered as the country of permanent residence.

Study destination: An institution where the student undertakes studies. For the purpose of this study, all universities in Victoria are considered *study destinations* given its focus on student satisfaction in respective universities.

Pre-choice decision-making process: The decision-making process prior to making a selection of a study destination. Some texts and studies identify this as the *pre-purchase* stage of the consumer decision-making process. In this study however, the pre-choice process is examined to identify the key factors influencing post-choice satisfaction.

Post-choice decision-making process: The decision making process after making a selection of a study destination, which is also identified as the *post-purchase* phase of the consumer decision making process.

Cross-cultural analysis: The systematic comparison of similarities and differences in the material and behavioural aspects of cultures (Engel, Blackwell and Miniard, 1982). The main theme of this research is analysing the differences in expectations and perceptions and the resulting satisfaction levels of four student groups from Asia. Differences and similarities that exist in cultures that represent these student groups have an impact on their decision-making behaviour.

1.8. Delimitations of scope

Several limitations have been placed on this study. Firstly, the focus of this thesis is the post-graduate university sector, which is a sub sector of the higher education sector in an industry that covers university education, ELICOS, Vocational and School sectors. Nearly 54% or 84,304 international students are enrolled in the higher education sector out of a total of 157,534 international students studying in Australia (AEI 1999). Post-graduates represent 29% of all students enrolled in higher education and represent a niche market that has shown rapid growth.

Secondly, this study focuses on four of the source countries – China, India, Indonesia, and Thailand. Most of the growth in the Australian university post-graduate enrolment has been from these countries.

Thirdly, this study concentrates on students studying only in Victorian universities as onshore students and thus offshore and distance education students are not included. Onshore programs have attracted the largest number of students to Australia and continue to be the growth area, compared with offshore and distant education programs. Victorian universities are study destinations for nearly 32% of overseas post-graduate students in Australia (AEI, 2000).

1.9. Summary

This chapter presented the background to the study outlining the research problem, research questions and the purpose of the study. The research was justified on the basis of its contribution to knowledge and its implications. The outline of the thesis was presented and the broad limitations explained. The following chapters will present the research, its findings and implications.

The next chapter will undertake a review of the literature.

Chapter 2

Literature Review

2.1. Introduction

The purpose of this chapter is to review the literature on subject areas relevant to the research topic and questions of the study. The review is directed towards identifying important themes, concepts, variables and significant findings and to facilitate the development of a theoretical framework and the hypotheses used in the study.

The chapter discusses six subject areas: (1) International Education, (2) Customer Satisfaction and Dissatisfaction (CS/D), (3) Service Quality, (4) Customer Value, (5) Culture, and (6) Theory of Cognitive Dissonance, before ending with a summary of the chapter.

International education and customer satisfaction and dissatisfaction (CS/D) are two major areas of investigation and themes of the study. Given the focus of the study on CS/D, an analysis of this theme is supported by the other allied areas of service quality, customer value, culture and the theory of cognitive dissonance. These themes are directly relevant to the main research question of the study, which looks at the differences in the level of CS/D between international students from four Asian countries studying in Victorian universities. How students perceive their experience with the university in terms of the services provided by the institution is pivotal to understanding these differences. In this context, the impact of the quality of service, the perception of value and culture on CS/D becomes extremely relevant and, therefore, an examination of the research themes within these areas is justified. The literature review on the Theory of Cognitive Dissonance is justified on the basis that it provides further insight into the CS/D process and in view of the relevance of the theory to a major variable - *disconfirmation of expectations* – examined in the thesis.

2.2. International education

The research themes relating to international education have been largely focussed on seven areas namely (a) factors influencing choice of overseas study destinations (b) service quality (c) internationalisation of curriculum (d) student experiences in their study destinations, (e) study outcomes in the home country, (f) marketing practice, and (g) government policy. All of these themes will have relevance to students' satisfaction or dissatisfaction either directly or indirectly and will be examined in the study. The choice of overseas study destinations has been one of the major research themes in international education and the literature review in the following section will be focussed on this area.

2.2.1 Choice of study destinations

Two distinct research themes or approaches are apparent in the academic literature relating to the choice of study destinations by prospective students. One approach has been to look at the macro-environment variables that influence the outflow of students from source countries such as the country's higher education system, historical links, level of economic development, foreign aid and economic policies. Duan (1997) describes these as the *'factors at a country level'* that influence the outflow of students from source countries. Another approach is to identify reasons of choice at an individual level by examining perceptions of students, agents and other stakeholders, which are categorised as *'individual level factors'* (Duan, 1997).

According to Lawley (1998), researchers examining the macro-environmental influences relating to international education have adopted diverse methodological approaches, leaving behind no single or specific theoretical framework on student flows. This is an outcome of research being spread across several disciplines due to the interest shown in international education by a wider audience and stakeholders in the industry (Lawley, 1998). Table 2.1 provides an overview of research methodologies applied to examine the macro-environmental influences on international education which have ranged from the modelling of secondary data (Agarawal and Winkler, 1985), cross sectional studies (Cummings and So, 1985; Cummings, 1984), longitudinal studies (Wobbekind and Graves, 1989), to studies

focusing on two countries or a number of countries (Cummings, 1985; McMohon, 1992).

Table 2.1: Approaches to macro environmental influences on international education

Authors/ description	Influences identified	Results
Spaulding *et al*, 1976 Based on a literature review	**Six structural push conditions.** - Underdevelopment; - Higher education systems; - Employment opportunities; - Working conditions; - Sponsorship for study; - The degree of social support **Pull conditions include:** - Legal aspects - Home country ties	**Not tested**
Lee and Tan, 1984 - Looked at flow from lesser developed to developed countries - Modelled secondary data	**Influences included:** - Excess educational demand; - Relative wealth; - Historical and language links - Remoteness - Student staff ratio	**Excess demand most important**
Cummings, 1985 - Considered Asian students' preference for the United States using secondary data. - Cross sectional	**Macro influences included:** - Improving political links - Increased economic exchange - Increase in immigration - Similarity, capacity quality in education systems - Part-time work opportunities	**Findings suggesting preference for the United States influenced by:** - Level of economic assistance - Level of American imports - Number of immigrants - Standard of living in source country
Agarwal and Winkler, 1985 - Modelling based on secondary data	**Macro influences included:** - Income in home country - Education cost in the USA - Education opportunities in home country - Expected benefits of immigration to the USA	**All significant except immigration**
Throsby, 1986 - Econometric model UK versus Australia	**Influences included:** fees distance	**Two key explanatory variables:** - Fees - Distance
Wobbekind and Graves, 1989 - Theoretical model of educational demand using time series and cross sectional data	**Influences identified were:** - Probability of foreign aid - Stock of prior migrants - Real per capita income - Excess demand considerations - Distance *not significant*	**Significant influences were:** - Foreign aid - Stock of prior migrants - Real domestic per capita income - Excess demand considerations
Kemp, 1990 - Modelled secondary data	**Influences included:** - International links - Supply	**Best explanatory variables were:** - Strong international links - Supply constraint
McMahon, 1992 - Modelled secondary data 18 countries	**Flow of students is interconnected with** - Political - Economic - Cultural relationships	**Key influences:** - Source country economic weakness - Involvement global economy - Emphasis on education
Baumgratz-gangl, 1996	**Student mobility influenced by:** - Historical ties - Political considerations - Political refugees - Economic considerations - Educational demand - Research cooperation - Migration of guest workers - Foreign language proficiency - Improved transport and communications	**Not tested**

Source: Lawley, Meredith (1998)

A number of distinct frameworks or approaches have also been identified by Lawley (1998) and Duan (1997). These are the *push and pull theory* (Cummings 1991), the *economic approach* (Agrawal and Winkler, 1985), the *development approach* (Cummings, 1985; Wobbekind and Graves, 1989), and the *interdependence approach* (Altbach, 1989; Knight, 1994).

The *push and pull theory* articulates factors that contribute to *'pushing'* students out of the source countries such as capacity limitations in home countries and "pulling" students into study destinations through marketing and other activities. According to Mazzarol *et al* (2001), the combination of the *'push* and *pull'* factors is largely responsible for the worldwide pattern of international student flows. The key push factors are identified as (a) *'the level of economic development in the source country'*, (b) *'the capacity of the source country's domestic education system to meet demand'*, (c) *'the per capita incomes'* and (d) *'the size of the employment market for professionally educated graduates'* (Mazzarol *et al*, 2001 p.17). The 'pull' factors included (a) knowledge and awareness of the study destination, (b) recommendations by relatives and friends, (c) cost issues, (d) environment, geographical proximity of home country to the destination country and (e) the presence of family and friends in the study destination. (Mazzarol *et al*, 2001; Lawley, 1997, 1993). Several other researchers including Molla and Sedlacek, (1989); Steadman and Dagwell (1990); Purdy (1992); Andressen (1993); Smart and Ang (1993); Harris and Rhall (1993); Nesdale *et al* (1995); and Duan (1997), have identified similar factors in the past.

The *economic approach* focuses on the costs and benefits of undertaking higher education overseas. The research pertaining to source countries is however limited in this area while the cost and benefits of international education to destination countries is well documented. The discussion in this section will therefore be focussed on the effects on the host country. Back, Davis and Olsen (1997) analysed the comparative costs of international education in Australia, UK and the USA and concluded that Australia enjoyed cost advantages in several areas such as tuition fees and living expenses at that time. In a study prepared for the Department of Employment and Training, Johnston *et al* (1997) argued that the net benefit of internationalisation to educational institutions was close to zero. However, they confirmed that there are implications for increased overseas trade and significant pecuniary benefits from non-

educational expenditures by foreign students. This was based on the fact that graduates remain a potential link to promoting Australian business interests in their home countries given that most of them occupy managerial positions when they return, and their living expenses while in Australia become a major contribution to the Australian economy. In contrast, a similar study by Peter (1997) argued that the increased export expenditure, in the form of foreign student expenditure, would have a relatively strong stimulatory effect on output and employment in the Tasmanian and national economies. MacKay and Lewis (1995) in their study confirmed the positive effects of internationalisation on the national economy. In another study on the economic impact of international student enrolments, Dixon *et al* (1998) warned that any reduction in overseas student numbers is likely to reduce employment, capital formation and the GDP in Australia.

The *development approach* is based on the concept that an educated workforce is needed with the development and growth of economies of the source countries. The current trend in global wealth creation is increased participation in acquiring knowledge and skills, and human capital is now estimated to be at least three times more than physical capital (Power, 2000). The economic development of a country therefore is increasingly linked to its ability to acquire and apply technical and socio-economic knowledge (Salmi, 2001). In this context, Australia's association with the Colombo Plan in 1951 was seen as an initiative to assist in the development of Asian economies by sponsoring students for education in Australia. The scholarship scheme initiated through this program benefited many Asian students, and helped raise the awareness of the Australian education system within Asia, resulting in collaborative ventures in training students. However, in a review of the Colombo Plan and Australian government policies with regard to overseas students, Auletta (2000), argues that Australia's involvement with the Colombo Plan had more to do with the containment of communism, countering of criticism of racist policies in Australia and the development of trade and future markets than altruism.

The *interdependence approach* highlights the concept of global interdependence in political, social, economic and technological environments. The globalisation process appears to be facilitating this trend. While some see this evolution as a major source of opportunity, others are critical of the dangers of interdependency highlighting

negative economic and social outcomes if the environmental influences are not compatible with a nation's economic and social needs and aspirations (Salmi, 2001).

The research approach on 'individual level' factors influencing students' choice of study destination is focussed on the decision-making behaviour of the student at an individual level rather than on the external environment. Factors such as prospect for post-study job opportunities (Glasser, 1978), and relative cost (Williams, 1981), are among the key elements in students' decision making. From a review of literature and her own empirical studies, Lawley (1993) identified 20 such factors of choice of study destinations (countries) in her decision-making models for Hong Kong and Malaysian students, some of which are further investigated in this thesis in relation to the post-choice decision making process.

It is clear, from the foregoing discussion, that the choice of a study destination is normally considered as a two-stage process, where the student chooses a country first and then the educational institution. The macro environmental variables that impact on international education support this view. Lawley (1993) and Lawley and Blight (1997) examined several other factors influencing the choice of countries as study destinations. The underlying assumption is that the selection of an educational institution will be followed by the choice of country as a study destination. It may however be argued that the choice of a country and an educational institution can be separate and independent of each other. As Duan (1997) points out such choice would be dependent on *individual level factors*, such as the post study job opportunities (Glasser, 1978), and relative cost (Williams 1981). Other *individual level factors* may include academic considerations such as efficient enrolment processing system (Burke, 1986), recognition of prior learning (Smart and Ang, 1993; IDP, 1995), high image and prestige of the university (Bureau of Industry Economics, 1989; Nesdale *et al*, 1995; Mullins *at al*, 1995; Mazzarol, 2001) appropriateness of courses (Gardiner and Hurst, 1990; IDP, 1995; Wilkinson *et al*, 1996, Duan, 1997), all of which would directly influence the choice of an educational institution as a study destination independent of the choice of a country. The importance of the choice of an educational institution to postgraduate students, which is the focus of this study, therefore, cannot be underestimated.

Although the choice of a country as a study destination is not the focus of this study, the factors of choice used in the process serve as an important input to the study of post-choice satisfaction of students enrolled in an educational institution. The aim of the study is to identify the relevant factors and investigate the importance of these factors on the satisfaction of the postgraduate students studying in Victorian universities.

2.3. Customer Satisfaction and Dissatisfaction (CS/D)

CS/D is a core marketing concept. It is a major outcome of marketing activity and serves to link processes, culminating in purchase and consumption with post-purchase phenomena such as attitude change, repeat purchase, and brand loyalty (Churchill and Suprenant, 1982). It is one of the mostly widely studied and embraced constructs in marketing. In the last two decades more than 15000 academic and trade articles have been published on the topic (Peterson and Wilson, 1992) endorsing its importance as a cornerstone of the marketing concept. This concept has been embraced by both practitioners and academics as the highest-order goal of companies (Peterson and Wilson, 1992). A satisfied customer is viewed as an indispensable means of creating sustainable advantage in the current competitive environment (Patterson, Johnson and Spreng, 1997).

Customer satisfaction is not easy to define and there is diversity in the definitions. Etymologists view the term *"satisfaction"* as a derivation of the Latin *"satis"* (enough) and *"facere"* (to do or make). If the products and services have the capacity to deliver what is being sought to the point of being *"enough"*, satisfaction results (Oliver, 1996). Some equate *"satisfaction"* to fulfilment, which implies that the satisfaction level is known. A critical of these literal meanings of satisfaction, consumer researchers have linked satisfaction to consumer experience from a human behavioural point of view, suggesting satisfaction as a variable phenomenon.

The early research studies on satisfaction defined satisfaction as a post-choice evaluative judgement concerning a specific purchase decision (Oliver and DeSarbo, 1988; Bearden and Teel, 1983). The dominant conceptual model used in the satisfaction literature is the disconfirmation of expectations paradigm. This paradigm

postulates that customer satisfaction is related to the size and direction of disconfirmation, which is defined as the difference between an individual's pre-purchase expectations (or some other comparison standard) and post-purchase performance of the product or service (Oliver, 1996, 1980; Anderson, 1973). When expectations are not fulfilled, the level of satisfaction decreases.

Festinger (1957) with his theory of 'cognitive dissonance' articulated that inconsistency in perceptions and beliefs could influence the behaviour of customers. When strongly held expectations are disconfirmed, the interaction between expectations and actual product performance can produce satisfaction or dissatisfaction. As Hunt (1991, p.109) further asserts, " *a negative disconfirmation (when actual is not as expected) results in dissatisfaction. A positive disconfirmation (when actual is better than expected) results in satisfaction*". The above definitions assume expectation is an adequate predictor of satisfaction. This assumption is however criticised as inadequate because of the likelihood of the occurrences of unexpected satisfying experiences of customers.

Different dimensions to the above theoretical background have been added by researchers Anderson *et al* (1994); Bayus (1992); and Wilton and Nicosia (1986) who claim that satisfaction should be viewed as a judgement based on the cumulative experience with a certain product or service rather than a transaction-specific phenomenon. Mittal, Kumar and Tsiros (1999) have expressed a similar view. They argue that the satisfaction process is highly complex because the relationship between performance, satisfaction and behavioural intentions also change during the consumption process. Contrary to this view, Oliver (1996) added the affective dimension claiming that customer satisfaction is the result of a cognitive and affective evaluation where some comparison standard such as expectation is compared to perceived performance. Cronin and Taylor (1994) held that satisfaction should be considered as a separate construct as it is restricted to transaction specific judgements.

In a review of major CS/D studies, Halstead *et al* (1994) have argued that there are conflicting findings regarding the respective roles of expectations, disconfirmation and performance in satisfaction evaluations. Researchers have suggested that different satisfaction processes operate under divergent conditions, for example across varied

product categories, for high versus low-involvement products (Cadotte *et al*, 1987; Spreng *et al*, 1996; Halstead *et al*, 1994). For example, Churchill and Surprenant (1982) found that both disconfirmation and performance were significant antecedents of satisfaction for a low involvement product, which entails limited search, but only performance was significant for a high-involvement product. In contrast, Tse and Wilton (1988) found that both disconfirmation and performance had significant effects for a high-involvement product, but performance was stronger. Furthermore, Spreng *et al* (1996), found disconfirmation significant for a high involvement product but also found that performance had a strong bivariate relationship with satisfaction, mediated by the disconfirmation of expectations and desires. Woodruff *et al* (1983) and Holbrook (1983), on the other hand, identified three different types of expectations – equitable performance, ideal performance and expected performance and it is the expected performance that is most often used in customer satisfaction and dissatisfaction research, as it is the logical outcome of the alternative evaluation process.

The above findings indicate the lack of consistency in defining the construct *"satisfaction"*. Some studies show satisfaction as a result of a stronger effect of performance, whereas others show a stronger effect of disconfirmation. However, with regard to services, given the difficulty in confidently evaluating performance for intangible, complex services high in credence properties such as university education, some researchers have suggested that customers are likely to rely more on prior knowledge and expectations and to use a top-down evaluation heuristic (Hoch and Ha, 1986; Yi, 1990). Hence, although it is expected that performance will have a direct effect on CS/D (because of the high involvement nature of the service), customers are forced to rely largely on their prior expectations – and hence disconfirmation – in forming satisfaction judgements. While it is acknowledged that both disconfirmation and performance are likely to affect CS/D, disconfirmation will therefore have a greater influence (Patterson, Johnson and Spreng, 1997).

2.3.1. Customer satisfaction and international education

Although there has been extensive research on satisfaction, only a small proportion of it focuses on services. This is a major deficiency because the lack of search qualities

associated with services is likely to produce greater performance uncertainty and, thus decreased accuracy in consumers' predictive expectations (Voss et al, 1998).

Customer satisfaction research in international education is also a relatively new research focus that was developed in the late 1980s. Prior to this period, international education did not exist as a separate academic field and its research was found in other areas such as psychology, economics and education. Much research in this field is considered as being in an emergent phase with many individual studies but few consistently accepted methodologies and little development of more rigorous and formal comparative research designs (Lawley, 1998).

Compared to the intensive research in the pre-purchase (pre-choice) phase of the decision making process, the research on post-purchase (post-choice) satisfaction in international education is very limited. Lawley and Blight (1997) identified over thirty studies relating to the choice of study destination (pre-purchase decision making phase) by international students. The studies conducted in the area of post-choice behaviour are not only few in number, but also they are narrowly focused dealing with either a single institution, or a single class or a study program. Millar and Brotherton (2001); Cheung (2000), Geall (2000); Guolla (1999); Houston and Rees (1999); Kwan and Ng (1999); Heckman and Guskey (1998); Pariseau and McDaniel (1997); LeBlanc and Nguyen (1997); Kwan, 1996; Tomovick *et al* (1996); and Halstead *et al* (1994) are among the leading studies by international scholars in this area of post-choice behaviour. These studies are commented on separately below.

Millar and Brotherton (2001) examined the differences in the perceptions of students and career advisers on career guidance interviews conducted in 16 secondary schools in the United Kingdom. The study by Cheung (2000) was related to the measurement of studying as a source of life satisfaction among second and third year undergraduate students at the City University of Hong Kong. Geall (2000), on the other hand, focussed on undergraduate students in evaluating student's expectations and experience of their transitional year from secondary to tertiary education. In a study of satisfaction among a sample of MBA and undergraduate students in a US classroom, Guolla (1999), reported that student learning was strongly related to course satisfaction and rationalised the roles of students as customers, clients, producers and products and their significance to university. In another investigation on a

postgraduate education program, Houston and Rees (1999) confirmed that the relationship between the postgraduate student and the university is highly complex, as they can both be co-producers and customers at various points in time, thus providing a different dimension to the study of postgraduate students. Heckman and Guskey (1998) examined the relationship between alumni and the university and reported that the relationship of alumni with the university had a strong correlation with the study outcomes in terms of job satisfaction. Tomovick *et al* (1996) in their assessment of the service quality provided to foreign students at US business schools reported that international business students considered physical facilities (tangibles) as the most important factor influencing their assessment of service quality and level of satisfaction. The study by Kwan (1996), in contrast, was on the application of Total Quality Management (TQM) in the education industry, but as part of the study, she investigated the teaching and learning processes and their impact on student behaviour at a university in Hong Kong. LeBlanc and Nguyen (1997) investigated the dimensions used by students in a small business school in the USA in evaluating service quality in order to identify the components of the service delivery process that are most important in the judgement of students.

Halstead *et al* (1994), an American study, investigated the alumni satisfaction with college education, integrating customer satisfaction research with research on higher education.

Some of the major Australian studies related to international student satisfaction were conducted by Townley (2001); Gatfield *et al* (1999); Gatfield (1997); AEIF (1997) and Burke (1986). Townley (2001) rationalised the qualitative approach in reporting student satisfaction among undergraduates in different schools at a university in the United Kingdom. The results indicated that students were concerned about several aspects of the educational experience of the institution, ranging from computer facilities, communications within the college, student union, academic quality, resources, food and accommodation to nature and culture of the university. Gatfield *et al* (1999) in his study related to the student perceptions of service quality, compared the perceptions of Australian undergraduate students with those of international students. In an earlier study, Gatfield (1997) addressed the area of international student satisfaction with quality and its relationship to the marketing of international

education. Its focus was on the perceptions of quality and the review of the post purchase decision-making process was limited. The AEIF (1997) study, in contrast, covered all overseas students and analysed the level of satisfaction with institutional arrangements; campus facilities; course and the institution that they attended; students likes and dislikes about studying in Australia; and their future intentions. The primary focus of this study was also directed towards undergraduate students. The study by Burke (1986) specifically analysed the experiences of undergraduates at The University of New South Wales, focussing on first year students.

The above review indicates that the satisfaction literature on university education is mainly concentrated on undergraduate students and there is a large vacuum in the literature on satisfaction among postgraduate students. A key finding in the literature is that the dimensions of studies related to undergraduate and postgraduate students can be different, given the more complex relationship that exists between the university and postgraduate students compared to undergraduate students.

2.4.   Service quality

Service quality in international education has attracted the attention of researchers particularly during the past decade. The competitive environment of the international education market has prompted the continuous improvement in the quality of service delivery in all areas of the educational offering. According to Joseph and Joseph (1998), this is the result of change and reform. Seeking competitive advantage was not a concept encountered in higher education prior to the 1990s, but higher education institutions are now aware that they are in a market (Oldfield and Baron, 2000). With restrictive funding allocations by the federal government, the institutions have to compete for an increasing share in the international student market and to achieve this, service quality has become a major strategic variable (Donaldson and Runciman, 1995). This is because service quality is linked with customer satisfaction and the level of satisfaction depends on the quality of service experienced by the customer (McDougall and Levesque, 2000).   Service quality and satisfaction are therefore closely linked together and are being researched in combination (Townley, 2001).

According to Pariseau and McDaniel (1997) a newly emerging field of concern is service quality emphasising customer satisfaction. Earlier the domain of marketing and operational management literature, the concept is gaining attention in higher education, and the literature suggests that there is increasing pressure from the customers of higher education, which include students, parents, alumina, employers and legislators, to bridge the gap between their expectations of institutional performance and the actual performance (Pariseau and McDaniel, 1997, Chenet *et al*, 1999).

Quality can mean different things to people according to the context, and it can be perceived in many ways (Lovelock and Patterson, 2001). In the services marketing literature, 'quality' is considered an elusive or a nebulous construct because of the distinctive features: intangibility, inseparability of production and consumption, heterogeneity and perishability that differentiate services from physical goods (LeBlanc and Nha, 1997; Cronin and Taylor, 1994; Zeithaml *et al*, 1985; Lovelock, 1983). Researchers argue, therefore, that a different approach is required in defining and measuring perceived quality in services marketing (Lovelock and Patterson, 2001). The difficulty in reconciling the different perceptions of 'quality' in higher education is therefore understandable. Nevertheless, it is important that there is general agreement within and between institutions of the need for continuous improvement in quality to cope with the expansion of knowledge and the changing needs of the various communities, which universities serve.

Researchers have interpreted the construct of service quality in different ways. According to Oldfield and Baron (2000), there are three dimensions to service quality i.e. *service processes* which relate to the system of policies adopted by the service provider, *interpersonal factors*, which relate to the behaviour of frontline staff in influencing the degree of satisfaction of a customer, and *physical* or the *tangible* evidence of the service quality which, in their opinion, relates to physical elements (including physical facilities) of their educational experience. They assert that all three dimensions influence students experience in universities. In regard to the interpersonal factors mentioned above, McDougall and Levesque (2000) have discussed two overriding factors, which are identified as outcome aspects and process aspects. The former relates to what are actually been delivered and the latter concerns

with how they are delivered, and according to the authors both processes are directly linked to satisfaction.

Service quality has become a key issue and a concern due to a number of developments in higher education. These include the increase in internationalisation and globalisation (Stanley, 1997), dramatic growth in private and open higher education, (Power, 2000), changing student expectations (Coaldrake, 2001) and an unwillingness or inability on the part of the respective governments to provide necessary support to public educational institutions (Power, 2000).

Stanley (1997) argues that increasing internationalisation and globalisation of higher education has caused great concern regarding the quality and standards and the mutual recognition of awards. Although many countries have introduced programs to improve quality in higher education, these programs are narrowly tailored to suit the social and political requirements of their particular country. It has therefore become difficult to compare institutions in different countries given that they work on different priorities, expectations, definitions and ways of assessing and measuring their work (Stanley, 1997). The growth in private and open higher education, on the other hand, has not only introduced competition but also caused an identity and a financial crisis within universities worldwide (Power, 2000), threatening their capability to deliver quality services. A further interesting trend in higher education is the changing role of university students with the *"transition of the student population from an elite group of submissive patronized apprentices to a large and diverse collection of demanding clients"* (Coaldrake, 2001, p.76). They demand accountability, professional standards of service and high quality education from universities and their experience with the university extends beyond academic staff to non-academic relationships. Dealing with university bureaucracy, career guidance and counseling, seeking redress for discrimination and harassment are some examples. The experiences emerging from these encounters become important measures of service quality in universities.

According to Stanley (1997), universities tend to become too preoccupied with the processes rather than the quality outcomes, which are more important to students and other stakeholders. Given that universities are now operating in an increasingly

competitive environment, it is important to ensure that quality outcomes are being achieved in this new climate as the concept of service quality plays a significant role in understanding customer satisfaction and retention. Another important research theme is the relationship between culture and service quality perceptions. Furrer *et al* (2000) argue that perception of service quality varies across cultural groups and, in their study have attempted to link SERVQUAL's five service quality dimensions to Hofstede's four dimensions of national culture. As a result, they have advanced three contingency variables – powerful-weak customers, male-female service providers and frequent-infrequent service situations, which would influence the relationships between culture and the service quality, and in turn satisfaction.

Given that the present study is on four different cultural groups, it is expected that the evaluation of service quality outcomes will vary among students, which will reflect on their level of satisfaction.

2.5. Customer Value

Customer value has a direct relationship with customer satisfaction. The term *'value'*, though frequently used in the English language, is an abstract concept where it's meaning varies from context to context (Sweeney, 1995). The concept seems often misunderstood and is subject to different interpretations. For example, the economic concept of *'value'* is an end or outcome measured by *'price'* (Drucker, 1965). Price is used as a proxy, but the measurement is accurate only if the market is perfect. Economists have equated *value* with *utility* (Zeithaml, 1988; Huntington, 1990). In the social sciences, the *value* concept is commonly understood in the context of human values. In contrast, *value* in marketing is necessarily defined from the consumer's point of view (Drucker, 1965). Arguably, the concept of *value* is the same in economics and marketing, as it describes the satisfaction derived by the consumer, incorporating the *price* paid.

Driven by more demanding and discerning customers, global competition, slow-growth economies and industries, many organizations look for new ways to achieve and retain a competitive advantage. The attempts in the past have been to look internally within the organization for improvement, such as reflected by quality

management, reengineering, downsizing and restructuring. Increasingly however, the companies have focused on outward orientation towards customers to compete on superior customer value delivery (Woodruff, 1997; Cronin *et al*, 1997).

There is a growing body of conceptual knowledge about customer value, which is fragmented, with different points of view advocated and no widely accepted way of consolidating all these divergent views. This partly explains why today's organisations are not taking full advantage of the richness and complexity of the concept and advancing the practice of management (Woodruff, 1997).

The common perspective of the term *value* is that creating and delivering superior customer value to high-value customers will increase the value of an organization (Slywotzky, 1996). This interpretation reflects customer value from an organisation's perspective where value is quantified in monetary form. This view is shared by Anderson *et al* (1993, p.4) when they interpret value in business markets as the *"perceived worth in monetary units of the set of economic, technical, service and social benefits received by a customer firm or person in exchange for the price paid for a product, taking into consideration the available suppliers' offerings and prices"*. Customer value, on the other hand, takes the perspective of an organisation's customers, considering what they want and their belief that they get it from buying and using a seller's product or service.

According to Lovelock (1998), customer value is the sum of all the perceived benefits (gross value) minus the sum of all the perceived costs. In the modern consumerist market place, customers are provided with multiple choices in regard to products and services. In general, customers estimate the value of each choice they have, and select the alternative that will deliver the most value. Value is therefore the relationship between price and quality (Kotler and Fox, 1995) or the market perceived quality adjusted for the relative price of your product (Gale, 1994).

Based on the marginal utility hypothesis, Anderson and Narus (1998) provide a similar definition of value in business markets but focus more on the monetary worth of the technical, economic, service and social benefits a customer company receives

in exchange for the price it pays for a market offering and its alternative. The essence of their definition of value is captured in the following equation.

$$(Value_s - Price_s) > (Value_a - Price_a)$$

Where, $Value_s$ and $Price_s$ are the value and price of a supplier's market offering and $Value_a$ and $Price_a$ are the next best alternative. The difference between value and price equals customers' incentive to purchase. The equation conveys that the customers' incentive to purchase a supplier's offering must exceed its incentive to pursue the next best alternative.

Another perspective of customer value, again based on the marginal utility hypothesis, is that it represents a trade-off between the qualities or benefits that buyers perceive in the product relative to the sacrifice they perceive by paying the price (Anderson and Narus, 1998). Similarly, it is an emotional bond established between a customer and a producer after the customer has used a salient product or service produced by that supplier and found the product to have provided added value (Butz and Goodstein, 1996).

Further empirical research (Gardial *et al,* 1994; Richins 1994; Woodruff et al, 1991; Zeithaml, 1988) have linked customer value with both desired and received value and emphasised that value stems from customers' learned perceptions, preferences and evaluations.

Despite the diversity of views expressed above, there appears to be some commonality among these definitions. First, customer value is inherent in or linked through the use of some product or service. This characteristic distinguishes customer value from personal or organizational *'values'* associated with beliefs about right and wrong, good and bad that cut across situations and products or services (Gardial *et al,* 1994). Second, customer value is something perceived by customers rather than objectively determined by a seller. Finally, these perceptions involve a trade-off between what the customer receives (eg. quality, benefits, worth, utilities) and what the customer gives up to acquire and use a product (eg. price, opportunity cost).

Porter (1985) emphasized the importance of value addition in competitive strategy and offered three alternative 'generic strategies' that a firm can follow to improve its competitive advantage: cost leadership (that is, cost effectiveness and reduction), differentiation (innovation) or focus (quality enhancement). In order to determine a firm's relative cost position, Porter (1980) introduced the *'Value Chain'* concept, which identifies activities, functions and business process that have to be preformed in designing, producing, marketing, delivering and supporting a product or service. However, Porter's work has been criticised for being too system driven, concentrating on the company, its industry and its location and suffers from the absence of a people perspective. Most of Porter's writings, especially his earlier work, focus on external strategy: on what firms should do to make a profit, based on where they position themselves in the marketplace. But the direction of strategy now focuses much more on what firms should do internally to enhance competencies or capabilities and to enhance customer value (Thatcher, 1997).

Chatterjee (1998) points out that Porter's productivity frontier (which determines the trade-off between cost and quality) is a wrong approach and instead, firms should try to approach the *'value frontier'* to provide more and more value to customers – either by lowering prices or at least holding them steady. It is argued that by focusing on outcomes rather than processes, firms can be more creative and be able to reconfigure their value chains to deliver more value to customers.

The value concept has similar application in the education services industry where the success rests with the degree of customer satisfaction and customer value generated by education institutions. The satisfaction is determined by the difference between service performance as perceived by the customer and what the customer expected: perceived performance and expectations (Kotler and Fox, 1995). In general, customers estimate the value of each choice they have and select the alternative that will deliver the most value for money. According to Kotler and Fox (1995), students select the university that will provide the best educational experience and career outcomes, the faculty or staff member selects the job offer that provides the blend of income, location and work situation preferred. From the standpoint of the institution, the resources used in delivering the satisfactions that its constituents desire have a cost. From the customer's standpoint, acquiring the desired satisfactions has a cost,

which includes money spent, plus time, effort, and opportunity cost. The value received therefore is a matter of customer perception and judgment, not of the monetary price paid or the monetary costs alone (Kotler and Fox, 1995).

The concept of customer value suggests a strong relationship to customer satisfaction. (Schumann *et al*, 1990). Both concepts describe evaluative judgments about products and both place special importance on the use situation. Overall satisfaction is generated through customer's feelings in response to evaluations of one or more user experiences with a product or service.

In view of the above, the customer value concept becomes an important management tool but its applicability rests with how far and how much the customer value delivery strategies are shared within the organization. The challenge to managers is to find out the difference between what they consider as customer value and what customers perceive as value (Parasuraman, Berry, and Zeithaml, 1985; Sharma and Lambert, 1994). Such gaps can create potential barriers for organizations in the delivery of value to customers. One way of overcoming such problems is through the customer-learning processes. An organization benefits from customer value learning when (1) learning shapes managers' mental models of their customers and (2) these mental models guide actions taken to achieve superior customer value delivery performance (Senge, 1990)

As Day (1990) points out, competing on superior customer value requires more than a set of customer value tools for managers, it also entails making major changes in the way organisations are managed. The question is whether an organisation can make the needed changes. With regard to customer value, many organizations, perhaps unintentionally, erect barriers that keep them from shifting from an internal orientation to one that encourages competing on superior customer value delivery (Day, 1994 and 1990; Gale, 1994). To build customer value delivery capability often requires finding and overcoming organisational culture, procedural and learning barriers. The initial challenge is to recognise that they exist. Organisational culture barriers are the most difficult to overcome as they are embedded in the organisational culture, particularly the existing employee performance measurement and reward systems. Such behaviour may indicate a lack of rewards for customer value learning

or a lack of understanding of the link between customer learning and performance on those things that are rewarded. The outcome of such an attitude is organisational inability to serve the customer well enough to build customer loyalty through satisfaction (Senge, 1990; Day, 1990).

Several authors (Chatterjee, 1998; Thatcher, 1997; Mazzarol, 1994) have laid emphasis on the *outcomes* to offer value to customers. They argue that customer value creation in a firm is a process where both internal and external outcomes interact with each other to add value to the seller's offerings. In the case of a service industry such as education, external (visible) outcomes are more important to create the *'tangibility'* of the services provided as the customer's perception of value and satisfaction is influenced by this tangibility factor. In this context, it may be argued that every firm needs a list of external (visible) outcomes that are valuable to its customers and the internal outcomes that apply to internal processes. Chatterjee, 1998 and Mazzarol, 1994, assert that organisations should invest on the crucial external outcomes to differentiate itself regardless of its generic strategy in order to reach the value frontier. The internal outcomes help at the margin by pushing the cost of activities down and it is necessary that the firm becomes efficient in the internal outcomes to allow the firm to reach the value frontier at the least cost (Chatterjee, 1998).

The above discussion emphasises the importance of creating customer value in service industries such as education. Without customers, a business has no reason to exist (Hoffman and Bateson, 1997). For any business organisation, the customer value creation is an essential undertaking to maintain its strategic positioning and competitive edge over its competitors. It remains a key differentiator of its business and an ongoing but extremely challenging exercise that requires continuous efforts to sustain the desired customer value.

The long-term sustainability of Australia's international education industry may depend upon the country's ability to develop a reputation for excellence in the delivery of education that is valued by its customers to enable the country to attract international students (Mazzarol, 1994). The external and internal outcomes outlined above play an important part building this strength. Australian universities could

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leverage this strength to develop the reputation for excellence in delivering superior customer value through its services.

2.6. Culture.

The academic literature is replete with cross-cultural research explaining the behavioural characteristics of different nationalities based on their values and beliefs. Kluckhohn and Strodtdeck (1961), Hofstede (1980) and Triandis (1995) are among the leading researchers who studied comparative differences between cultures of the world. Marketing theorists agree that culture, as well as cultural values, is one of the underlying determinants of consumer behaviour. However, there has been little research relating to services marketing in a non-western context (Donthu and Yoo, 1998). Yau (1994) asserts that only a limited empirical work has been conducted to examine how cultural values impact on consumer behaviour. This position is endorsed by Leo *et al* (1999), who found that only 5% of all articles published in four leading marketing journals between 1991-96, were related to cross cultural business studies, and very few authors have written on cross cultural consumer research. Henry (1976) was among the pioneers in examining the relationship between culture and consumer behaviour, adopting value orientations of Kluckhohn and Strodtdeck (1961) in order to interpret the behaviour of American families in purchasing cars.

The studies undertaken to identify the type of differences that exist between cultures of the world can be broadly categorised under *cultural values* and *personal values*. The *cultural values* are concerned with the values shared and affirmed by other members of an explicit culture or society and may have some impact on their activities. These are termed as the *normative beliefs,* which individuals have about how they are *expected* to behave by their culture. *Personal values,* on the other hand, are the beliefs of individuals in the culture (Yau, 1994). For example, *"Chinese believe that harmony with other people and nature is not a personal value but a cultural value"* (Yau, 1994, p.49). Personal values are a product of cultural values, but they are reshaped or moderated by the environment. It is likely that the intensity of the original cultural values may not be present in personal values and personal values may also represent a sub-culture of the society (Yau, 1994).

One of the earliest studies conducted on cultural values is by Kluckhohn and Strodtdeck (1961) who advanced a comparative model aimed at explaining the differences in cultural groups on the basis of their "orientations" towards the world and other people. The model distinguished six basic orientations. These included (a) *the nature of people*, (b) *the person's relationship to nature*, (c) *the person's relationship to other people*, (d) *the modality of human activity*, (e) *the temporal focus of human activity*, (f) *the conception of space*. Yau, (1994) adapted these in terms of five major value orientations to analyse Chinese culture: *man-nature orientation*, *man-himself orientation*, *relational orientation*, *time orientation*, and *activity orientation*. The *man-nature orientation* deals with the degree to which optimism or pessimism in a culture is valued, while *man-himself orientation* describes the degree to which domination or fatalism is valued in regard to life and nature. *Relational orientation* is associated with the value of individualism versus collectiveness, which refers to the relations with other people and *time orientation* deals with the time horizon wherein some cultures demonstrate a short term orientation with the belief that better future of the human activity can be planned and controlled without referring to the past while some others base their decisions on lessons learnt from the past. The *activity orientation*, on the other hand, is associated with action and performance for success in the present life and activities connected with aspirations in the next birth. For example some cultures are more inclined towards gains and achievements in present life, while the tendencies of some others are achievements beyond the current life. The two extremes of these orientations can be related to Western and Eastern societies of the world, particularly the Asian, where one could also find national and regional differences in these orientations.

Hofstede (1980) made a significant contribution to literature on culture in his study on international differences in work related values. He developed four cultural dimensions to distinguish Eastern and Western societies and discussed how they would influence the behaviour of people of different nationalities. It is clear that Hofstede (1980) was influenced by past scholars in this area as some of the cultural dimensions are similar to those advanced by Inkeles and Levinson (1954) and Kluckhohn and Strodtdeck (1961). Hofstede's research compared work-related values across a range of cultures and these were plotted across the four cultural dimensions (Power Distance, Uncertainty Avoidance, Individualism versus Collectivism and

Masculinity versus Femininity), which were largely independent of each other. The countries investigated in this thesis: China, India, Indonesia and Thailand are included in Hofstede's analysis and though they share similar characteristics in terms of the four dimensions, relative differences between these national groups have been highlighted in Hofstede's study.

Hofstede's dimensions are however criticised on the basis that they assume homogeneity of cultures in national territories thus ignoring the diversity of cultures present in nations. Another criticism is based on the issue of replication of his research as it is based on one single industry (computer). Some observers also point out technical difficulties in his research, particularly in regard to connotations and interpretations of the dimensions. A study by Manchachitara et al, (1999) disputes the collectivist classification attached to Thai society by Hofstede. This study, based on two service industries, claims that there are unique cultural aspects that make Thai society almost individualistic. Despite the limitations and the new developments in the world's geo-political environment (e.g. break-up of Yugoslavia into several distinct cultural entities) the relevance of Hofstede's research in cultural studies has not diminished. Moreover, the usefulness of his four dimensions in different cultural settings has been largely confirmed in many studies (Yau, 1994).

Recently published empirical studies have started to investigate how these cultural dimensions influence satisfaction and perceived service quality (Donthu and Yoo, 1998; Mattila, 1999; Furrer et al, 2000, Winsted, 1997). Winsted (1997) examined how consumers in the United States and Japan evaluate service encounters by developing behavioural-based service encounter dimensions for the two countries. She identified significant cross-cultural differences in these dimensions. Mattila (1999) examined the impact of culture on customer evaluation of complex services and found differences in the behaviour of Westerners, Asian Chinese, and Asian Indians. For example, the customers with Western cultural backgrounds were found to be relying more on tangible cues from the physical environment to evaluate service quality compared to their Asian counterparts. In a major study, Yau (1994) investigated the interrelationships among cultural values, situational factors, experiences, expectations, performance, disconfirmation and satisfaction in relation to Chinese culture. One of the oldest and conservative cultures in the world based on the

orthodox doctrine of Confucianism, Chinese cultural values have undergone rapid change. However, researchers have found that, despite the radical changes in the society, some of the traditional Chinese values are still shared by both the young and the old, and the doctrine of Confucius is still *"a basic pillar of Chinese life today"* (Yau, 1994, p.67). Yau (1994) adapts the value orientation model of Kluckhohn and Strodtdeck (1961) in developing a cultural value scale for the study, acknowledging the modern influences on the Chinese culture. Some of the aspects relevant to this thesis are discussed below.

In relation to the man-to-nature orientation, Yau, (1994, p.70) confirms that a *"Chinese consumer who holds to this value would generally have low expectations of the product that he is going to purchase or consume."* Commenting on satisfaction formation among Chinese consumers, Yau (1994) draws on *Karma (Yuarn)*, or fate, which is one of the most important doctrines in Chinese culture, and states that it is normal for a Chinese to be less dissatisfied when the performance of the product does not meet one's expectations. This is due to the Chinese tendency to attribute failure of products to fate than to any other reason. Thorelli (1982) provides evidence of this value orientation in practice in his research and confirms that this attitude discourages them from complaining about products not meeting expectations.

In the case of man-to-himself orientation, the Chinese culture promotes the value of abasement. The respect for the teacher, calling oneself *"the worthless"* is still common in Chinese society (Yau, 1994). This orientation has made Chinese to be less aggressive in expressing opinion, fearing that it will embarrass or offend others. This would have implications on the complaining behaviour of students from China.

The Chinese also have a strong respect for authority, an aspect of the relational orientation within its culture. It has early roots in Confucius's five cardinal relations, which emphasise hierarchical and structural interactions. With the cultural value of respect for authority, it is common for Chinese to accept what the authority dictates, without discord (Yau, 1994; Thorelli, 1982).

Hofstede (1980) discusses group orientation in his research where Chinese together with other Asian cultures are categorised as *collectivistic*. The collectivistic nature of

the Chinese is reflected in the Chinese family and kinship system, which is based on interdependence. One of the major characteristics of a *collectivistic* culture is its reliance on an informal channel of communication among members, which is largely based on word-of-mouth communication.

The past-time orientation of the Chinese culture is characterised by its respect for the past, or almost veneration of history. With the belief in the continuity of its interrelations with others, loyalty becomes one of the major attributes of Chinese culture, which would have an impact on marketing. The interpretation given by Yau (1994) is that such orientation makes Chinese to be highly brand loyal and unless the product or brand performs very poorly they are not likely to switch to other brands or products.

The personal activity orientation of the Chinese implies strict observance of the accepted code based on Confucian principles. One of the possible marketing implications of this value is the complaining behaviour (Yau, 1994). As mentioned earlier, Chinese tend not to take public action of complaining as it is considered something very serious.

No detailed studies relating to Indian, Indonesian and Thai cultures are available in the literature apart from the broad classificatory studies undertaken by Hofstede (1991 and 1980) and Triandis (1995). These studies have classified all Asian countries to be collectivist, and high context cultures though attempts have been made to show differences between the nationalities with regard to these characteristics in individual cultures. For example, in Hofstede's study, Indian culture is identified as more individualistic with larger power distance compared to Thai, Indonesian or Chinese culture, which are categorised as more collectivist with large power distance. Similarly Indian culture is identified as masculine with weak uncertainly avoidance compared to the Thai culture, which is categorised as feminine with strong uncertainty avoidance. Schutte and Cialante (1998) assert that although the differences within Asia are less significant than the differences from the world outside Asia, cultural heterogeneity among Asians cannot be denied. One major trend that has led to significant changes in the values and social structures, according to these

authors, is the rapid economic growth of the Asian economies (Schutte and Cialante, 1998).

Donthu and Yoo (1998) and Furrer *et al* (2000) analysed the effect of customers' cultural orientation on their service quality expectations based on Hofstede's dimensions of culture and the dimensions of service quality from the SERVQUAL scale developed by Parasuraman *et al* (1991 and 1985). The studies confirmed the impact of culture on expectations and the perceptions of the performance of services analysed.

In a more recent study by Ueltschy and Krampf (2001), cultural sensitivity to several existing scales for measuring satisfaction and service quality was tested with a sample of adult university students belonging to Mexican American and Anglo American communities. The results indicated that culture is a major factor influencing the differences in the level of service quality perceived and satisfaction expressed between the two sample groups.

The empirical evidence suggests that the estimation of the impact of the cultural background on the evaluation of the quality of service of a firm or institution would provide valuable input for international market segmentation and resource allocation across different service quality dimensions. It is argued that if there is a variation in the relative importance attached to the different service quality dimensions, then resource allocation should be guided by such differences. Cultural differences and international market segmentation have been the subject of controversy over the degree to which marketing activities could or should be standardised globally and the degree to which they should be localised (Levitt, 1983). Standardisation, an important outcome in the process of globalisation, could cause some problems in services, given their unique characteristics. Lovelock and Yip (1996) categorised services into (a) people processing services that involve tangible actions to customers in person (b) possession-processing service that involve tangible actions to physical object, and (c) information-based services that create value through collection, manipulation, interpretation and transmission of data. Out of these, people processing services, where there is a high degree of interaction between the customers and service

personnel, the cultural elements seem to have the greatest influence (Furrer *et al*, 2000).

University education is a service characterised by a high degree of interaction between students and the universities as service providers. Given the cultural diversity of the target student groups in this study, it is logical to expect variances in the level of importance given to services provided by the university and as a result differences in the satisfaction outcomes by nationality of the students in relation to their university life.

2.7. Theory of Cognitive Dissonance

The post-purchase evaluation of a service is a complex process. It begins soon after the customer makes the choice of the service institution he or she will be using and continues throughout the consumption and post-consumption stages (Lawson *et al*, 1996). During this stage, consumers may experience varying levels of *cognitive dissonance* - doubt that the correct choice has been made resulting in some form of regret. The theory of cognitive dissonance was proposed in 1957 by Leon Festinger as a psychological state that results when a person perceives two cognitions (thoughts), both of which the person believes to be true, do not '*fit*' together or they seem inconsistent (Lawson *et al*, 1996). Dissonance can arise in three basic ways. First, any logical inconsistency can create dissonance. Secondly, dissonance can be created when people experience inconsistency either between their attitudes and their behaviour or between two of their behaviours. Thirdly, dissonance can occur when a strongly held expectation is disconfirmed. The interaction between expectations and actual product performance produces satisfaction or dissatisfaction. However, there does not appear to be merely a direct relationship between the level of expectations and the level of satisfaction. Instead a modifying variable known as '*disconfirmation of expectations*' is thought to be a significant mediator of this situation. When a consumer does not get what is expected, the situation is one of disconfirmation. Such disconfirmation can be of two varieties: a positive disconfirmation occurs when what is received is better than expected; and a negative disconfirmation occurs when things turn out worse than anticipated (Lawson *et al*, 1996; Oliver, 1996).

Marketing theory explains that when consumers experience dissatisfaction several negative outcomes are possible. Consumers may exhibit unfavourable word of mouth (WOM) communication may not repurchase the product and engage in complaining (Harvis *et al*, 2000; Yau, 1994).

The WOM process is considered as one of the most powerful forces in the market place in view of its highly persuasive character (Harvis *et al*, 2000). In most occasions, consumers tend to rely on informal and/or personal communications sources in making purchasing decisions. As discussed in section 2.4 above, Asian societies use reference groups (families, friends and others in authority) in their decision-making process (Duan, 1997; Lawley, 1998,1993), and WOM is an integral part of this process. Yau (1994), in his analysis of the Chinese culture confirms the importance of WOM. This is more evident in a high involvement professional service like education as evidenced by research undertaken to prove that students rely on family and friends for advice on their choice of study destinations (Lawley, 1993, 1998; Duan, 1997). During the post consumption process, highly satisfied students recommend programs, return as graduate students and recruit prospective students and there is a strong likelihood that the same students would become good alumni of the universities (Guolla, 1999). Though the importance and usefulness of WOM has been acknowledged in the literature, empirical research on the effects of WOM on the receiver's choice decisions is very limited (Harvis *et al*, 2000).

When dissonance occurs, consumers themselves strive to reduce it by changing their evaluation of the alternative, seeking new information or by changing their attitude. Marketers are required to formulate appropriate strategies to minimise the impact of such behaviour by customers and create a positive reinforcement of the customer's decision. In the context of university education, it is the responsibility of the university to identify the causes and the nature of dissonance among students and to take remedial action to minimise the negative impact of such behaviour.

The current literature on international education does not specifically point to the factors that are likely to cause post-purchase dissonance. However, most of the factors identified as reasons for choice of a destination or institution could be analysed for this purpose. As mentioned above, Lawley (1993) identified 20 different reasons for

choice based on past literature and her own research. Additional factors were identified by other researchers, such as quality of information provided (Vicziany, 1995a, 1995b, 1995c), ethical behaviour of recruiting agents and Australian educational institutions (Vicziany, 1995; Beng and Olsen 1999), professional edge and benefits (Cannon, 1997), value and recognition of qualifications and the applicability of training to home country (Cannon, 1999), cultural diversity (Mak *et.al*, 1997), student support services (Beng and Olsen, 1999) and racism (Lawley, 1997; Vicziany, 1995). These factors will be included in the study supplemented by any new factors identified during the exploratory research phase of this study.

2.8. Summary

This chapter reviewed the existing literature related to customer satisfaction preceded by a brief introduction to international education as a background. Research themes identified during the review of literature on customer satisfaction and international education included the choice of study destinations, service quality, internationalisation of curriculum, student experiences in study destinations, study outcomes in home country, marketing practices and government policies, which will be relevant to the analysis undertaken in the study. It was observed that customer satisfaction is a difficult concept to define given that the formation of satisfaction during the post-choice evaluation is a complex process. It is subject to influences of the quality of service delivery, cultural differences, customer value creation and many other unknown variables. The impact of the cognitive dissonance, which is closely linked with the satisfaction formation process require attention by universities.

The next chapter will discuss the theoretical and conceptual framework that will be employed by this study.

Chapter 3

Theoretical and Conceptual Framework

3.1. Introduction

The purpose of this chapter is to present a theoretical and conceptual framework and a preliminary model of post choice satisfaction, which will be employed by this study. The final model will be developed and presented in chapter 4, following preliminary analysis of data. The theoretical and conceptual framework is based on the findings presented in the literature reviewed earlier. The model provides the framework for the research design and data analysis. The following theories and theoretical frameworks serve as a foundation to the proposed model of post-choice satisfaction and the ensuing discussion will highlight the relationship and the influence of these theoretical concepts in relation to the development of the model.

Two dominant concepts in the customer satisfaction and service quality literature are *expectations* and *perceptions*, which are key inputs in the model developed for the current study. Many researchers and practitioners agree that expectations serve as a comparison standard to judge the performance of the service delivery as perceived by the customer (Pierre -Yves and Phillipe, 2002; Limaye, 2000; Halstead, 1999; Boulding and Kalra, 1993; Boothe, 1990; Tse and Wilton, 1988; and Oliver and DeSarbo, 1988). The following is a brief review of these concepts.

3.2. Expectations

Customer expectations are pre-trial beliefs about a product or service (Olson and Dover, 1976). Expectations are formed with the aid of different sources of information, which include prior exposure to service, word of mouth, expert opinion, publicity, and communications controlled by the firm or institution (for example, advertising, personal selling and price), as well as prior exposure to competitive services (Zeithaml *et al*, 1990).

Though there is consensus among researchers on *expectation* as a comparison standard for customer satisfaction, differences with regard to the conceptual definitions of the expectations construct are presented. A comparison standard refers to the referent used by customers to evaluate product or service performance and form disconfirmation and satisfaction judgements (Halstead, 1999). Oliver (1980) was the first to conceptualise the notion of *predictive expectations* (predictions about a product's overall performance or attribute levels) as a pre-purchase standard. The consumer judgements of satisfaction or dissatisfaction result from the process of confirming or disconfirming prior expectations. The expectancy-disconfirmation paradigm was a major issue in the early research by Cardozo (1965); Olson and Dover (1976); LaTour and Peat (1979); Oliver (1980); Churchill and Suprenant (1982); and Bearden and Teel (1983).

Bearden and Teel (1983) and Westbrook and Newman (1987) view expectations as the primary perception of the likelihood (or probability of occurrence) of some event while some others (Churchill and Suprenant, 1982; Oliver, 1980 and 1981; Tse and Wilton, 1988) contend that expectations are both an estimate of the likelihood of an event and an evaluation of the 'goodness' and 'badness' of the event.

The evaluative element of the latter description of expectations may confound a person's judgement of an event with an expectation of the likelihood of its occurrence (Spreng *et al*, 1996). This is because such evaluations could involve several other standards of comparison (eg. desires, industry norms, equity, best brand). Spreng *et al* (1996) argue that one should avoid confounding *predictive expectations* (what a person believes is likely to happen in the future) with these judgements and agree with the definition of Olson and Dover (1976) of expectations as beliefs about product attributes or performance at some time in the future.

Miller (1977), identified four types of expectations - *the ideal* (what performance *'can be'*), *the expected* (what performance *'will be'*) *the minimum tolerable* (what performance *"must be"*) and the *desired* (what performance *"should be"*). According to Miller (1977), the satisfaction process "sorts out" different types of expectations in

purchase and consumption situations, the end results being different. His suggestion for 'latitudes' of satisfaction and dissatisfaction is based on this premise.

Recent studies on customer satisfaction have argued that there are other comparison standards that are appropriate to measure satisfaction. The recent thrust for re-examination of the traditional expectation construct and the use of alternative or multiple comparison standards has presented a challenge as well as added further complexity in regard to choosing an appropriate comparison standard for customer satisfaction (Droge and Halstead, 1997; *et al*, 1993 and 1991; Zeithaml et al, 1990; Spreng and Olshavsky, 1993; Boulding *et al*, 1993; Gardial *et al*, 1994). Droge and Halstead (1997) have found that satisfaction research in the past two decades has focused on identifying additional antecedent variables to improve explanatory power, beyond expectations and disconfirmations. They argue that this is a positive development for satisfaction research. They cite the example using non-choice alternatives as a comparison standard to measure post-choice satisfaction. Which of these alternatives are processed post choice and in what context is still unknown and therefore, authors assert, that future research should be channelled towards these important areas. The lack of consensus on the comparison standard and the actual nature and meaning of the construct used continues to be a debatable issue in satisfaction research.

Halstead (1999) identified over 30 research studies on the use of comparison standards in customer satisfaction research and management since 1982. Appendix 2 provides a summary of these studies, which shows the attempts to identify standards other than expectation as a comparison standard given the complexity involved in the satisfaction formation process. In her review of the literature, Halstead (1999) identified three major trends in the use of comparison standards for measuring post choice satisfaction. The first is the use of more than one type of expectation (following Miller, 1977, as discussed above). The second is based on the timing of comparison standard measurement ascertaining whether the expectation should be measured before or after product or service exposure. Researchers have differed in their opinions on the implications of the two situations. While Droge and Halstead (1991) have found a negative relationship between expectations and satisfaction when expectations were measured after product or service exposure, Anderson and Sullivan

(1990) found it to be a positive relationship. In measuring expectations before product or service exposure, Tse and Wilton (1988) and Oliver and Sarbo (1988) found a positive relationship between expectations and satisfaction. The third is moving away from a single comparison standard in favour of multiple or unique standards that might include expectations (Spreng *et al*, 1996; Woodruff *et al*, 1988, 1983). Customer expectation as a standard has not been discounted in any of these studies, though investigations have revealed that there are other factors such *as experience-based norms* and *desires* that would override expectation as a standard in certain circumstances.

For example, Woodruff *et al* (1983) introduced *experience-based norms*, which incorporated consumer's past experience with other brands of a product category as consumers' standard of comparison. Spreng and Olshavsky (1993), on the other hand, used *desires* as a comparison standard in their model in addition to expectation, and found that *desires* had a stronger impact on satisfaction. *Desires* are the attributes and benefits that consumers believe will lead to higher level values and guide their behaviour (Halstead, 1999). It is argued however, that the idea of *desires* is closely aligned to Tse and Wilton (1988) *ideal* standard following Miller's notion of *ideal* expectations (Halstead, 1999).

Tse and Wilton (1988), Oliver and Swan (1989) and Woodruff *et al* (1991), also proposed *equity*, which refers to the fairness or rightness of something in comparison to other entities, as a comparison standard. However, in subsequent research by Oliver (1996) noted that *equity* is considered more as a process of comparison rather than a comparison standard and also has been found to be not significant as a predictor of satisfaction.

The drawbacks with the broadening of the comparison standard construct are two fold. First, such multiple standards result in variation in their theoretical relationships with satisfaction, other satisfaction antecedents (eg, disconfirmation), and satisfaction outcomes (Halstead, 1999). This is because theoretical relationships vary depending on the type of standard employed (Oliver 1977 and 1996; Halstead 1993; Tse and Wilton 1988; Cadotte *et al* 1987) and would have different effects on satisfaction (Tse and Wilton, 1988). Secondly, a lack of consensus on the exact nature and meaning of

the construct require standardisation of terminology based on conceptual development and measurement (Halstead, 1999).

The model used in this study uses expectation as a comparison standard to measure students' satisfaction. The use of expectation as a comparison standard is widely supported in the satisfaction and service quality literature (Oliver 1980 and 1996; Zeithaml *et al*, 1990; Tse and Wilton 1988; Anderson and Sullivan 1990). Moreover, customer's ideal expectation reflecting customer's most desirable expected outcomes is used as the comparison standard - arguably more stable over time than other forms of expectations (Boulding and Kalra, 1993)

3.3. Perceptions

Perception is defined as the *"process by which an individual receives, selects and interprets stimuli to form a meaningful and coherent picture of the world"* (Schiffman *et al*, 2001, p148). In customer satisfaction and service quality literature, perceptions are defined as the consumer's judgement of the service organisation's performance. The perceived quality construct developed by Parasuraman *et al* in 1988 with its SERVQUAL instrument, is defined as the difference between perceptions and expectations. Many researchers (Carman, 1990; Finn and Lamb, 1991; Peter *et al*, 1993) support the theoretical basis of the construct despite their criticisms of SERVQUAL on operational aspects.

Boulding and Kalra (1993), in their process model of service quality, conceptualise customers' perception of each of the dimensions of service quality as a cumulative construct. This means that the perception is updated each time a customer is exposed to the service. They argue, therefore, that customer perceptions are not only influenced by expectations of the service but also by the recency of the service encounter. Sue (2001) in her analysis of student perceptions of study outcomes, asserts that the length of experience with an educational service can influence student perceptions. If two customers enter the encounter with different expectations, they would have different cumulative perceptions of the service, even if both customers experience an identical service. The main argument is that a person's expectations can change the way he or she perceives reality. Boulding and Kalra (1993), conclude that

it is important to understand the type of expectation of the customer in order to manage the perception of service quality and satisfaction.

The customer perceptions of post consumption performance are appraisals and feelings about a chosen alternative and consumers react to it on an objective (product or service-attribute) level as well as on a subjective (emotional) level (Neelamegaham and Jain, 1999). Because of this, researchers acknowledge diversity of perceptions as one of the most fundamental concepts in intercultural communication (Limaye, 2000). According to Jandt (1995), perception is unique to each person, it being a three-step process of selection, organisation and interpretation. It has also been found that perceptions differ due to differences in gender (Ndhlovu and Senguder, 2002; Lin *et al*, 2001), physical environment of the service settings (Wakefield and Blodgett, 1999), and cultural background (Limaye, 2000). These findings indicate that a clear understanding of how perceptions are formed is critical to any service business as it facilitates formulation of strategies to manage customer perceptions of service performance.

In this study student perceptions of the performance of universities are based on "ideal" or "desired" expectations. Under the paradigm of *service-recipient* which considers students as customers (Havarnek and Brodwin, 1998), universities need to be highly student-focused in their service delivery. The evaluation of the quality and performance of a service such as university education can take place only after experiencing or consuming because customers have limited tangible pre-choice cues. The perceptions formed during this evaluative process are key indicators of customer satisfaction or dissatisfaction (Halstead *et al*, 1994).

3.4. Consumer decision making process

3.4.1. Pre-choice (Pre-purchase) stage

Consumer decision-making has been studied for over two decades and researchers have advanced multi-disciplinary theoretical and conceptual frameworks over time to interpret the complex process. The resulting models provide somewhat different views of the consumer's decision-making process. This section will review some of

the key models of consumer decision-making to provide a background to the model developed in the present study. Some of the well known and those representative of the broader perspective of consumer decision making include the Economic model, Passive model, Cognitive model and Emotional model (Schiffman *et al*, 2001; Lawson *et al*, 1996).

Economists were the first to develop comprehensive consumer models of decision-making seeking to understand the general economic system. These include contributions by Simon (1957); Arrow and Hurwicz (1972); and Keeny and Raiffa (1976). Micro and Macro economists developed alternative views of consumers, though the fundamental assumptions remained the same. The economic theory of consumer decision-making behaviour was based on the basic assumption of maximising satisfaction of wants and needs with the available scarce resources (Schiffman *et al*, 2001; Lawson *et al*, 1996).

The passive model of consumer decision-making is different from the economic viewpoint as it is based on the belief that consumers are submissive to the self-serving interests and promotional efforts of marketers. In this context, consumers are perceived as impulsive and irrational purchasers, ready to yield to the arms and aims of marketers (Schiffman *et al*, 2001; Lawson *et al*, 1996).

The cognitive model views consumers as *information processing systems,* actively seeking products and services that fulfil their needs and enrich their lives. This model focuses on the processes by which consumers seek and evaluate information about selected products and services and accept that the consumer does not make economically rational decisions. (Schiffman *et al*, 2001). This model is widely applied in the marketing literature.

The emotional model follows the concept of consumer decision-making based on deep feelings and emotions or impulses. Such emotional purchase decisions place less emphasis on the search for pre-purchase information (Schiffman *et al*, 2001). The cognitive or problem solving model of decision-making has been identified at three levels – extensive problem solving, limited problem solving and routinised response behaviour (Howard and Sheth, 1969). This model borrows from learning-theory

concepts to explain *"brand-choice behaviour over time as learning takes place and the buyer moves from extensive to routinised problem-solving behaviour"* (Lawson *et. al*, 1996, p.672),

A more specific model of significance in explaining the consumer decision-making process is one developed by Engel, Kolat and Blackwell (1973). The EKB model (Engel, Kolat and Blackwell) incorporated both products and services for high involvement decisions. The revised EKB model, known as EBM model (Engel, Blackwell and Miniard, 1986) explores the extended problem solving decision process of a high professional service applicable to the higher education service for international students.

Kotler (1975) proposes a model reflecting the process of selecting colleges (universities) by high school students within the US. He described the university selection process as being essentially funnel-like. This model is shown in Figure 3.1.

Figure 3.1: University selection process
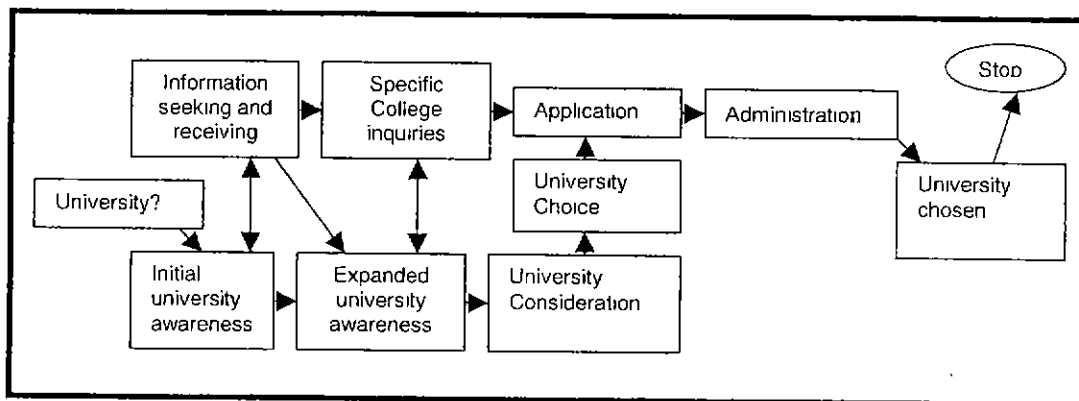
Source: Kotler, 1975,p.89.

Lawley (1993) developed a more descriptive model adapting the consumer decision-making model of Engel Blackwell Miniard (EBM), to analyse how students from Hong Kong select a university. This was shown as a multi-step process, similar to the interpretation of Kotler (1975) in his presentation on the selection of a university by students. Lawley's focus was on the factors influencing the process of selection of a university and subsequently Lawley and Blight (1997) developed a model adding

different dimensions and linking them with intention and choice. Figure 3.2 shows the model developed by Lawley and Blight (1997).

Figure 3.2: Model of university choice by international students
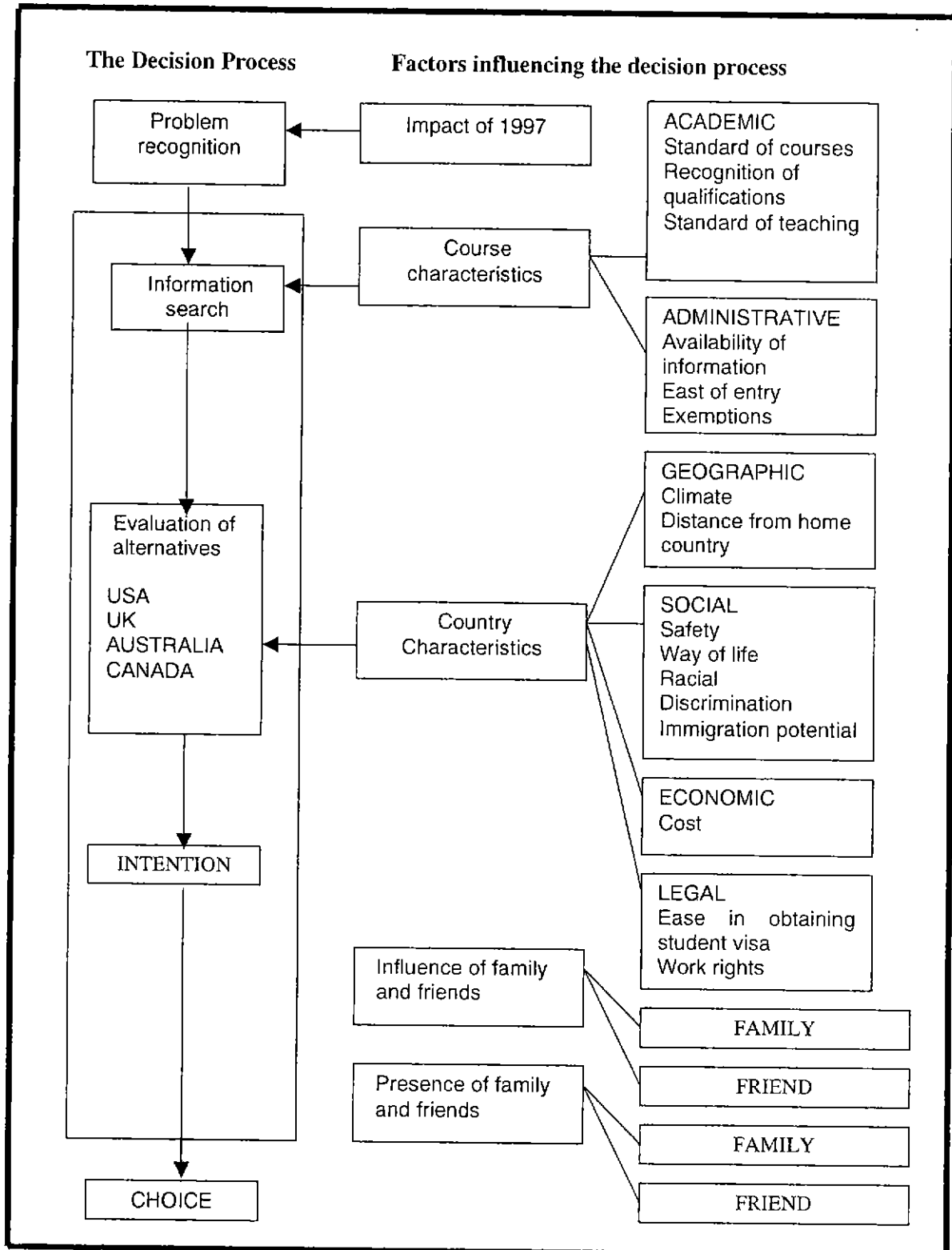
Source: Lawley and Blight (1997)

A similar but more restricted study undertaken by the University of Wollongong presented an extended decision-making model confirming university selection as a multi-faceted process, based on the EBM model (Hill *et al*, 1995).

The emphasis of the above models is on the pre-choice (pre-purchase) phase of the consumer decision-making process. Though the focus of the model developed for the present study is the post-choice (post-purchase) stage of the consumer decision process, it draws heavily on the above models in regard to the theoretical concept and framework. In particular, the choice factors and variables used in the models developed by Lawley (1993), and Lawley and Blight (1997) have become inputs as some of the key variables for post-choice satisfaction measures, among the other variables operationalised.

3.4.2. Post-choice (Post-purchase) stage

Post-choice behaviour of customers is largely related to the evaluation of the choice made by the customer. Consumers tend to rethink their decisions in the light of the experience with the product and service during this stage because of the uncertainty of the wisdom of their decisions (Lawson *et al* 1996). Satisfaction is an important element in this evaluation process.

Figure 3.3 below represents the post-choice phase of the decision making process which forms the basis of the model developed for the thesis. The post-choice phase of the decision making process is in bold outline and shaded areas represent the outcomes.

Oliver (1996) articulates the impact of choice criteria and satisfaction drivers during this phase. He argues that there is a difference between the choice criteria and the satisfaction drivers. Therefore, consumer's satisfaction response is not influenced solely by the choice criteria, which are the variables responsible for making a choice, but also by other factors not related to the pre-choice stage. One supporting argument is that satisfaction results from the experience of feature or service performance and some of these pre-choice criteria may not provide the experience required to create a satisfaction response.

Figure. 3.3: Post Choice Decision Making
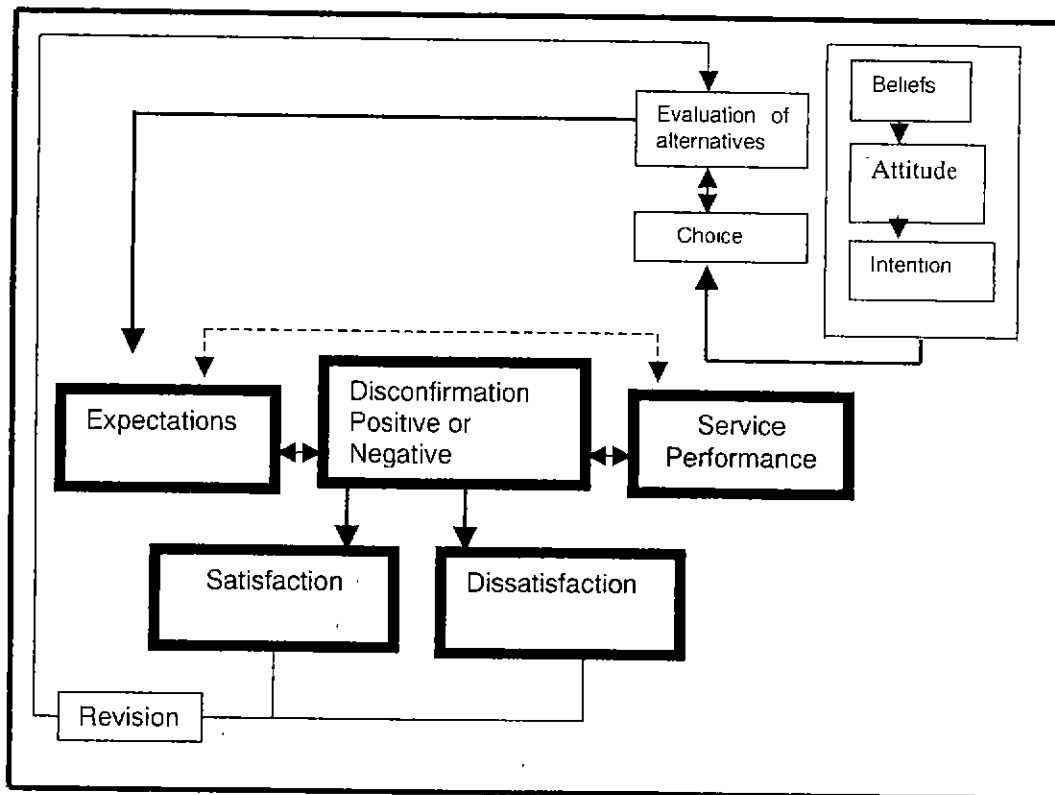
(Developed from Engel, Blackwell and Miniard, 1986, p.356)

This view is empirically supported by Gardial *et al* (1994). However, it is also argued that satisfaction thoughts were similar to evaluation thoughts, but were more oriented to a comparison against standards, viewed as prior expectations. In this context, Oliver (1996) does not discount the positive impact of the choice criteria with regard to satisfaction in addition to the other satisfaction drivers, as shown in figure 3.4 below.

This figure indicates that some variables influence choice strongly and they also can have an influence on satisfaction some moderately and others with lesser impact. Similarly, there are factors (variables), which are termed as satisfaction drivers in view of their strong influence on satisfaction/dissatisfaction, and can have moderate or lesser influence on choice. In between, there are factors, which can influence choice as well as satisfaction/dissatisfaction strongly and hence are termed as 'dual influence factors' (variables).

Figure 3.4: Choice Criteria versus Satisfaction Drivers
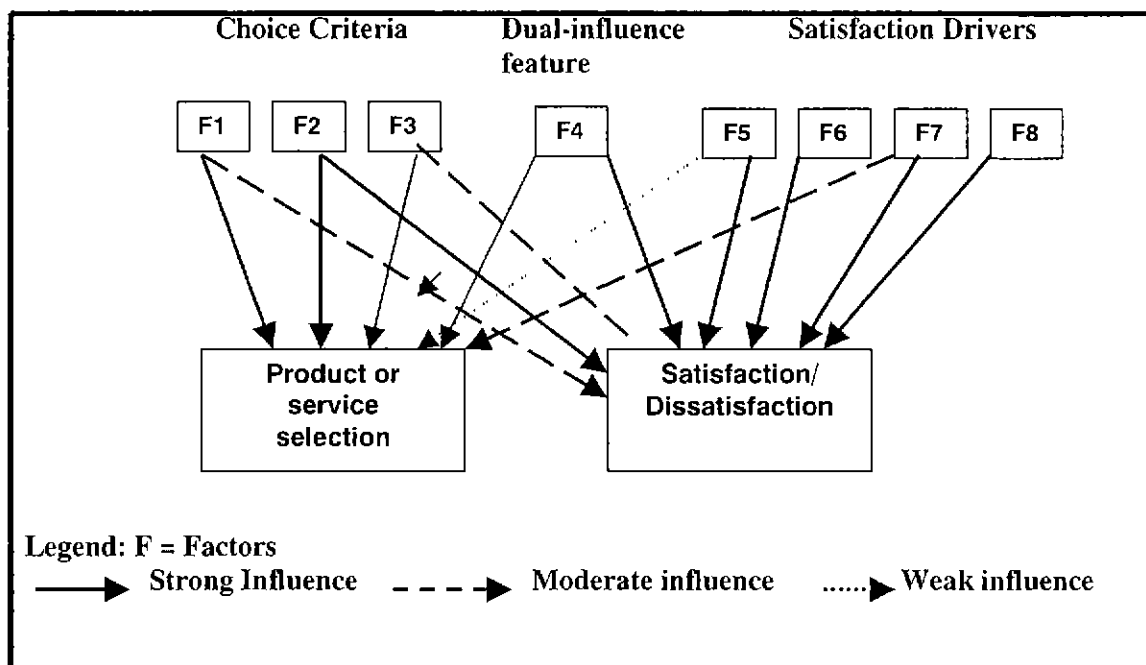
(Adapted from Oliver, 1996, p.42)

In developing a model for the present study, these influences were tested during the exploratory stage and selected choice criteria/variables were used as comparison standards in the form of prior expectations of students to measure satisfaction. The final model, as shown in figure 4.3, incorporates Oliver's (1980,1996) expectancy-disconfirmation Paradigm and the SERVQUAL measurement approach (Parasuraman *et al*, 1988,1991 and 1994).

3.5. Expectations and Perceptions paradigm

One of the widely discussed and tested approaches in measuring customer satisfaction is Oliver's (1980) expectancy-disconfirmation model or its variants. Expectancy-disconfirmation is a derivative of adaptation-level theory and says that customers compare actual product and service performance with their prior expectations. The paradigm postulates that customer satisfaction is related to the size and direction of disconfirmation, which is defined as the difference between the individual's pre-purchase (pre-choice) expectations (or some other comparison standard) and post-purchase (post-choice) performance of the product or service perceived by the customer (Anderson, 1973; Oliver, 1980). If expectations are met or exceeded, the customer is satisfied. Dissatisfaction results when perceived performance falls below

expectations. There are two basic methods of investigating confirmation and disconfirmation of expectations, namely the *inferred approach* and the *direct method* (Prakash and Lounsbury, 1983; Meyer and Westerbarkey, 1996).

The *inferred* approach involves computing the discrepancy between expectations of performance and the evaluation of outcomes. This technique entails developing separate data sets relating to customer-service expectations and perceived performance. The scores for performance are then subtracted from those of expectations to form the third variable: the confirmation - disconfirmation (or difference) score, which is used in subsequent analysis (Yuksel and Rimmington, 1998).

The *direct* approach, however, requires the use of summary-judgement scales to measure confirmation and disconfirmation (eg. a Likert-type scale of 'better than expected' to 'worse than expected'). The researcher does not need to calculate the 'difference scores' as the respondents can be asked directly the extent to which the service experience exceeded, met or fell short of expectations (Yuksel and Rimmington, 1998).

Despite its growing popularity, the expectancy-disconfirmation paradigm has received a great deal of theoretical and operational criticism; in particular for including expectations and for using difference scores in assessing CS/D (Buttle, 1996; Churchill and Supernant, 1982). Most criticism has been focused on the measurement bias, for example if expectations were measured after or even simultaneously with the service experience, the expectations would be biased by such experience (Gronroos, 1993). The problem would be if the experience were positive, the expectations would be overstated and if negative, it would be understated.

In view of the above contamination, researchers recommend that the expectations should be solicited before the service experience as the expectations will be contaminated by perceptions of the actual service provided (Getty and Thomson, 1994; Carman, 1990). Some others, however, argue that measuring expectations before service experience can be problematic as the customer is likely to modify expectations during the service encounter and use those modified (perhaps more

realistic) expectations as the standard of comparison (Weber, 1997; Danaher and Mattsson, 1994; Gronroos, 1993). In other words, the likelihood of the customer revising expectations based on the experience of the previous encounter is common in the hospitality industry. As Weber (1997) points out events that are completely unanticipated prior to a service encounter may become significant contributors to the consumers' overall dissatisfaction or satisfaction. The revision of expectations and its effects on the perceptions of performance of service delivery appears to be part of the satisfaction formation process not confined to one particular industry.

Dorfman (1979) argues that a measurement of expectations can lead to consistently high ratings being given by customers while Babakus and Boller (1992) maintain that customers when asked to indicate an expected level and an existing level seldom rate expected level lower than the existing level - a tendency to proclaim high expectations. If this is true, it will be very difficult to satisfy customers, as expectations can never be met or exceeded (Yuksel and Rimmington 1998). In view of this Yuksel and Rimmington (1998) raise doubts whether or not it is worthwhile including expectations in an instrument, as they may not produce responses significantly different from using the perception scores alone. Contrary to these observations, the use of expectation as a comparison standard in the measurement of customer satisfaction has wide support in the academic literature (Oliver, 1996; Halstead, Hartman and Schmidt, 1994; Gardial et al, 1994; Zeithaml et al, 1990; Anderson and Sullivan, 1990; Tse and Wilton, 1988; Kennedy and Thirkell, 1988; Oliver and Winer, 1987; Bearden and Teel, 1983).

The basic assumption in the expectancy-disconfirmation paradigm is that a customer must have pre-purchase expectations to be able to experience disconfirmation of those expectations. If customers do not have well-formed expectations, researchers contend that such a measurement of expectations and thus disconfirmation may not be valid (Halstead, Hartman and Schmidt, 1994). In other words a lack of experience with a service or lack of familiarity with a destination may cause expectations to be tentative and uncertain (Crompton and Love, 1995).

Wider experience on the other hand seems to foster more realistic expectations. As noted by Westerbrook and Newman (1978), people with extensive travel experience developed more-realistic expectations regarding trips and gave greater satisfaction ratings than did people without previous experience. The same would apply to post-graduate students who have had prior exposure to university education and therefore would form realistic expectations of the service delivery of the university.

Despite many criticisms, the expectancy-disconfirmation paradigm remains a popular and accepted framework for measuring satisfaction. Yuksel and Rimmington (1998), in their research employing a variety of techniques concluded that though the inferred method of expectancy-disconfirmation paradigm is intuitively appealing, the calculated difference scores do not provide adequate information in predicting behavioural intentions. It is held that the difference scores (difference between expectation and perception of performance) do not present complete information on the varying degrees of satisfaction levels of customers (Buttle, 1996; Brown *et al*, 1993). Identifying the degree to which the customer is satisfied provides a greater insight into the understanding of satisfaction.

To this end, the present study uses satisfaction scores derived from a ratio method of calculation to complement the difference (gap) scores to measure CS/D. The measurements used in this study are therefore based on three different satisfaction scores: the raw difference (gap) score, the arithmetic average ratio score, and geometric average of the ratio score, following the weighted average concept of SERVQUAL approach (Parasuraman *et al*, 1991 and 1985). The calculation of these scores is explained in section 4.14.3.

3.6. SERVQUAL

The measurement of service quality has attracted a significant interest among marketing practitioners and researches over the past two decades (Furrer, Liu and Sudharshan, 2000). In their pioneering study on service quality, Parasuraman *et al* (1985) developed the instrument SERVQUAL to measure service quality. The construct of service quality is defined in terms of 'perceived' quality - a customers'

judgement about the entity's overall excellence or superiority - an attitude that comes from a comparison of expectations and perceived performance (Llosa *et al*, 1998).

Since its introduction, SERVQUAL has been widely acclaimed as a major contribution to academic and particularly marketing research literature (Furrer *et al*, 2000). SERVQUAL was originally used to assess customer perceptions of service quality in service and retailing organisations (Parasuraman *et al*, 1988). It was presented as a synthetic scale with a correct level of reliability and validity useful in many service situations. The scale comprised two matched scales of 22 items, each describing expectations for a particular service category and then perceptions of a particular service provider (Bearden and Netemeyer, 1996). The expectations are not viewed as predictions (what is likely to happen), but as desires or wants of consumers (what should happen). Both sets of items are operationalised using a 7-point bi-polar scale labelled, *Strongly Agree* (7) to *Strongly Disagree* (1). Nearly half of the items are worded negatively with negative working indicated by (-). The scale produced scores, for the total scale and each factor, ranging between minus 6 and plus 7, where the positive scores are reflected as perceptions exceeding expectations. The quality of service is assessed through this SERVQUAL score, called the gap score computed by taking the difference for 1 to −7 scales and then averaged over the number of items either in the total scale or for each subscale (Bearden and Netemeyer, 1999). According to the authors, the service quality is then the difference between customers' perceptions and expectations (P-E) and is given by the following equation.

$$Q = \frac{1}{22} \sum_{i=1}^{22} (Pi - Ei)$$

Where:

Q = Perceived service quality

P_i = Performance level perceived on attribute i for the delivered service, and

E_i = Expected performance level on attribute i for the service generally.

22 represent the number of questions used.

Parasuraman *et.al* (1988, 1991a, 1991b, 1993 and 1994) identified five dimensions of service quality. They are *tangibility, reliability, responsiveness, assurance* and *empathy. Tangibility* refers to the appearance of physical facilities, equipment,

personnel, and communication materials; *reliability* to the ability to perform the promised service accurately and dependably; *responsiveness* to willingness to assist customers and provide prompt service; *assurance* to the knowledge and courtesy of employees and their ability to convey trust and confidence; and *empathy* to the caring; and individualised attention given to customers. The authors assert that the SERVQUAL dimensions can be adapted to different service settings, depending on the nature of inquiry. The practical application of the measurement approach has been identified as one of the major strengths of SERVQUAL over other measures. The other strengths of SERVQUAL have been identified as:

- the reliability and validity of the scale in comparing customers' expectations and perceptions over time;
- the ability to compare own SERVQUAL scores against competitors;
- the relative importance of the five dimensions in influencing service quality perceptions;
- the potential use of measure in segmenting customers into several perceived quality segments (eg. High, Medium and Low, and the ability to analyse on the basis of (a) demographic (b) psychographic, and (c) other profiles; and
- the practical implications for companies to improve the global perception of its service quality (Furrer *et al*, 2000; Llosa *et al*, 1998).

The growing popularity of the SERVQUAL instrument among marketing practitioners and researchers is seen by the diversity of its application in research pursuits ranging from competitor analysis, segmentation, to customer profiling and covering the services, and manufacturing industries (Furrer *et al*, 2000). The major applications, however, were in the service industry. Table 3.1 shows the leading research using the SERVQUAL instrument, and the areas of its application.

Despite its popularity, SERVQUAL is criticised on its operational and measurement problems. These include the use of P-E difference score as a measurement of perceived quality as opposed to performance based measure (Cronin and Taylor, 1994; Carman, 1990, Koelemeijer, 1991, Churchill and Brown, 1993), the type of expectations eg. desired or adequate, which would provide different satisfaction

responses (Swan and Tranwick, 1981), the link between satisfaction and service quality (Cronin and Taylor, 1994; Teas, 1993) and the number and nature of the dimensions being inappropriate for some service industries such as product services and "pure" services (Llosa *et al*, 1998).

Table 3.1: Major applications of SERVQUAL

Areas of application	Authors
Banking	Lassar *et al*, 2000; Marshall and Smith, 1999; Angur *et al*, 1999
Brokerage services	Lin and Wei, 1999
Building maintenance	Siu *et al*, 2001
Higher education	Engelland *et al* 2001 and 2000; Comm *et al*, 2000; Houston and Rees 1999; Kwan and Ng, 1999; Hampton, 1993; Davis and Allen, 1990.
Information services	Jiang *et al*, 2000; Van Dyke *et al*, 1999; Kettinger and Lee, 1999
Local authority services	Wisniewski, 2001; McFadyen *et al*, 2001; Donnelly and Shiu, 1999).
Market research	Donnely *et al*, 2000
Medical and health care services	Dean, 1999; Curry *et al*, 1999; Llosa *et al*, 1998; Headley and Miller, 1993; O'Connor and Bowers, 1990.
Restaurant service	Heung *et al*, 2000
Retailing	Metha et al, 2000a, 2000b; Headley and Miller, 1999)
Shipping	Durvasula *et al*, 1999
Travel services	Kayanama and Black, 2000

Parasuraman *et al*, in 1994, responded to criticisms by some adjustments to the scale and its operation. On the issue of a performance based measure in preference to the disconfirmation based measure, argued that although the practice of measuring only perceptions to determine service quality is widespread, such a practice does not necessarily support the superiority of a performance based measure. This is because measurements that incorporate customer expectations provide richer information and have more diagnostic value. Conceding that there is a confusion with regard to the causal relationship between customer satisfaction and service quality, Parasuraman *et al* (1994), acknowledge that recent research evidence support the view that service quality is an antecedent of customer satisfaction. Further, in regard to this type of comparison standard for measuring service quality, it is argued that the issue of

comparison norms and their interpretation still remains unresolved and is being examined by many researchers.

The instrument used in the present study is an adaptation of SERVQUAL with refinements addressing the criticisms in the literature.

3.7. Model of Post-choice satisfaction among International Postgraduate students from Asia.

In developing a model for post-choice satisfaction among international students, this study treats post-consumption evaluation as a function of the initial choice decision, pre-choice variables (such as expectations), and post-choice responses (such as perceived performance and the gap between performance and expectations).

The two types of post-consumption evaluations that have received much attention in the consumer behaviour literature are overall evaluations of product or service quality and satisfaction judgement (Oliver, 1996). In this thesis the focus is on the satisfaction in relation to the university as a study destination.

Post consumption evaluations are of interest because they influence consumers' repeat purchases, as well as the purchases of other potential consumers, through WOM (Harvis *et al*, 2000; Guolla, 1999; Bristor, 1990). The satisfied students are likely to engage in positive WOM, recommend the institution to their friends and relatives, and enrol for additional courses or return as graduate students.

The universities are facing the challenge of rising student expectations of quality, service and value for money, and the need to increase the satisfaction level of their students to retain and improve international student numbers. Post-consumption evaluations assist universities to identify genuine student concerns regarding the performance of educational services and to develop strategic responses through programs that satisfy the exact needs of students.

In modelling the determinants of post-consumption evaluations, this study draws on previous research by Oliver (1980, 1996), Lawley and Blight (1997); Bolton and

Drew (1991) and others, on the basis that post consumption evaluations are influenced by pre-choice expectations, perceived performance and disconfirmation (gap between performance and expectations). No modelling of WOM is attempted in the study.

Figure 3.5 below shows a 3 stage preliminary model developed for the study. It is based on the confirmation/disconfirmation of perceptions of service quality variables that influence the satisfaction of the international postgraduate students from China, India, Indonesia and Thailand. The first phase involves the identification of the variables, while the second phase examines the correlation and co-efficiency of these variables, leading to factors of importance that result in CS/D. The third phase accounts for the final outcome of CS/D through the process of confirmation/disconfirmation of perceptions of service performance of the university, measuring the gap between expectations and perceptions. A total of 36 variables are included in the model identified from the literature and focus group interviews, which are described in chapter 4. The process of selection of these variables is also discussed in section 4.6.

Figure 3.5.   Preliminary Model of Post Choice satisfaction among International Post Graduate students from Asia.
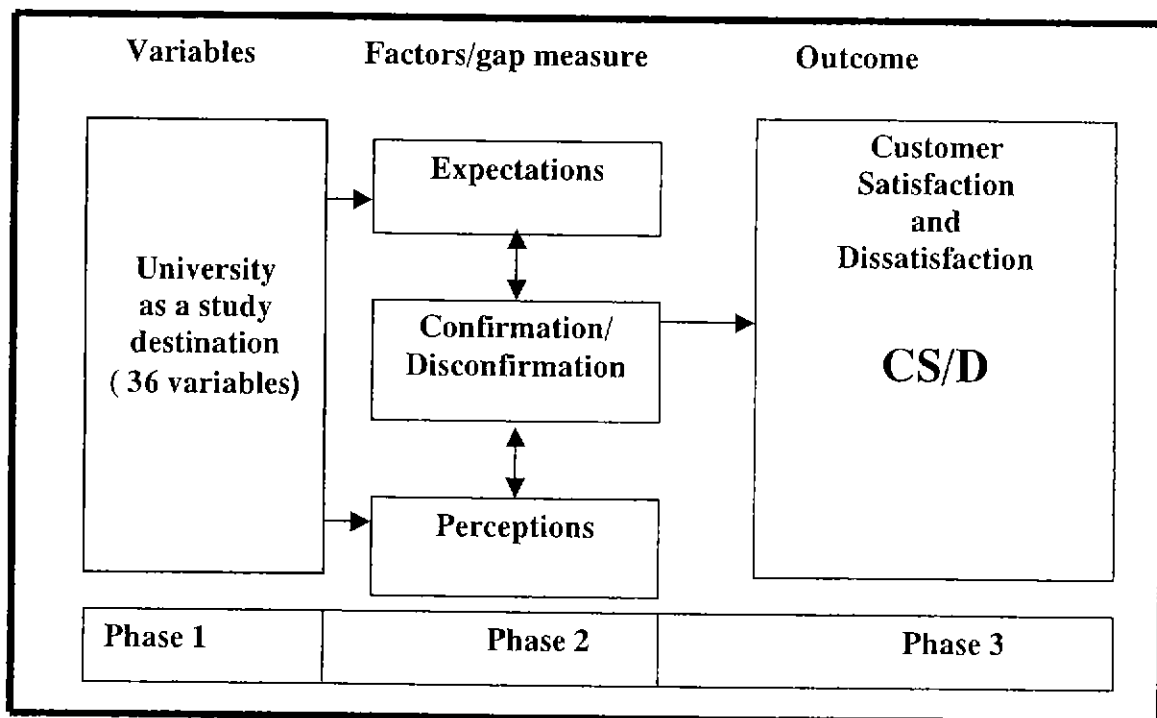
3.8. Hypotheses

Several hypotheses are developed to address the main research question and are tested using the above model. The rationale and the purpose of the hypotheses are outlined below.

Halstead and Hartman (1994) propose that the higher education setting is comprised of a variety of service inputs to produce the entire education process. The ability of university students to form pre-experience comparison standard for an unfamiliar, complex service that contains multiple sources of satisfaction can vary. Moreover, the effect of cultural differences in the evaluation of service encounters and levels of satisfaction have been reported by Furrer *et al*, 2000; Mattila, 1999; Kwan, 1999; Donthu and Yoo, 1998; and Winsted, 1997. Given that the sample of student groups come from different cultural backgrounds, it is likely that the evaluation of the university services will vary among the postgraduate international students from China, India, Indonesia and Thailand and thus the likelihood of differences in the rating of and the importance placed on individual variables, and consequently in the level of satisfaction, is high. This is the justification for the first three hypotheses, which are presented below.

H1: There are differences in the rating of variables that influence CS/D by student groups.

H2: There are differences in the importance of the factors relating to CS/D by student groups.

H3: The level of satisfaction of international postgraduate students from Asia varies significantly between countries of origin.

The fourth hypothesis is developed to explain the relationship between the level of satisfaction and different universities. Many satisfaction studies in international education have acknowledged several factors to influence the choice of a particular university by international students (Townley, 2001; Guolla, 1999; Kwan, 1999). These factors range from *the reputation of the university, academic quality, computer*

68

and library facilities, diversity and appropriateness of study programs, tuition fees and *overall customer value* provided by the institution, supported by positive WOM (Harvis *et al*, 2000; Guolla, 1999). Mazzarol (1998) found that factors like the *possession of international strategic alliances or coalitions* and *offshore teaching programs*, among others, provide universities with a competitive edge to become more attractive and marketable to international students. He also reported that there were variances in the delivery of services by universities depending on their size, capacity, customer orientation, which would have an impact on student satisfaction.

Given the likely variances in the delivery of services by the five Victorian universities chosen for this study, and the variances in the post-choice evaluation of students from the target countries, it is presupposed that the satisfaction levels of students in the universities will differ according to the nature of services provided by each university. Hence the following hypothesis:

H4: The level of satisfaction of international postgraduate students from four Asian countries varies significantly between universities.

The present study examines the relationship between the age and the duration (length) of enrolment (measured by the number of semesters completed) and the level of satisfaction of students. The following age categories were operationalised: between 21-24 years, between 25-29 years, 30-34 years and 35 years and over. Rautopuro and Vaisanen (2001), in their study of non-traditional students at a Scandinavian university, found that the university experience differs between age groups, in particular between the non-traditional age (older or mature) students and their younger counterparts. Mature students tend to be more attentive in their studies and moderate in their behaviour (Kwan, 1999). Married students are believed to share these characteristics.

The length of the university experience is a contributory factor to the variance in the level of satisfaction as it is accepted that satisfaction formation is a cumulative experience (Sue, 2001; Boulding and Kalra (1993). Thus, the following three (H5, H7, and H8) hypotheses are constructed.

H5: There is a positive relationship between the age of students and the level of satisfaction of international postgraduate students from Asia.

H7 There is a relationship between the marital status and the level of satisfaction of international postgraduate students from Asia.

H8: There is a relationship between the semester of the course and the level of satisfaction of international postgraduate students from Asia.

The present study also investigates the impact of the gender of the postgraduate international students on the level of satisfaction. Deux and Major (1987) argued that the behaviour of men and women differ widely as a function of personal choice, although they are relatively equal in their potentialities for most behaviours. Bern (1981) also acknowledged the differences in the behaviour of men and women in many situations. In light of the foregoing explanation, the following hypothesis is put forth:

H6: The level of satisfaction of international postgraduate students from Asia varies between male and female students.

Kwan (1999) examined the effects of course characteristics and the level of course (degree) on student evaluations. The results indicated that there were substantive differences in the academic discipline groups and the levels of the courses in terms of the ratings given on service quality. The present study examines the relationship between the field of study and the type (or level) of degree and student satisfaction. The categories of fields of study are based on DETYA classifications, while the level of study (or type of degree) was based on five recognised classifications. The investigation is aimed at identifying the potential differences in student satisfaction between these classifications. Hence the following two hypotheses (H9 and H10) are advanced.

H9: The level satisfaction of international postgraduate students from Asia varies with the field of study.

H10: The level of satisfaction of international postgraduate students from Asia varies with the type of degree.

International postgraduate students finance their studies from two major sources. The first source is private funding either from the family or from personal finances. The second source is third party funding, either from an employer sponsorship or a government scholarship. The present study aims to identify the relationship between these sources of funds and student satisfaction. Accordingly, the following hypothesis (H11) is submitted.

H11: The level of satisfaction of international postgraduate students from Asia varies with the source of funding.

3.9. Summary

This chapter has presented the theoretical and conceptual framework associated with the study based on past research. A preliminary model of post choice satisfaction was developed as a basis of analysis and dominant concepts surrounding the model were discussed. A detailed analysis of two dominant theoretical concepts - expectations and perceptions - were undertaken as part of an overview of the expectancy confirmation and disconfirmation paradigm, and the SERVQUAL measure of service quality, which form the basis of this study. Eleven hypotheses were developed to address the research question and will be tested in the final model of post-choice satisfaction.

The following chapter will discuss the method employed for the study and the preliminary analysis of the data.

Chapter 4

Methods and Preliminary Analysis

4.1. Introduction

This chapter discusses the methods employed in the study. The discussion will include ethical considerations, the rationale of the selected research design, description of the exploratory research, questionnaire design, sampling technique, method of data collection, and data analysis. A final model of post-choice satisfaction will be presented at the end of the chapter.

As discussed in chapter 1, the aim of the research is to examine the CS/D of the university as a study destination, as experienced by international post-graduate students from China, India, Indonesia, and Thailand studying in Victorian universities. The selected methodology of the study is consistent with its aim in that it follows a post positivist research paradigm incorporating both qualitative and quantitative research methods to support the research objectives flowing from the overall aim.

The discussion in this chapter is presented in two parts. The first part of the discussion will focus on the preliminary analysis and the qualitative research methods employed in the study, including the research design, exploratory research and its findings, selection of the explanatory variables, questionnaire design, pre-testing of the questionnaire, sampling issues, and questionnaire administration. The second part of the discussion will concentrate on the quantitative data analysis strategy comprising descriptive statistics of the sample, quantitative techniques including factor analysis, computation of satisfaction scores, ANOVA, as well as logistic and linear regression. The chapter begins with ethical considerations that have been fundamental to the study.

Figure 4.1 presents the structure of the chapter and discussion elements.

Figure 4.1: Chapter Outline

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                        ┌─────────────────────────┐
                        │    4.1: Introduction    │
                        └─────────────────────────┘
                                    │
                        ┌─────────────────────────┐
                        │ 4.2: Ethical Considerations │
                        └─────────────────────────┘
                                    │
                        ┌─────────────────────────┐
                        │  4.3: Research Paradigm  │
                        └─────────────────────────┘
                                    │
                        ┌─────────────────────────┐
                        │   4.4: Research Design   │
                        └─────────────────────────┘
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Part A   **Part B**

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┌────────────────────┐                    ┌──────────────────────────┐
│   4.5: Qualitative │                    │  4.14: Quantitative      │
│  research methods  │                    │  Research methods and    │
└────────────────────┘                    │  Analysis                │
          │                               └──────────────────────────┘
┌────────────────────┐                                  │
│ 4.5.1: Exploratory │                    ┌──────────────────────────┐
│     research       │                    │ 4.14.1: Data Analysis Strategy │
└────────────────────┘                    └──────────────────────────┘
      │         │                              │              │
┌──────────┐ ┌──────────┐          ┌──────────────┐ ┌──────────────────┐
│4.5.2:    │ │4.5.3:    │          │4.14.2: Factor│ │4.14.3: Satisfaction│
│Focus     │ │Depth     │          │Analysis      │ │Scores            │
│Groups    │ │Interviews│          └──────────────┘ └──────────────────┘
└──────────┘ └──────────┘                  │               │
      │         │                    ┌──────────────────────────┐
┌─────────────────────────┐          │     4.14.4: ANOVA        │
│ 4.6: Description of Variables │     └──────────────────────────┘
└─────────────────────────┘                        │
          │                          ┌──────────────────────────┐
┌─────────────────────────┐          │ 4.14.5: Regression Analysis │
│ 4.7:Questionnaire Design │         └──────────────────────────┘
└─────────────────────────┘                        │
          │                          ┌──────────────────────────┐
┌─────────────────────────┐          │ 4.14.5.1: Logistic Regression │
│   4.8:Response Format    │         └──────────────────────────┘
└─────────────────────────┘                        │
          │                          ┌──────────────────────────┐
┌─────────────────────────┐          │ 4.14.5.2: Linear Regression │
│    4.9: Pre- testing     │         └──────────────────────────┘
└─────────────────────────┘                        │
          │
┌─────────────────────────┐
│4.10: Revision of Questionnaire │
└─────────────────────────┘
      │         │
┌──────────┐ ┌──────────────────┐
│4.11:     │ │4.12: Sampling    │
│Reliability│◄─►│issues          │
└──────────┘ └──────────────────┘
          │
┌─────────────────────────┐          ┌──────────────────────────┐
│4.13: Questionnaire administration │  │     4.15: Summary         │
└─────────────────────────┘          └──────────────────────────┘
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4.2. Ethical considerations

Ethical conduct in research based on Social Sciences and Humanities Research Council (SSHRC) was strictly adhered to in the process of gathering data for the study.

Kervin (1992) has proposed a checklist for ethical research outlining the need to take action to avoid any harm to the participants or others directly or indirectly, violating accepted research practice and also community standards in conducting research.

The following action was taken by the researcher to ensure that the study complies with the accepted ethical guidelines.

- Approval from the University Ethics Committee to conduct both the exploratory research and the main survey involving humans. This entailed rationalising the processes involved and the submission of the instruments used in these studies for scrutiny by the University Ethics Committee;
- Detailed instructions in the instruments used confirming the process in place to ensure participants confidentiality and anonymity;
- Obtaining written consent from the participants involved in the exploratory research stage;
- Choice given to potential respondents of the main survey either to participate or not to participate in the exercise, together with the option of contacting the Chair of the University Ethics Committee to obtain any clarification on the survey. All contact details were given in the covering letter accompanying the questionnaire;
- Letters written by the international offices of respective universities to students inviting their participation in the research emphasising the need to use their own discretion in responding to the questionnaire.

4.3. Research paradigm

This study uses a methodology aligning with a post positivist research paradigm in that greater objectivity, rigor and logical reasoning are key criteria in examining the research problems (Hussey and Hussey, 1997). In this tradition, it is argued that although reality is there to be studied, captured, and understood, it can never be fully apprehended, only approximated. Moreover, it relies on multiple methods as a way of capturing as much of reality as possible, while placing emphasis on the discovery and verification of theories (Denzin and Lincoln, 2000). Based on this paradigm, the study starts with a review of literature to establish the theory and to construct testable hypotheses. Then, it takes the form of a triangulation study where both qualitative and quantitative data sources are used. Denzin (as quoted in Hussey and Hussey, 1997, p.74) defines triangulation as "*the combination of methodologies in the study of the same phenomenon*". In other words, both qualitative and quantitative methods are concerned with aspects of issues that are important in understanding and analysing the individual's point of view. While qualitative research, arguably, gets closer to the respondents' perspective with detailed interviews and observations, quantitative research relies on more remote, inferential empirical methods and materials though supported by objective evaluations. This view is shared by Frankel and Devers (2000) who describe qualitative research as primarily inductive in that the researcher's task consists of describing and understanding people and groups' particular situations, experiences, and meanings before developing and/or testing more general theories and explanations. In contrast, quantitative research is primarily deductive, drawing heavily on existing theoretical and substantive prior knowledge to conceptualise specific situations, in order to predict and explain phenomena (Frankel and Devers, 2000).

There is an ongoing debate on the choice of either qualitative or quantitative approaches in analysing consumer behaviour. Over reliance on quantitative data in such studies is criticised by some researchers. Townley (2001) used a qualitative approach in his study of student satisfaction and, argues that qualitative research can be used as effectively as quantitative survey based studies. His view is supported by many other researchers (Ruyter and Scholl 1998; Morgan 1998; Healey and Perry 2000) who believe that marketers and academics, in general, give lesser priority to qualitative method due to its failure to provide hard data and its reliance on small

samples which cast doubts about its representativeness and ultimately its validity. These researchers reject the notion that only hard statistics have any meaning because to say a certain percentage is satisfied or dissatisfied provides an incomplete picture unless one analyses why consumers feel that way to enable management to ascertain the problem or potential problem and the ways of dealing with them. The contention therefore is that it is necessary to have a richer set of information to enrich and inform the "hard" statistics (Townley 2001).

The preceding paragraph represents a justification of the use of qualitative data in research but also an endorsement of the application of both qualitative and quantitative analysis in order to achieve the objectivity, rigor and logical reasoning in examining research problems. This study adopts the balanced approach of using both qualitative and quantitative analysis to deal with the research problem.

4.4. Research Design

A research design is a basic plan that guides the data collection and analysis phases of the research project (Kinnear and Taylor, 1996). It provides a framework that specifies the type of information to be collected, its sources and the collection procedure. As shown in figure 4.1, and the discussion in section 4.1 the research design followed in this study is a combination of exploratory and explanatory research supported by qualitative and quantitative data analysis.

Exploratory research focuses on gaining insights and familiarity with the subject area for more rigorous investigations at a later stage and also provides inputs for decision-making (Malhotra, 1999; Hussey and Hussey 1997; Kinnear and Taylor (1996). The first phase of this study involved a detailed review of literature to identify the theoretical background related to international education and customer satisfaction with reference to international students and the analysis of various research themes and constructs resulted in determining the research problem and the questions to be investigated. This was followed by focus group discussions and in-depth interviews to refine and validate these themes and the theoretical constructs before research hypotheses were formulated. The findings of the exploratory research are presented in

this chapter, as they are relevant to discussion on research design in the subsequent sections.

Explanatory research, on the other hand, goes beyond exploratory and descriptive research in terms of analysing the characteristics of marketing phenomena, their frequency of occurrence, discovering and measuring the association and relationships of the marketing variables to provide a plausible explanation for observations (Hussey and Hussey, 1997; Kinnear and Taylor, 1996). A questionnaire was developed to gather quantitative data and multiple statistical techniques were used to analyse and interpret the data, including hypothesis testing.

Part A.

4.5. Qualitative research methods and Preliminary analysis

The Part A of this chapter will focus on the qualitative research methods and the preliminary data analysis and the qualitative research methods employed in the study, which will include the exploratory research and its findings, selection of the explanatory variables, questionnaire design, pre-testing of the questionnaire, sampling issues, and questionnaire administration.

4.5.1. Exploratory Research

The literature review in chapter 2, provided an insight into the research themes and constructs, helped to formulate and define the research problem more precisely, identify key variables and relationships for further examination and, gain insights for developing an approach to the problem. Focus group discussions and, in-depth interviews comprised the methods used in this phase.

The primary focus of this phase is to extend the factors identified by earlier researchers (Lawley 1993 and 1997; Lawley and Blight 1997; DETYA, 2000) related to the pre-purchase (Pre-choice) decision making process for investigation into their relevance to post-purchase (Post choice) satisfaction and dissatisfaction.

The key objectives of the exploratory research were to:

- review the variables related to the choice of study destination so far identified in order to ascertain the importance of these variables in explaining post-choice satisfaction;
- identify any additional variables that could impact on student satisfaction;
- verify the relationships between the identified variables and expectations of students of university as a study destination and, following from above, to establish a set of variables to be included in the major study of this thesis;
- ascertain how these variables could be operationalised in a questionnaire.

The investigation during this process included assessing the importance of the factors influencing CS/D among the target students, and the differences in the ranking of these factors. Apart from verifying the relevance of the factors discussed in the literature, the process provided the opportunity to identify additional factors with regard to student perceptions and expectations of studying in Australia. Appendix 4 and 5 provide summaries of studies covering factors influencing choice of destination and post-choice behaviour.

4.5.2. Focus Group Discussions

4.5.2.1. Why Focus Groups?

Many marketing practitioners consider focus groups as the most important qualitative research procedure to the extent that it is synonymous with qualitative research (Malhotra *et al*, 2002). Focus groups are described as a technique:

- used to gather data relating to the feelings and opinions of a group of people who are involved in a common situation. It is a technique that combines both interviewing and observation and therefore becomes an important technique used in preliminary research, and pilot studies to develop questionnaires (Hussey and Hussey, 1997);
- aimed at using group interaction to produce data and insights that could be less accessible without the interaction found in a group (Morgan, 1998);
- that gathers information from group interaction that is focussed on a series of topics introduced by a discussion leader or moderator (Solomons, 1992).

Malhotra *et al* (2002) provided a comprehensive list of advantages and disadvantages of focus groups. Given their focus on a terminology that provides uniform wording, some of the descriptions appear inadequate to highlight all of the advantages and disadvantages.

Among the advantages presented by the authors are:

- *Synergism*: Ability to produce a wider range of information, insight and ideas than individual responses secured privately;

- *Snowballing*: a bandwagon effect ensuring a chain reaction among group participants to contribute opinions and ideas;

- *Stimulation*: the participants are enthused by group interaction after some time;

- *Security*: group participants feel comfortable to contribute as the opinions and ideas expressed are common to all. Authors appear to ignore the diversity within a group and the likelihood of participants expressing different opinions on a common issue;

- *Spontaneity*: given that the group participants are not required to answer all questions, contributions become spontaneous which are generally accurate;

- *Serendipity*: the ideas are generated more easily in a group situation than in an individual interview;

- *Structure*: group interviews allows flexibility in the topics covered and the depth in which they are treated;

- *Speed:* data collection is quicker given that a number of individuals participate in the discussion at the same time as the focus is on the collective output of the group.

Some of the disadvantages highlighted are:

- *Misuse:* researchers can misuse the data collected in focus groups by treating them as conclusive rather than exploratory;

- *Misjudge:* the results are often misjudged given that focus groups are susceptible to client and researcher biases;

- *Moderation:* focus groups are difficult to moderate. This will have an effect on the final results. Moreover the participants' views can be influenced by the arguments of other members of the group, particularly in the event of the presence of a member who dominates the discussion. The validity of the results becomes an issue in these circumstances.

- *Messy:* the unstructured nature of the responses makes coding, analysis, and interpretation difficult and messy.

- *Misrepresentation:* focus groups are not representative of the general population and the results cannot be used exclusively for decision-making (Malhotra *et al*, 2002, pp. 197-198)

4.5.2.2.   Number and composition of groups

The number of groups to be interviewed depends on the nature and objectives of the research in terms of the input required for evaluation (Hurworth 1996). According to Hurworth (1996), at least three groups are needed to detect trends and to avoid atypicality and any more than 20 would become unmanageable and begin to involve survey-type numbers of subjects.

The industry standard for the number of participants in each focus group is between 4-12 persons (Kinnear and Taylor 1996; Hussey and Hussey 1997; Malhotra, 1999; Churchill and Iacobucci, 2002). Four or over is large enough for diversity of perception while 12 or less is small enough for the participants to contribute freely towards the discussion (Hurworth 1996). In addition, the general guidelines recommended for these discussions were followed and participants of both sexes representing different stages of their course programs were included the focus groups. However, given the need to ascertain the expectations of students of a university as a study destination, effort was made to include as many students as possible in their first semester of the course. This was to minimise the *'contamination effect'* of student responses with current experience (Carmon, 1990; Getty and Thompson, 1994).

As noted earlier, the primary purpose of the focus group discussions was to verify and refine the variables identified by earlier research in terms of exploring the relationships among variables influencing the pre and post-choice behaviour of students, and their relevance to measure post-choice satisfaction and dissatisfaction. The opportunity was also used to develop the hypothesis based on the research objectives. Most of the earlier research focussed on the choice of study destinations as outlined in chapter 2, and it was necessary to ascertain whether these choice variables could be justified as input variables in modelling post-choice satisfaction and dissatisfaction. They were also aimed at identifying additional factors with regard to student expectations of studying in Australia, examining the importance of factors

influencing choice of destination and the differences in the ranking of these factors by the target students.

4.5.2.3.   The approach

Given the above circumstances, three focus group interviews involving 31 students with each discussion lasting 1.5 to 2 hours, were conducted in Melbourne over a period of three weeks with post-graduate international students from three university campuses – Victoria, RMIT and Deakin universities. This was necessary because of the difficulty in assembling all students in one location at a given time, and the need to provide a familiar and a comfortable environment (Stewart and Shamdasani, 1990) The selection of students for focus group interviews was based on a non probability cross sectional convenience sampling method to ensure diversity of opinion on matters of concern to students and a greater insight into the research question. This is similar to the *'purposive'* sampling strategy introduced by Frankel and Devers (2000), which *"enhances understandings of selected individuals or groups' experience or for developing theories and concepts"* (Frankel and Devers, 2000, p. 264). *The subjects are the 'typical cases' of those who are 'normal' or 'average' for those being studied"* (Miles and Huberman, 1994, p. 34).

The participants, besides being a homogeneous group, were representative of the four student groups, in terms of gender and, age as shown in the Table 4.1 below. The group identified as 'other' were international postgraduate students from other Asian countries who assisted in a comparative evaluation of factors relating to university choice

Table 4.1: Composition of focus groups

Nationality	Male	Female
China	3	2
India	4	3
Indonesia	3	2
Thailand	3	4
Others	4	3

The first group discussion comprised 16 participants and involved two moderators (including the researcher). The researcher moderated the other two discussions with 9 and 6 participants, respectively. Though the first group exceeded the desirable number of participants in one group discussion, the involvement of two moderators and the keen interest shown by the participants with the area of investigation, facilitated a very productive session.

The discussions were conducted in a semi-structured fashion (Esterby-Smith *et al*, 1991) with a prepared guide as outlined in Appendix 5. The process included opening questions, transition questions, which were then followed by the key questions.

Towards the end of each focus group discussion, a short questionnaire was distributed among the participants to obtain additional comments and further confirmation of students' views in regard to the choice variables and the potential areas of student's concern for further analysis.

4.5.2.4.   Focus Groups Findings

This section concentrates only on the findings related to the choice of factors/variables for the model of post-choice satisfaction. The focus group discussions confirmed the relevance of most of the choice variables/factors, identified in earlier studies, to measure post-choice satisfaction. Student's concerns were more profound issues such as prestige of the university, recognition of qualifications, course completion time-frame, competitive fees, value for money, university facilities including computer labs, library, accommodation, social activities, counselling, complaint process and teaching quality. The feedback from these discussions was incorporated in the questionnaire and in order to ensure deeper analysis of the important issues, multiple statements on some single issues were introduced as shown in Table 4.2 below.

For example, student responses were sought on two aspects in regard to library and computer facilities ('modern and adequate' and 'access'), two aspects in regard to student accommodation ('cost' and 'quality') three aspects of the image and prestige of the university ('within Australia', 'internationally' and 'in my home country'), four

aspects in relation to availability of information to students ('through overseas agents', 'Australian embassies and other official representatives', 'via the internet', 'compared to other universities' and, four aspects of the academic courses ('appropriate to my needs and aspirations', 'recognised in my home country', 'completion times suited to my needs and aspirations', 'relevant to future job and career prospects').

It was clear from the findings that the importance of the choice variables differed between student groups. Indian participants were more vocal on issues with regard to the 'high image and prestige' of the university, 'tuition costs', 'standard of teaching', 'library facilities', 'computer facilities', and the 'information and guidance from overseas agents', 'information and guidance from Australian diplomatic missions and other official representatives', and 'the process to deal with complaints' than the other student groups. An Australian university was not the first preference as a study destination for almost all Indian students, some Thai and Chinese students. Indonesian students were unique in identifying an Australian university as their first preference.

Table 4.2: Multiple statements related to student issues

Issue	Statement
Library facilities	- Modern and adequate library facilities - Good operating hours for library access
Computer facilities	- Modern and adequate computer facilities - Good access to computer labs
Student accommodation	- Accommodation of a good standard - Accommodation at reasonable cost
Image and prestige of university	- High image and prestige within Australia - High image and prestige internationally - High image and prestige in home country.
Information and guidance	- Through overseas agents and consultants - Through diplomatic representatives - Via the internet - Compared to other universities.
Academic courses and content	- Appropriate to my needs and aspirations - Recognised in my home country - Completion times suited to my needs - Relevant to future job and career prospects

For Indian students, Australian university was the third preferred destination after universities in the USA and UK. An Indian student commented: " *I could not gain admission to a university in USA or UK and then I applied to Australia. First I got a place in Sydney but I wanted to come to Melbourne*".

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Several Indian students commented that the absence of the GMAT test and low fees were two of the major considerations for choosing Australia. Compared to other student groups, Indian students appeared to be more aware of the university structure and facilities and were prepared to discuss the issues more openly than the other groups.

Some Thai students, however, favoured studying in a university in the United Kingdom in preference to an Australian university. " *My mother studied in Melbourne. She and my aunt, who is a university professor, wanted me to come to Australia, though I wanted to go the UK. I stayed in the UK for six months*" was the comment of a Thai student[1]

Indian and Thai students did not consider 'presence of students of my own country' a strong influence to study in an Australian university. The company of students of one's own nationality was seen as a pleasant coincidence but the yearning for greater interaction among other student groups was considered as more satisfying experience by students from India and Thailand. The opposite was found in regard to students from China and Indonesia.

Further elaboration of the key findings will continue in section 4.3 below, where all key choice variables are discussed.

4.5.3. Depth interviews

Thirteen depth interviews were conducted both prior to and after the survey procedure, 3 overseas and 10 in Australia, as outlined in Table 4.3 below. This section will focus on the interviews conducted prior to the survey procedure.

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[1] The student was on holiday and was not studying in the United Kingdom.

Table 4.3:   Composition and timing of depth interviews

Subjects	Prior to survey procedure	After survey procedure
Students	4	4
University Administration	1	1
Overseas Institution/Agents	3	0

The objectives of the depth interviews were the same as those of the focus groups discussions. The advantage of the depth interviews was the ability to achieve a deeper insight into the issues related to students' post-choice satisfaction. It was also an opportunity to discuss issues on an individual basis and to ascertain the nature of variables associated with post-choice satisfaction. With regard to students it was necessary to find out whether or not there were any differences in the understanding and interpretation of the different factors/variables, given different cultural backgrounds.

4.5.3.1.   The approach

As in the case of focus group discussions, the approach was a semi-structured interview technique but the difference was that in depth interviews the subjects were able to talk more freely and deeply on the issues raised. Further this technique allowed probing on certain issues.

A non-probability cross sectional convenience sampling method was used to select subjects for interviews thus ensuring a diversity of opinion on matters of concern to students and a greater insight into the research question.

The depth interviews were conducted prior to the survey with four students (2 Indian, 1 Chinese and 1 Thai), one university administrator in Melbourne and one overseas Australian government institution (Diplomatic mission) and two university agents/representatives. Another four students and one university administrator were interviewed in Melbourne after the survey. Each interview lasted between 20 to 45 minutes.

The interviews conducted prior to the survey were aimed at ascertaining the appropriateness of the variables to examine issues related to post-choice satisfaction and to verify the understanding and the interpretation of these variables, recognising the differences in the cultural backgrounds of students. Another objective was to verify whether or not the feedback received from focus group discussions conducted earlier was comparable with the opinions expressed at depth interviews. The rationale for the depth interviews after the survey was to further verify and substantiate the relevance of the issues and variables that were examined by the survey. This process was followed to ensure the quality of the results reported. The questions and issues taken up for discussion before and after the survey were same, though there was a difference in their emphasis during the discussions.

The inclusion of individuals other than students provided different viewpoints on issues, which served as useful inputs to the research process prior to the questionnaire development and survey procedure as well as providing an opportunity to rationalise the findings from different stakeholders.

4.5.3.2.   Depth Interview findings

The feedback from students was comparable to the feedback received from the focus group discussions. Insight into some issues were however greater in the depth interview responses.

All students expressed high expectations with regard to the quality of lecturers, university facilities, course content and duration, administrative matters, and student support facilities. The comments varied between student groups in terms of emphasis placed on issues. Indian students identified teaching quality, cost of living, university facilities, course relevance and employability as most important factors of their study outcomes. They also appeared more demanding than other students. The focus of Chinese and Thai students was related to student support facilities and cost of accommodation.

The general comments from the depth interviews were:

"The university should provide avenues for international students to gain professional experience after the course. This should be part of the program" (Indian student)

"The student administration should be student friendly and more understanding of the students from different cultural backgrounds" (Indian student)

"The student facilities (library and computer labs) should be in keeping with the increasing numbers of international students" (Indian, Thai and Chinese students)

"The university should assist students with visas" (Indian and Chinese students)

The student feedback from the focus group discussions and the depth interviews, helped to identify a number of variables that would have an impact on post-choice satisfaction and were included in the questionnaire used in the main survey.

Further analysis of the findings of the focus group discussions and the depth interviews will be conducted in association with the quantitative data analysis in chapter 5.

4.6.   Description of variables

A list of the variables identified during exploratory phase of this study is given below followed by a description of the variables. No order of importance of the variables is assumed, as it will be established after the survey.

1.   Efficient enrolment processing system
2.   Efficient system to assist with student visas
3.   Recognition for prior learning
4.   Presence of students of own nationality
5.   Opportunities for interaction with other student groups
6.   High image and prestige as a university in Australia
7.   High image and prestige as a university internationally
8.   High image and prestige as a university in the home country

9. Academic courses and content appropriate to needs and aspirations

10. Appropriate academic courses and content recognized in home country

11. Course completion times appropriate to one's needs and aspirations

12. Academic courses and training relevant to future job and career prospects.

13. Flexible timetables

14. Competitive fees compared to other universities

15. Fees that offer good value for money for services provided

16. High standard of teaching with quality lecturers

17. Good access to lecturers

18. Lecturers providing valuable feedback

19. Availability of high standard lecture material to students

20. Appropriate and manageable class sizes

21. Modern and adequate library facilities

22, Good operating hours for library access

23. Modern and adequate computer facilities

24. Good access to computer labs

25. Campus well located with easy access

26. Good standard of student accommodation

27. Student accommodation at reasonable cost

28. Provision of information and guidance by overseas agents and consultants

29. Adequate information and guidance through Australian diplomatic missions or other official representatives (IDP)

30. Availability of adequate information via Internet

31. Availability of adequate information on the Internet compared to other Australian universities

32. Availability of international student orientation programs as part of student support services

33. Availability of counselling services as part of student support services

34. Availability of other social services as part of student support

35. Encourage close working relationship between students and international student advisers to ensure appropriate solutions to student problems

36. Availability of a process to deal with complaints about adequacy of services and facilities.

4.6.1. Efficient enrolment processing system

The enrolment in a course of study is the first formal step in gaining admission to a university. Students expect the initial enrolment process to be quick and efficient as subsequent arrangements such as obtaining student visas are dependent on the timeliness of this process. University's confirmation of the student enrolment in a course of study is pre-requisite to the granting of a student visa by the Australian Immigration. University enrolment is also an ongoing process as students are expected to re-enroll each semester and year to confirm the continuation of their studies in a university. A delay in the process or an incorrect enrolment can cause dissatisfaction among students.

Burke (1986) in his study on International undergraduate student experiences at the University of NSW found this factor to be significant in shaping student's experiences of the university. The feedback from exploratory research indicates that students expect the enrolment to be routine process as long as appropriate documentation and fees are lodged with respective universities.

4.6.2. Efficient system to assist with student visas

Although universities are not directly involved with student visa formalities in their home country, the local agents or consultants associated with universities facilitate the visa application process. The delays involved in obtaining an Australian student visa and the rigorous application procedures applicable to Asian students and particularly those from "high risk countries" (countries that have a history of having students overstaying their visas) exert enormous pressures-economical and psychological-on prospective students even before they commence studies. Most students who participated in this study complained about their inability to obtain their visas on time and consequently missing out on the orientation programs of the university. China and India are in this category, but a recent amendment to the regulation has exempted Chinese students from going through the tough visa formalities, in view of the long-term market potential it offers to Australia.

The student feedback also indicates that students expect the universities to assist them with the renewal of their visas when due. Recent amendments to overseas student visa regulations have placed universities in an unenviable position with the student population in implementing changes to student visas and, are at the receiving end of students' displeasure. This variable therefore has an important effect on students' satisfaction in Australia.

The impact of this variable on choice of a study destination was examined by Lawley (1997) and was found to be statistically insignificant. Her research was on students from Malaysia and Hong Kong where student visa procedures are much more relaxed. On the other hand, Vicziany (1995) found that student visa restrictions in South Asian countries have a negative impact on Australia's expansion of international education.

4.6.3. Recognition for prior learning

Credit transfers or subject exemptions are normal expectations of students at the postgraduate level. These originate mainly from students who have had prior graduate qualifications from universities where English is the language of instruction. Indian students were a dominant group in seeking recognition for prior learning with the objective of minimizing the duration of the course of study in Australia. A study by IDP (1995) commissioned through their 11 overseas offices, found that the recognition of prior learning was one of the seven major reasons influencing a study destination. Lawley (1997); Duan (1997); Smart and Ang (1993) also found this factor to be significant in the choice of a study destination.

4.6.4. Presence of students of own nationality

Students view the presence of other students of their own nationality in the university differently from the presence of family and friends in Australia. Chinese and Indonesian students found such a presence to be useful, which is not shared by Indian or Thai students. This was quite evident from the

comment made by a Thai student: "In my class I have three Thais and I have to do a report with them. I wonder why I have to do an assignment with them. Why have I come here to do a report with a group of my own people." Duan (1997); Asia Pacific

Access (1995); Nesdale et al (1995); and Radford et al (1984); have identified this variable as an important factor of choice of study destination.

4.6.5. Opportunities for interaction with other student groups

Postgraduate students work within a tight timeframe to complete studies due to other commitments (e.g. family, job). The time available for social interaction is therefore very limited. Most students however, expect universities to provide opportunities, within their limited available time, to interact with students other than those in their courses or classes. Such interaction extends beyond students in the universities to the wider Australian community, as students seek to experience in the Australian way of life as part of their learning. Geall (2000) examined student interaction with fellow students and the local community as a factor contributing to positive student experience among undergraduates in a Hong Kong university. Burke (1986) commented on the positive influence of interaction with other student groups in his study on the experience of undergraduate students.

4.6.6. High image and prestige as a university in Australia

The choice of an Australian university is influenced by its image and prestige as an academic institution in the country itself. The expectations formed are based on the information gathered on the university, its courses, teachers and comparative ranking with other universities. Some universities have built up a reputation for certain academic disciplines which impacts on its image and prestige. Mazzarol et al (2001); Mullins et al (1995); Nesdale et al (1995) and the Bureau of Industry Economics (1989) identified this variable as a key factor of choice.

4.6.7. High image and prestige as a university internationally

High international image and prestige of a university is an attraction to postgraduate students as it is expected that such image and prestige would open up better career opportunities for them. Gaining international image and prestige as an educational institution is a long and an arduous process requiring a commitment to excellence in the delivery of education, and quality research output.

Most students believe some Australian universities enjoy high image and prestige among Asian countries. Mullins *et al* (1995); Nesdale *et al* (1995) and Bureau of Industry Economics (1989) discussed this factor in their studies investigating choice of study destination by international students.

4.6.8. High image and prestige as a university in the home country

This factor is closely related to the two factors previously discussed. As Mullins *et al* (1995); Nesdale *et al* (1995); and Bureau of Industry Economics (1989) pointed out in their studies, the attraction of a university lies with its reputation in the home country as a recognized institution. Opinions of students differ as the recognition of an institution is partly based on the strength and capacity of the university to deliver what is expected. The diversity of courses, reputation of its teachers and the strength of the alumni population in the home country of a given university are some of the factors contributing to image and prestige of an institution.

4.6.9. Academic courses and content appropriate to needs and aspirations

Students choice of a university is influenced by the type of courses offered that would satisfy their own personal requirements. This choice is made with the information available to them at the time of their selection of the educational institution. Duan (1997); Wilkinson *et al* (1996); IDP (1995); Lawley (1993); and Gardiner and Hurst (1990) discussed the quality and content of the university courses as a factor influencing choice. However, the aspect of the suitability of the course for one's individual requirements was identified in the focus group discussions conducted for this study.

4.6.10. Appropriate academic courses and content recognized in home country

Students agree that the selection of a university is influenced by the nature of courses that have ready recognition in their home country. Postgraduate students make an extra effort to link up these two attributes with the expectation that it will enhance the opportunities for career prospects once they return to their home country. Duan

(1997); Wilkinson *et al* (1996); IDP (1995); Lawley (1993); and, Gardiner and Hurst (1990) have provided evidence on the importance of this factor.

4.6.11. Course completion times appropriate to needs and aspirations

Due to the pressure on escalating living costs and university fees, most of the International students are keen to complete their courses as early as possible. Even the scholarship holders or those sponsored by their employers have a strong desire to complete their courses quickly and to return to their home country or their employer. Lawley and Blight (1997), identified *timing of completion* as a factor of significant importance to students as they try to reduce the opportunity loss and overall cost of education.

4.6.12. Academic courses and training relevant to future job and career prospects

Most of the postgraduate students have prior work experience and the selection of courses is based on their evaluation of the program in terms of enhancing career prospects once they return to their homeland. The expectation therefore is that the university would provide academic courses and training necessary to fulfill such ambitions. Duan (1997); Wilkinson *et al* (1996), IDP (1995), Lawley (1993); and, Gardiner and Hurst (1990) provided evidence of the relevance of the content of the course in influencing the choice of a study destination. How relevant are the courses to enhance job and career prospects is of critical importance to postgraduate students as evidenced by the feedback from the focus group discussions.

4.6.13. Flexible timetables

Driven by the need to complete their study in the shortest possible time for a variety of reasons including visa restrictions and obligations to the employer, students expect certain flexibility in choosing the subjects within a semester. Summer programs are popular among such students. Burke (1986) identified this factor to be of significance among undergraduate students. The feedback from focus group discussions revealed that Asian postgraduate students consider flexibility of timetables in terms of allowing

them to organize their study periods, research activities and also part-time employment as extremely important.

4.6.14. Competitive fees compared to other universities

Tuition fees play a significant role in the selection of a study destination as highlighted by many studies (Wu 1989; Steadman and Dagwell 1990; Andressen 1993; Harris and Rhall 1993; Lawley 1997) The notion of competitive fees is interpreted differently, some as lower fees compared to other universities and, others as fees comparable to the study outcomes and the facilities offered to students. The prestige and recognition of the university plays an important role in the comparison of fees between universities.

4.6.15. Fees that offer good value for money for services provided

This is a new variable that emerged from the focus group discussions and the depth interviews. Full fee paying postgraduate students are conscious of how much value is received for the price paid by them. According to Kotler and Fox (1995) the value received is a matter of customer perception and judgment, not of the monetary price paid or the monetary costs alone. From a students' perspective the comparison standard becomes the amount of tuition fees paid to the university, though in the evaluation process, the variable would encompass a broad range of views with regard to the services provided by the university.

4.6.16. High standard of teaching with quality lecturers

Many researchers in the past (Townley 2001; Lawley 1993 and 1997; Bureau of Industry Economics 1989; Austin 1988; Burke 1986; and Rao 1979) have presented this variable in different interpretations such as the quality of the course, academic quality and, high standard of course. Geall (2000) interprets and discusses the variable under three sub categories: *teaching staff, teaching methods,* and *degree programs,* thereby confirming its importance to student satisfaction.

4.6.17. Good access to lecturers

In their academic life, lecturers remain the regular point of contact for all international students. The interaction with lecturers is therefore considered an important part of the study process and experience. Students therefore expect regular access to lecturers to discuss not only their academic issues but also (sometimes) personal problems even before they consult a student counselor. Gatfield *et al* (1999) and Purdy (1992) found the access to lecturers to be of significant importance to students in terms of enriching their academic experience in a university.

4.6.18. Lecturers providing valuable feedback

International students consider feedback from lecturers, on their academic progress, as an important part of their learning experience, which would pave the way for successful study outcomes. Geall (2000) notes that providing feedback to students is an important variable influencing student satisfaction. Harvey (2001) provides evidence of how feedback to students would assist universities to increase the satisfaction levels among the student population.

4.6.19. Availability of high standard lecture material to students

It is a common expectation of international students to have good lecture material from lecturers. This could include lecture notes, guidelines on references and other learning support material. Their judgment of the quality of lectures and the lecturers are largely based on such material supplied to them. Several researchers including Harvey (2001); Townley (2001); Geall (2000) discussed teaching quality and teaching methods as important factors contributing to student satisfaction. The reference to lecture material, however, was feedback received during the focus group discussions conducted for this study.

4.6.20. Appropriate and manageable class sizes

This variable relates to the number of students in a class to ensure adequate interaction among class participants and the maximum number to prevent

overcrowding. Geall (2000) made a reference to the size of classes in a university under facilities and services. Similarly Le Blanc *et al* (1997) discussed delivery systems with reference to class sizes. Gatfield *et al* (1999) identified class size as one of the students' perceived quality elements in their study dealing with quality of education.

4.6.21. Modern and adequate library facilities

The library is an essential facility provided by the university to all students. The size, external appearance, number of books, resources, facilities and services available are features expected and valued by students. The use of the library by most of the international students is directed towards borrowing books and research work. The students expect their university to have adequate books, reference publications and other resources to facilitate their studies. A common observation is that international students regularly use the library as a venue to conduct their normal studies and therefore expect the library to have adequate private and group study rooms to cater to the increasing number of overseas students. Several authors, notably Townley (2001); Harvey (2001); and Lawley, (1997 and 1993), who discussed library facilities under the generic label, *provision of facilities and services in universities*, have provided evidence in regard to the importance of this facility in influencing students' choice as well as satisfaction.

4.6.22. Good operating hours for library access

The operating hours of the library is of great interest to international students. Access during weeknights and weekends are favoured by most of the students. Harvey (2001); and Townley (2001) highlighted library access as a factor contributing to student satisfaction, which they discussed under *facilities and services offered to students* by universities.

4.6.23. Modern and adequate computer facilities

Most postgraduate courses require constant use of computers. Some subjects require computer applications and analysis, and the presence of modern and adequate

computer facilities enhances the attractiveness of universities among students. International students expect reasonably modern computer equipment, in adequate quantities to be made available for their use when required. High expectations are formed by students, given the promises made by universities through their promotional material and local agents or consultants in regard to the availability of core facilities such as computer equipment. Harvey (2001) considers this variable to be important in the formation of student satisfaction.

4.6.24. Good access to computer labs

The access to computer laboratories as and when required by students is also another key expectation. This is related to the previous factor and plays a key role in the satisfaction formation of students (Harvey, 2001). One of the key recommendation of the Dearing Committee in the United Kingdom and the West Committee in Australia in 1997 is the introduction of technology in teaching termed as 'resource based learning' in which 'access' to resources is a pre-requisite. This recommendation is part of the reforms discussed in university structure, teaching strategies and other academic activities to enable the institutions to cope with new challenges in the UK and in Australia. The easy access to computer labs, therefore, becomes a service expected by students enrolled at universities.

4.6.25. Campus well located with easy access

The location of the campus with easy access by public transportation is a feature highly appreciated by international students. This variable has an impact on the choice of an institution.

This issue has not been identified in earlier research, although some studies referred to proximity of study destination as a factor of choice (Purdy, 1992; Goldring, 1984). Proximity, in these studies, is more associated with the distance from the source country to the study destination. The feedback from the focus group discussions, conducted for this study, indicated that the location of a university campus is a contributory factor to choice of a university. It is also considered as a facility provided

by the university for convenience of students. The establishment of university campuses in city locations is associated with this need.

4.6.26. Good standard of student accommodation.

International students expect student accommodation made available by universities or by private agencies to comply with minimum standards of comfort. It is also an expectation that such student accommodation is available when required. Few studies make direct reference to accommodation as a factor. Townley (2001) identifies accommodation with food and not as a separate factor while Harvey (2001) rates it as an important factor influencing student satisfaction. It is believed that other studies have considered accommodation as part of the overall facilities provided by the university.

4.6.27. Student accommodation at reasonable cost

There appears to be a general consensus of opinion among international students that the cost of accommodation is extremely high in developed countries compared to their own and hence Australia is no exception. While students are prepared to accept higher costs, they would expect the costs to be reasonable. One of the key comparative standards they use is the cost incurred by past students. Harvey (2001) in his satisfaction approach model includes student perceptions on cost of accommodation.

4.6.28. Provision of information and guidance by overseas agents and consultants

International students rely heavily on third party information in making their choice of study institution. Australian universities maintain a network of private agents, consultants or representatives to promote their respective institutions in Asian countries. Part of their charter is to provide information and advice to prospective students on matters ranging from courses, fees to visa requirements. For most of the international students these agents and consultants or representatives remain the first and only contact point until they join an Australian institution. Students expect accurate and independent information, advice and guidance from these agents.

Mazzarol *et al* (2001) found the 'availability of information' as a factor influencing choice of a study destination, while Zikopoulus and Barber (1986) have discussed the role played by the overseas agents in providing information to prospective students. Vicziany (1995), on the other hand, provided evidence of the unethical behaviour of overseas agents in India when recruiting students for universities.

4.6.29. Adequate information and guidance through Australian diplomatic and other official representatives (IDP)

In pursuit of independent information and guidance, international students turn to Australian diplomatic missions or other government-sponsored agencies such as the IDP. The latter, in particular, plays a major role in promoting Australia as a study destination.

As pointed out in the earlier paragraph, several studies (Mazzarol *et al* 2001; Zikopoulus and Barber, 1986) have acknowledged the 'availability of information to students' as an important factor influencing choice. Students expect the Australian diplomatic missions, and IDP offices in source countries to provide information on universities, courses and support facilities to assist their decision-making. Once in Australia, many students continue to use the resources of IDP in particular to enhance their learning experience.

4.6.30. Availability of adequate information via the Internet

The Internet is an important source of information to international students and has become part of the computer based learning system in universities. Many commentators both inside and outside higher education have seen technology as a solution to the unsustainability of current university teaching strategies. More flexible learning systems supported by the emerging educational technologies are seen as holding the promise of improved quality and reduced costs (Lindsay, 1997).

Through the use of information technology, universities are now able to produce 'resource-based learning' to allow increased flexibility in time, place, objectives and

learning style. Flexible learning strategies are designed to reduce the requirements for attendance at a specific place at a specific time by using such techniques as asynchronous communication as well as conventional print-based learning packages/materials (Lindsay, 1997)

The Internet therefore remains a decisive source of information to many international students. Tinley (2001) and Harvey (2001) identify the Internet as a key resource provided by the universities to students.

4.6.31. Availability of adequate information on the Internet compared to other Australian universities

Given the important role of the Internet as an information source and an educational tool, the breadth and depth of information provided via respective web pages, become critical to many students. Given the focus on 'flexible learning system', the Internet is an indispensable education tool for all university students (Lindsay, 1997). Universities adopt IT technology for a variety of services, such as delivery of lectures, library services, information databases, international programs, and administrative tasks including assessments.

4.6.32. Availability of international student orientation programs as part of student support services

Student orientation programs are high on the agenda of student support activities of Australian universities. Some universities run special international student orientation programs at least once a year before the academic year begins. Kohut (1997) discusses a number of programs that are aimed at enhancing educational outcomes and contribute to students' university experience. Some of these programs are run throughout the year providing students with skills and support to participate effectively in their courses. Most of the international students from Asia consider such programs to be of value and are eager to participate, given the opportunity.

4.6.33. Availability of counselling services as part of student support services

Many Asian international students go through stress and adjustment difficulties during the initial period of their enrolment at a university. This could be due to various reasons including cultural differences. During the initial period at the university, students are likely to face a 'culture shock' given the new environment in the university chosen (Dunn, 2001). There is evidence of postgraduate students going through adjustment problems related to both living support and language (Houston and Rees, 1999). A major observation is that most students go through academic stress (Rautopuro and Vaisanen, 2001).

Although university counsellors may not be the first port of call in the event of a crisis (friends, relatives and in most cases the lecturer or tutors are consulted first) students expect universities to provide counseling facilities should the need arise.

4.6.34. Availability of other social services as part of student support

Postgraduate students appear unwilling to spend much time on social activities unless they provide a valuable learning experience. Many international students consider interaction with students of other nationalities, including Australian, university lecturers, administrators, and the local community as part of their learning experience. The nature of the social activity and the timing are important considerations, in view of the time constraints. Kohut (1997) conducted an audit of all student support programs of a university in Victoria and identified a number of initiatives that would allow international students to interact socially with peers as well as the society at large with a view to enrich student experience.

4.6.35. Encourage close working relationship between students and international student advisers to ensure appropriate solutions to student problems

Universities recognize the fact that a closer working relationship between the university and students is essential to facilitate satisfactory solutions to student problems. Such interaction builds trust and confidence. Student advisors as

representatives of the university are given the responsibility to build this relationship. Students expect student advisers to be very impartial, understanding and accessible when advice is required. The interaction between international students and the university student advisers are considered, in general, to be a normal feature within a university environment, Houston and Rees (1999), however, found the relationship between postgraduate student and the university to be very complex, which requires greater attention of universities. This complexity is based on the fact that postgraduates are considered both co-producers and customers of the university at various points of time. They have recommended that in order to provide better support, the precise nature of the relationship needs to be further clarified.

4.6.36. Availability of a process to deal with complaints about adequacy of services and facilities

Durvasula *et al* (2001) found that successful handling of customer complaints is an important driver of customer satisfaction. Moreover, the study by Society of Consumer Affairs Professionals (1995) on consumer complaint behaviour concluded that a high level of customer satisfaction is produced when customer complaints are dealt with immediately.

International students expect the university to have a simple but trustworthy process to lodge any complaints when required. They also expect the university to act on such complaints and to provide feedback. Students are very concerned about confidentiality in such a process.

4.7. Questionnaire design

Churchill and Iacobucci, (2002); and Malhotra *et al* (2002) have suggested that the following criteria should be considered in designing a questionnaire.

(1) ability to identify the differences in variables;
(2) ability to obtain a description of individual or group characteristics;
(3) reliability and validity of the instrument;
(4) economy in terms of cost, time and effort;

(5) conciseness of the instrument to avoid reluctance from respondents;

(6) ability to be easily understood by the respondents; and

(7) ability to be easily scored and interpreted.

The above criteria were considered in developing the questionnaire for the study. The first stage of the process was to determine the research objectives that would influence the structure of the questionnaire, the information sought and the sources of such information (Malhotra, 1999; Hussey and Hussey, 1997; Kinnear and Taylor, 1996). Having identified the key variables that would be included in the questionnaire, as discussed earlier in section 4.6, the next step was to design a questionnaire appropriate for gathering data to measure the relative satisfaction level of the student groups in relation to the university as a study destination. The student groups - Chinese, Indian, Indonesian and Thai - would be the source of information, chosen on the basis of geographical segmentation (for example. North, South and South East Asian), differences in terms of nationality and the importance of the groups in terms of the current strength in numbers and the potential of these countries as sources of international students for Australian universities in the future. As shown in Table 1.1, these student groups accounted for 62% of the total international postgraduate students and group wise had the highest percentage of postgraduate students compared to the total intake. The measurement scales (for example. multi-measure bi-polar (continuous) scale, similar to SERVQUAL), and the communication media to be used (for example. mail survey administered by the respective international offices) were also specified at this stage.

The second stage involved determining the question content, type and the interview process. Despite the cultural differences, the major advantage of the respondents was the relative homogeneity given that all were postgraduate students studying in Victorian universities. Compared to undergraduate students, they were mature and experienced and likely to be receptive to research initiatives that would not over tax their time availability. It was necessary therefore that the design of the questionnaire and the type of questions minimize any potential bias and errors in responses arising from cultural, linguistic and other differences among respondents.

As stated earlier, the questionnaire was designed for a mail survey of students administered through the International Offices of the respective universities. Extreme care was taken to make the format and content as simple as possible. It comprised three parts. The first part of the questionnaire was aimed at obtaining student responses with regard to the expectations and perceptions of the university as a study destination, the second part was aimed at eliciting the overall impressions of students in the form of their 'most satisfactory' and 'most unsatisfactory' experience at the university. The final part was used to gather demographic, classificatory, and other information regarding the status of the students.

The format of the questionnaire is an adaptation of the SERVQUAL instrument developed by Parasuraman, Zeithaml and Berry (1988, 1991, and 1994) to measure service quality. The construct of service quality is defined in terms of "perceived" quality - a customers' judgement on entity's overall excellence or superiority. Originally intended for measuring service quality in retail organisations, the instrument and its variants were widely used in many other service industries including banks, healthcare, fast food, entertainment, long distance communications, sporting events and education (Cronin *et al*, 2000; Bitner and Brown, 2000, Ueltscht *et al*, 2001; Gagliano and Hathcote, 1994; O'Conner and Bowers, 1990; Voss *et al*, 1998; Boulding *et al*, 1993).

The first part of the questionnaire contained 36 questions in the form of statements comprising the selected variables presented in two sections under expectations and perceptions of the university as a study destination. The responses to expectations were based on desired (ideal) expectations of choice with the introductory phrase reading, **"The university of my choice *would have* ....."**, followed by the list of 36 statements. The desired expectations are considered to have a better explanatory power than the predictive expectations used by some researchers (Spreng *et al*, 1996). The same statements were repeated with the post-choice perceptions of performance with the introductory phrase, **"The university of my choice *has* ... ..."** followed by the same list of 36 statements.

The statements covered a wide range of issues related to student satisfaction and to reflect a "total student experience" of their postgraduate studies. The use of focus

group discussions assisted in identifying those issues that were relevant and have a direct bearing on their satisfaction levels. These included issues related to administration, benefits of university education, teaching staff, teaching methods and quality, cost factors, university facilities and services. The recognition of the "total student experience" is apparent in much of the literature relating to student feedback (Geall, 2000). As Harvey *et al* (1997, p.11) point out *"students as participants in a process of education consider that the student satisfaction approach should assess what is important to students, rather than those aspects that the producers think are of concern"*. The present study therefore has made an attempt, following exploratory studies, to identify and include in its analysis, issues of concern to students in addition to those already identified by earlier researchers.

The second part of the questionnaire comprised two key statements seeking student's comments on the "most satisfactory" and "most unsatisfactory" experience or experiences in regard to the university as a study destination. The questions were open-ended and the objective of this part of the questionnaire was to provide an opportunity for respondents to comment on any issue that was of concern to them. Very simple wording was used in these statements as it has been found that international students have difficulties with open-ended questions, particularly students from South East Asia (Jones, 1989).

These comments are considered as additional confirmation of the responses and additional inputs that would be useful in the analysis of the satisfaction levels of students.

The third part of the questionnaire contains *classificatory* questions aimed at gathering demographic data (age, sex, marital status) and functional data on the diversity of the sample in terms of university attended, faculty, course type, stage of completion and, source of funding of studies.

4.8.   Response format

The questions were direct and responses were expected on a multi-measure bi-polar (continuous) scale, similar to SERVQUAL, which has been well validated (Bearden

and Netemeyer, 1999; Oliver 1981; Westbrook, 1980; and Oliver 1996). The scale has been adapted to a number of service industries, including retailing (Baker, Grewal, Parasuraman, 1994; Finn and Lam, 1986), Health Care (Reidenbach and Sandifer-Smallwood, 1990; Jones, 1993; Brown and Swartz, 1989), and higher education (Davis and Allen, 1990; Hampton, 1993, Tomovick *et al,* 1996). Given the strong arguments for the validity of the scale, along with the scale's acceptance and use by many researchers, an adaptation of the refined SERVQUAL scale was considered appropriate for this study.

The scale comprised of two matched sets of 36 items, each describing expectations and perceptions of the services provided by the university as a study destination. Both sets of items are operationalised using 7 point bipolar scales labelled *"1= strongly disagree* to *7= strong agree".* The respondents were expected to indicate their choice by circling a number along this scale. If the respondents consider that the item was not relevant, they were requested to circle the number 9 (for example. 9=not applicable), which was inserted at the right end of the scale in the pilot questionnaire.

According to Oliver (1996), a 5 - 7 point scale is more popular with researchers in view of its ability to minimise skewed responses. Consumers, in general, tend to rate products and services positively, with bulk of the responses in the positive half of the scale. *"This tendency is more pronounced for scales with a smaller number of points such as 3 and 4"* (Oliver, 1996, p. 53). The 7 point scale also provides a midpoint, which can be used by respondents if they remain undecided and wishes to express neutrality. Rejecting claims by opponents that 'fence sitting' provides no information, Oliver (1996) asserts that degree of neutrality *is* information, and the number of respondents who fall into this category would provide additional insight.

The instrument used in the study, as pointed out earlier, is an adaptation of the SERVQUAL instrument with the inclusion of a variety of variables that need to be measured. This was consistent with the rationale presented by the authors of SERVQUAL that "while SERVQUAL can be used in its present form to assess and compare quality across a wide variety of firms, appropriate adaptation of the instrument may be desirable when only a single service is investigated" (Parasuraman *et al,* 1988, pp. 27-28). The use of this scale was also based on its reliability as

evidenced by the tests in different service settings, including a business school placement centre by Carmen (1990).

There was evidence on the need to vary item wording across settings and the questions to suit different service settings. For example, the study by Finn and Lamb (1991) using the responses from a telephone survey involving retail shopping experiences did not provide support for the multidimensional (for example. five correlated factors) measurement model implied by the SERVQUAL scale, though the individual factor reliabilities were found to be acceptable. This research also found that the five dimensions of SERVQUAL, in its original form and labels were inappropriate to incorporate the variety of variables (attributes) chosen for measurement. The variables were constructed with input from the literature and focus group discussions. The factors generated from factor analysis were considered as constructs for measurement in this study.

4.9. Pre- testing of the questionnaire

The questionnaire was pre- tested on 12 international postgraduate students representing all of the countries under investigation in this study to identify any flaws in the design and correct them prior to its administration (Malhotra et al, 2002; Churchill and Iacobucci, 2002). Pre-testing was done at two university locations: Victoria University of Technology and the RMIT University.

The objectives of the pre-testing were to: .

-      test that the questions are clear and understandable;
-      test the wording, sequence, form and layout, question difficulty, question and survey instructions;
-      estimate the time involved in filling out the questionnaire.

The draft questionnaires were distributed to each of the participants to complete followed by a discussion of the questionnaire as a group and on individual basis.

4.10. Revision of the questionnaire

A number of possible amendments were identified during the pre-testing phase towards improving the format, content and appearance of the questionnaire.

While the students did not have a problem with a seven point scale, they found the introduction of a number 9, at the end of the scale to record a 'non applicable' response confusing. This was rectified in the revised questionnaire by separating the "not applicable" response from the 7-point scale with the letters 'NA'. Use of this non-response was clearly explained in the instruction section of the final form.

Another important feedback was with regard to the absence of other nationalities being mentioned in the questionnaire. The pilot questionnaire listed only the target four countries. Given that the administration of the questionnaire were to be undertaken through the International Offices of the respective universities, it was considered necessary to have another box against 'Other (Please specify)' in the event that the questionnaire is responded to by students of other nationalities. Though this risk was small as International offices were instructed to distribute the questionnaire only among the targeted nationalities, it was considered an appropriate strategy.

Another critical comment was related to the response rate as the majority of the students indicated that an incentive should be offered to respondents.

"We are hard pressed for time. Unless you provide us a good incentive to complete the questionnaire, it will be difficult to expect a good response rate"

Malhotra *et al*, 2002, have discussed the effectiveness of providing incentives to increase the response rates in surveys. This suggestion was taken into consideration and two return air-tickets to an Asian destination from Australia were offered as an incentive. The incentive was based on a lottery system whereby all respondents would be eligible to enter the draw. The incentive was displayed on the front page of the questionnaire and a special promotional flyer was inserted explaining details of the

draw together with "how to enter" instructions. Entry to the draw was not mandatory. The draw was held and the award presented to the winner at Victoria University of Technology.

4.11. Reliability of the instrument

Several strategies were followed to ensure the reliability of the instrument. These included the development of an appropriate scale, the development of theoretical concepts, which are uniform for measurement with inputs from literature and exploratory research, pre-testing of the questionnaire, factor analysis, calculation of Cronbach's alpha and factor correlation. A number of international educational administrators and experts in the field also read and commented on the questions. The details of the reliability analysis are discussed in section 5.3.3.

4.12. Sampling Issues

As pointed out in section 4.7 above, the questionnaire was designed to be administered via a mail survey. Given the focus on fee paying postgraduate students from China, India, Indonesia and Thailand studying in universities in Victoria, and the difficulty in reaching the students without contact addresses, the option available for the study was to administer the questionnaire through the respective universities. This was necessary as students' addresses were treated as highly confidential information. The objective of going through the university administration was also to achieve a maximum response rate to ensure a sample size that would be statistically adequate.

The major obstacle, however, was the difficulty in obtaining the permission from universities to administer the survey. Following an informal approach to all universities in Victoria, through the international branch of the researcher's home university, an official request signed by the Principal Supervisor was sent to all Victorian Universities seeking their support for the survey. Two universities declined to participate on the basis that their students are 'over surveyed'. This process of obtaining permission to mail the survey took several months. Four universities agreed to mail the questionnaire through their internal mail, while one university allowed

access to the classrooms to distribute the questionnaires with the knowledge and permission of the lecturer in charge.

4.12.1. Sample strategy

The target population for the study was defined as fee paying international postgraduate students from China, India, Indonesia and Thailand in the selected five universities in Victoria

Apart from having a sample representative of the population, the objective of the sampling strategy was to achieve sampling equivalence between the student groups and the universities. Hair *et al* (1995) cautions that in analysing data it is important to consider not only the statistical significance but also the practical significance of the results for managerial application. When a sample size exceeds 200 to 300 respondents, the statistical significance increases and it is incumbent upon the researcher to examine all significant results to find out whether they provide practical significance as well. In this context, he cautions that unequal sample sizes between groups can also influence the results. Hair *et al* (1995) point out that the equality of variance among groups can be best achieved with groups of approximately equal size (if the largest group size divided by the smallest group size is less than 1.5).

Given the present study deals with four student groups studying in five universities in Victoria the equality of sample size is computed in regard to the responses from both the universities and the student groups employing a random sampling approach.

4.12.2. Sample frame

Churchill and Iacobucci (2002) describe the sampling frame as a list of sampling units from which a sample is drawn and the list could consist of geographic areas, institutions, individuals or other units. The sampling frame for this study was the student lists held by universities in Victoria, which agreed to participate in the study. The issues that were considered in constructing the sampling frame were the accessibility, duplication of student names and errors in mailing addresses, time and resource constraints.

As indicated in section 4.12 above, accessibility to students was limited to 5 universities. Given that the databases were confidential, the mail outs were undertaken directly by the international offices of the universities, with the exception of one university, where the survey was administered in classrooms. The researcher had no control over the accuracy of the mailing addresses. The dependence of the international offices to administer the survey was considered the best option in terms of time and resource constraints.

4.12.3. Sampling method

The sampling method adopted for the study involved two techniques in two stages. The first stage involved a form of judgemental sampling based on the fact that a representative sample from each university selected for the study was extracted. The target population and the number of questionnaires mailed or distributed through the universities were dictated by the number of postgraduate students registered with each institution from the Asian countries selected for the study. An attempt was made therefore to reach every student satisfying the minimum characteristic of one of these nationalities.

The second stage involved random sampling to produce a sample of approximately equal size from each country and university, as explained under sampling strategy above.

4.12.4. Sample size

Malhotra *et al* (2002) note that determining the sample size is complex and involves several qualitative and quantitative considerations. Important qualitative factors to be considered are:

- the importance of the decision;
- the nature of research;
- the number of variables;
- the nature of the analysis;

- the sample sizes used in similar studies;
- incidence rates;
- completion rates; and
- resource constraints.

Given the importance of the research study in terms of measuring the relative satisfaction of the target student groups and the fact that the study included a large number of variables and was subject to a multivariate analysis of data, a reasonably large sample was expected to be derived. Duan (1997) notes that similar independent (un-sponsored) studies have attracted between 200-400 responses. It was clear that the constraints imposed by the processes involved in accessing the university database and other bureaucratic controls would influence the sample size for this study.

The main strategy used to select the sample was to request the international offices of the respective universities to extract all fee paying postgraduate international students belonging to the targeted nationalities from its student database. The questionnaire was then sent to each of these students directly by the respective universities.

4.13. Questionnaire administration

Following agreement with the International Offices of the respective universities to administer the questionnaire among their students, a mailing kit including the copy of the questionnaire, a covering letter from the researcher, the promotional flyer for the incentive and a self addressed reply paid envelope (researcher's home university) was prepared. The copy of the questionnaire is given in appendix 6. Upon confirmation of the numbers required by each university (based on the number of students representing the target student groups) the kits were delivered to each International office by the researcher. These kits were then mailed through their own university mail system, using the address labels prepared by them. A covering letter from the Director of the International Office inviting the cooperation of students to participate in the survey was also sent with the kit. Where permission was granted to reach students in the classroom, the survey kits were distributed to students by the course coordinator of its Graduate School.

The returned completed questionnaires were progressively recorded and the data was entered into a SPSS file. The returned questionnaires, due to errors in mailing addresses, were also recorded and filed.

Part B.

4.14. Quantitative Research Methods and Analysis

This part of the chapter will discuss the quantitative data analysis strategy employed in the study. The source of quantitative data is the student responses to the questionnaire discussed in the earlier section. The strategies employed to ensure the gathering of quality data for statistical analysis were also discussed in the previous section. These included questionnaire design, selection of sample, and questionnaire administration. This section will build on this background to discuss the quantitative methods used to analyse the data.

4.14.1. Data Analysis strategy

Prior to undertaking the quantitative analysis, a three-stage process was followed to prepare the data for analysis, which included (a) editing the completed questionnaires, (b) coding of responses, and (c) cleaning and screening data.

(a)   Editing of completed questionnaires

The editing comprised of checks to ensure that the data received through returned questionnaires were complete, and free of inconsistencies. Where significant errors in filling out the questionnaire were identified, or partly completed questionnaires were found, questionnaires were rejected.

Another process was the identification of responses from students of other countries of origin. As discussed in section 4.10, given the possibility of the questionnaires being distributed to students other than from the target countries, the responses received from "other" countries were eliminated from the data used for the analysis.

(b)   Coding of responses

The questionnaire was appropriately pre-coded prior to administration, and there was no additional coding of responses that was necessary except for the "open ended" qualitative responses in the second part of the questionnaire. The post coding was essentially a rearrangement of the responses into different themes or categories to suit the analysis. This was required as the responses were varied and most often combined with several themes, similar to any focus group discussion or depth interview. To facilitate the analysis of this data, the responses were categorised under the four constructs generated from the factor analysis.

(c)   Cleaning and screening data

This process involved checking for inconsistencies and missing data. Using the SPSS statistical package, the frequencies procedure was run for every variable to check for errors in data entry. Checking with the individual responses of each questionnaire, any detected errors were rectified. In order to ensure accuracy of the data, the original questionnaire were randomly checked for any possible incorrect entries.

The above process was a pre-requisite to a robust analysis of the data, which was also influenced by the logical selection of the data analysis techniques. The following section discusses the procedure followed and rationale of the techniques used.

The quantitative data analysis techniques selected are consistent with the research aims and objectives, the research questions, characteristics of the data and the properties of the statistical techniques (Malhotra *et al*, 2002) These included factor analysis, ANOVA, Logistic and Linear regression. The use of multiple techniques for data analysis is aimed at achieving the objectivity, rigor and logical reasoning in examining the research problems.

Figure 4.2 shows the stages involved in the data analysis procedure followed in this study.

Figure 4. 2: Diagrammatic presentation of data analysis procedure
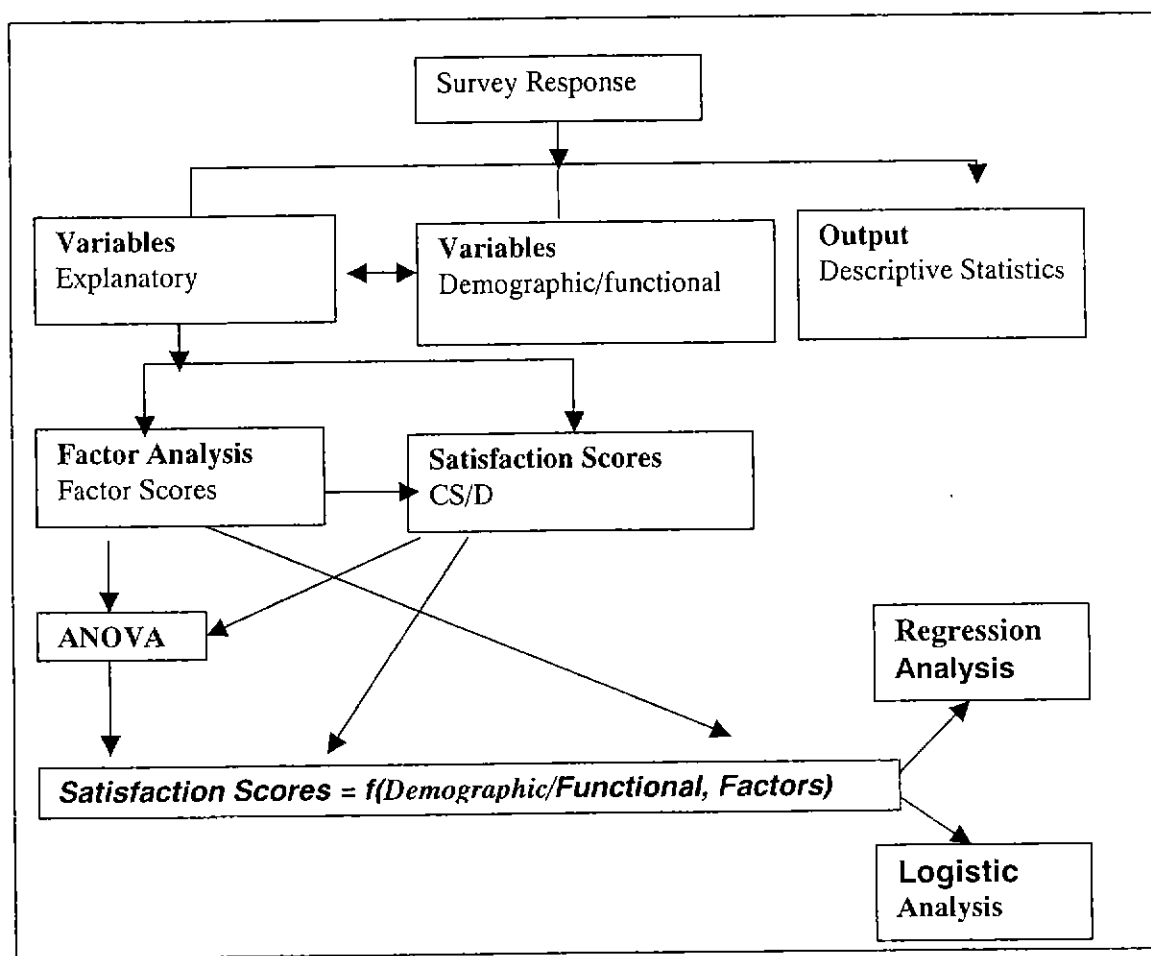
Recalling the main research question investigated in the study: **" Are there differences in the customer satisfaction and dissatisfaction (CS/D) between international postgraduate students from Asia studying in Victorian universities?"**, the aim of the study is to determine the relative satisfaction (or dissatisfaction) levels of students measured on the basis of several variables and aggregated constructs. Given the multi-dimensional nature of the study, it was considered appropriate to use multivariate analysis involving a series of techniques.

The data analysis process and its stages are described below.

4.14.2. Factor analysis

Factor analysis is a data reduction methodology, which serves to define the underlying structure in a data matrix (Hair *et al*, 1995). This technique is used to

reduce a large number of variables to a smaller set of underlying factors that summarise the essential information contained in the variables. These factors are then used for further analysis.

Factor extractions were conducted using the 36 items related to *University as a study destination.* In terms of the number of cases required to conduct factor analysis, methodologists vary in their interpretations. Hatcher (1994) contends that the number of subjects should be the larger of 5 times the number of variables or 100. On the other hand, Hutcheson and Sofroniou (1999) recommend at least 150-300 cases. Gorsuch (1974), and Kline (1998) propose 5:1 and 2:1 ratio respectively of subjects per variable up to a total of 200 and 100 respectively. Another interpretation is by Lawley and Maxwell (1971) who say that there should be 51 more cases than the number of variables, to support chi-square testing. Hair *et al* (1995), confirm that a sample size of 100 is adequate to calculate the correlation between variables. The total number of subjects in the present study is 371, and therefore conforms to the required ratio of subjects per variable.

4.14.3. Satisfaction Scores

As discussed earlier, the measurement of customer satisfaction is a highly contentious issue and the measurement of relative satisfaction is clouded with controversy. Drawing on past studies, Yuksel and Remmington (1998) have discussed six alternate ways of measuring customer satisfaction of a product or service. These refer to (a) the performance only approach (b) the performance weighted by importance, (c) importance minus performance, (d) direct confirmation-disconfirmation, (e) confirmation-disconfirmation weighted by importance, and (f) performance minus predictive expectations.

As outlined in chapter one, the measurement approach followed in the present study is an adaptation of the seminal expectancy disconfirmation paradigm (Oliver, 1996), and of the difference (gap) scores to measure CS/D (Parasuraman *et al,* 1991 and 1985). The key requirement is to ensure that the measurement should be able to encapsulate the *relativity* of the information presented in the data on a comparative basis. To this end, the present study supplements the gap scores with satisfaction scores derived

from using the ratio method of calculation. The measurement criteria in this study is therefore based on three different satisfaction scores namely, (a) the raw difference (gap) score (b) the arithmetic average of the ratio score, and (c) the geometric average of the ratio score, following the weighted average concept of SERVQUAL measurement approach (Parasuraman *et al*, 1991 and 1985).

Outlined below are the approaches used to calculate the difference (gap) score, the arithmetic average of the ratio score, and the geometric average of the ratio score, which were used in regression analysis. The first approach describes the process followed to calculate the difference (gap) score, while the second approach explains the method used to compute the two variants of the ratio scores, for example. arithmetic average, and the geometric average.

(a)   First approach

The first approach was used to calculate the difference (gap) between perceptions (P) and expectations (E) as an aggregated score. One major problem with the difference score, calculated on a direct P-E basis (as a raw score), is the presence of negative values, which would make data transformation involved in logs difficult. Furthermore, these raw scores pose the problem of information loss due to minus and plus cancelling out each other when averaging. In order to eliminate this problem a simple arithmetic formula was used in calculating the difference scores, as shown below.

Satisfaction score = 6+P-E.

The formula uses the value 6 as the standard where >6 would correspond to a satisfied student, and <6 to a dissatisfied student, and the score of 6 would represent "just satisfied". The rationale for the use of 6 is because minus 6 (-6) is the largest possible negative for the satisfaction score given the interval of scale 1 to 7. For example 7-1 = 6 or 1-6 = -1. The number 6 will replace 0 as the mid point of the satisfaction score and will eliminate all negative scores. The scores produced in this process would range from 0-12, where the score of 12 would represent "most satisfied" or "delighted".

These scores are then used to classify respondents as: satisfied or dissatisfied with scores $\geq$ 6 representing those satisfied and scores < 6 indicating those dissatisfied. The score of 6 represents 'just satisfied'.

(b) Second approach

The second approach was used to calculate satisfaction scores as a ratio. The ratio is expressed in terms of (a) arithmetic average of the ratio and (b) the geometric average of the ratio. The formula used in this instance is:

Satisfaction score = P/E (with range of 1/7 to 7)

These scores are then used to classify respondents as satisfied
(score $\geq$ 1) or dissatisfied (score < 1), and are subject to statistical tests to determine whether there are any significant differences in the scores and the classifications.

4.14.4. ANOVA

ANOVA is a statistical technique used to determine, on the basis of one dependent measure, whether samples are from populations with equal means (Hair *et al*, 1995). It is used to assess group differences on a single metric dependent variable. In this study, ANOVA is employed to estimate the variance between the dependent variable, for example. student satisfaction (represented by three scores) and the independent groups - universities and the countries of origin. This entails estimates of between-groups variance (measuring the effect of the independent variable combined with error variance), and the within-groups variance, which is the error variance itself (Coakes and Steed, 2001). The statistical significance of the differences between groups is assessed, and null hypotheses for example. the samples in the test come from populations with equal means for a dependent variable, is tested using this procedure. The null hypotheses, H_o in this study is interpreted as *the satisfaction levels (means) are identical across student groups by country of origin and university,*

and the interpretation of the alternative hypothesis H_1 is that *the satisfaction levels (means) are different across student groups by country of origin and university.*

Two ANOVA models are used in the present analysis, which are given below.

Model 1: Satisfaction = f (Country)

Model 2: Satisfaction = f (University).

The first model tests the differences in student satisfaction between countries of origin – China, India, Indonesia and Thailand. The three categories of satisfaction scores (for example. Difference score, Arithmetic average of the ratio score, and Geometric average of the ratio score), are cross tabulated with individual groups to determine (a) the total number of students satisfied/dissatisfied within each group, (b) the variance between the groups, and (c) the level of significance of the variances represented by a p-value of <0.05.

The second model tests the variances in student satisfaction between the five universities selected for the study. As in the case of the first model, the three categories of satisfaction scores are cross tabulated with student groups in each university to determine the variance in student satisfaction levels between the universities, and the level of significance of these variances, with a p-value of <0.05.

The results are presented with written evaluations supported by tables, charts and statistical models.

4.14.5. Regression Analysis

Regression analysis is a multivariate technique to explain the relationship between a single dependent and a set of independent variables. It provides an objective means of assessing the predictive power of asset of independent variables (Hair *et al,* 1995). Studenmund (1997) describes it as a statistical technique that explains the movements of one variable, the dependent variable as a function of movements in a set of other independent or explanatory variables.

This study uses two types of regression analysis - Logistic and General Linear modelling. The former is used to predict the probability of students being satisfied or not (using student satisfaction as a dichotomous dependent variable) and to test the global null hypotheses using Likelihood ratio and Wald statistic, which provides the statistical significance for each estimated coefficient. The latter, is employed to assess the degree and character of the relationship between student satisfaction and independent variables, and their statistical significance.

4.14.5.1.   Logistic Regression

The logistic regression modelling is used to analyse student satisfaction in relation to (a) the importance of the factors using factor scores, (b) significance of the demographic and functional variables expressed by the maximum likelihood estimates.

(a)   Analysis of Importance of the factors using factor scores

Factor scores are composite measure for each factor representing the characteristics of each subject, and have the advantage of representing a composite of all variables loading on the factor (Hair *et al*, 1995). The scores are generated, using the *pairwise* regression method, during the factor analysis process, which were then used in a logistic regression procedure to cross tabulate factor scores with the three satisfaction scores, as discussed in section 4.14.3, to ascertain the importance of the factors in explaining satisfaction.

Three models, representing each of the satisfaction scores, are tested in this process using the following equations. UNISAT is an abbreviation used to identify the factors.

(1)   Difference score (S_D)

$$S_D = \beta_o + \beta \text{ UNISAT1} + \beta \text{ UNISAT2} + \beta \text{ UNISAT3} + \beta \text{ UNISAT4}$$

(2)   Arithmetic average of the ratio score (S_A)

$$S_A = \beta_o + \beta \text{ UNISAT1} + \beta \text{ UNISAT2} + \beta \text{ UNISAT3} + \beta \text{ UNISAT4}$$

Factor analysis was conducted to establish the communality of variables, and as a data reduction measure. Three types of aggregated satisfaction scores were calculated for subsequent use in cross tabulations with theoretical constructs and the independent variables. ANOVA, logistic and general linear regression modelling were used to analyse data, as depicted in the final model of post-choice satisfaction of postgraduate students from Asia in figure 4.3 presented below.

**Figure 4.3:** Final model of post-choice satisfaction

Legend: P = Perception, E = Expectation
           RD score = Raw difference (gap) score
           AR score = Arithmetic average of the ratio score
   GR score = Geometric average of the ratio score

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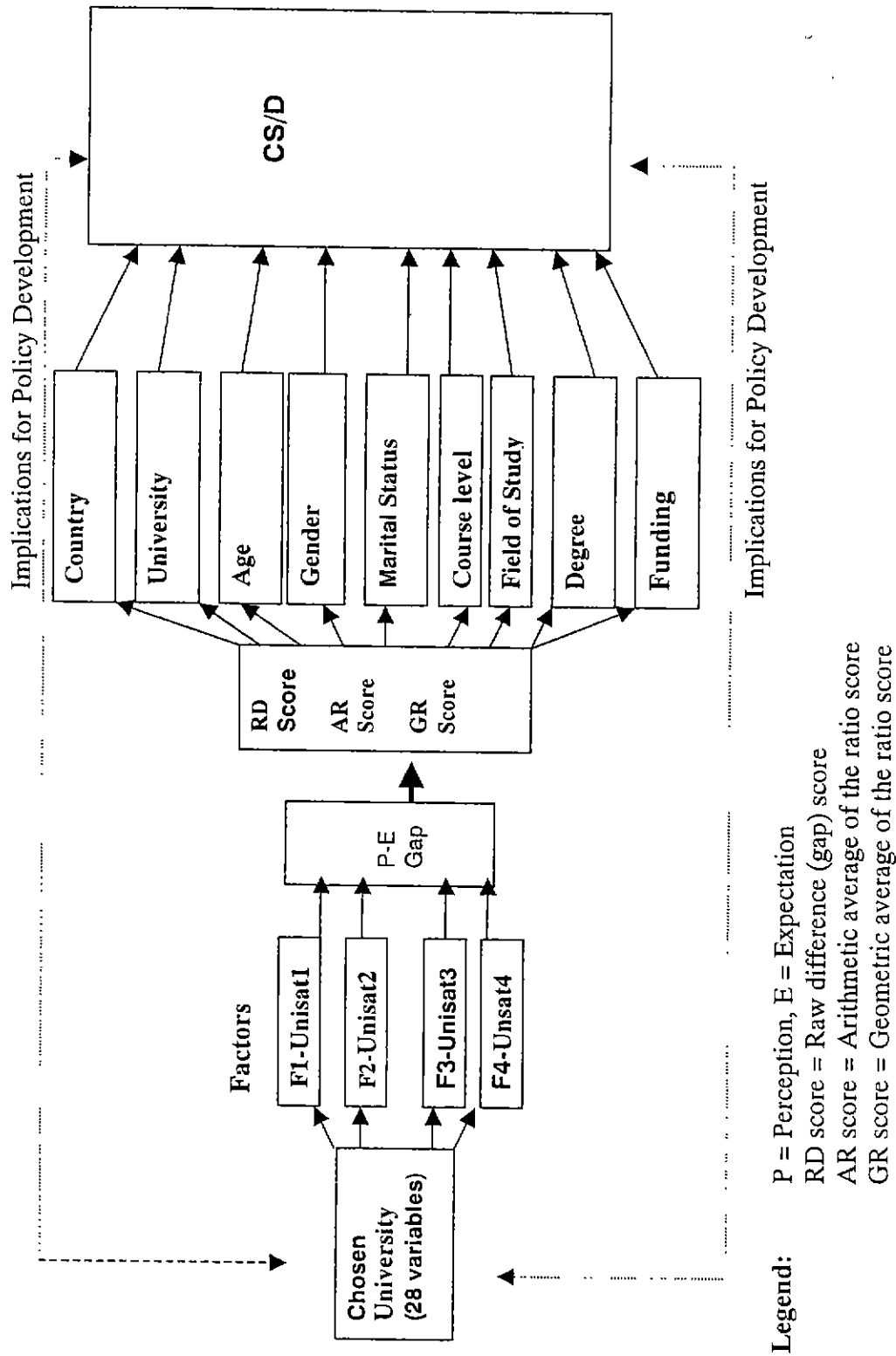
Chapter 5

Data analysis and results

5.1.   Introduction

This chapter discusses the analysis of data under five headings as shown in figure 5.1.

Figure 5.1: Outline of the chapter

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┌─────────────────────────────────────┐
│        5.1. Introduction             │
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┌─────────────────────────────────────┐
│ 5.2.     Sample Characteristics     │
│ 5.2.1.  Response Rates and          │
│          Transformation of data      │
│ 5.2.2.  Non-response issues          │
│ 5.2.3.  Sample profile analysis and  │
│          cross tabulation of data    │
└─────────────────────────────────────┘
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┌─────────────────────────────────────┐
│ 5.3.     Factor analysis            │
│ 5.3.1.  Description of factors       │
│ 5.3.2.  Criteria determining number  │
│          of factors                  │
│ 5.3.3.  Reliability analysis         │
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│        5.4. Satisfaction scores      │
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│        5.5. Hypotheses testing       │
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│        5.6. Summary                  │
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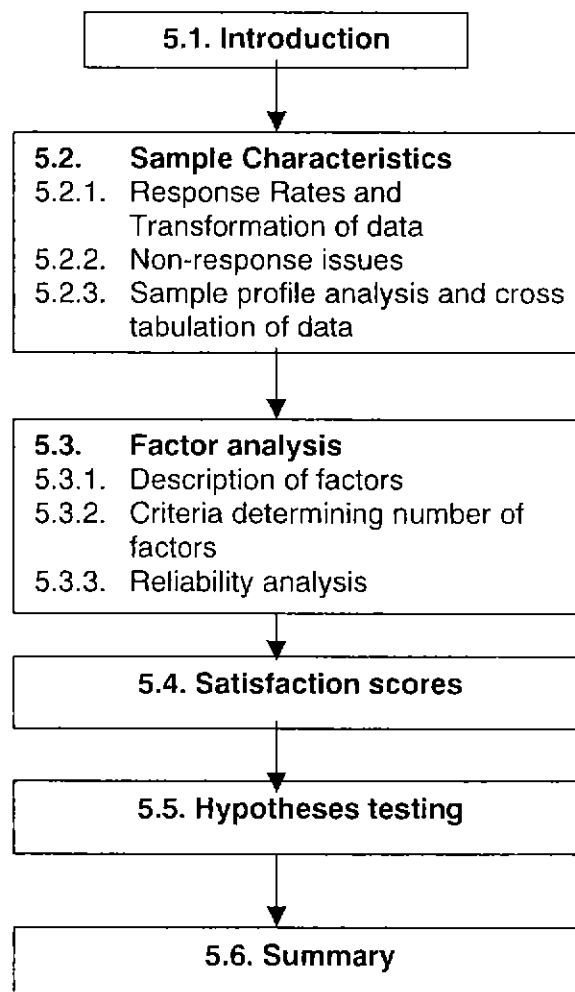
Section 5.2 discusses the sample characteristics, and focuses on response rates, non-response issues, and sample profile analysis. Section 5.3 reports on the results of the factor analysis, which provides the basis for other quantitative analysis techniques comprising ANOVA, and regression modelling. Section 5.4 presents the aggregated satisfaction scores, which are used to cross-tabulate with factors and explanatory variables, while section 5.5 discusses the testing of the hypotheses developed for the study incorporating the findings of ANOVA, and regression analysis. The final section 5.6 summarises the results.

5.2. Sample characteristics

The discussion, in this section, will be centred on:

(a)   response rate and transformation of data;

(b)   non-response errors; and

(c)   respondent profile analysis and the cross tabulation of data.

5.2.1. Response rate and transformation of data

A total of 2,514 questionnaires were supplied to five universities in Victoria, which agreed to participate in the research project involving international postgraduate students from China, India, Indonesia and Thailand, studying in these universities. As discussed in sections 4.12 and 4.13, international offices of the respective universities mailed the questionnaires to these students, using their internal mailing lists, with the exception of one university where the questionnaire was administered in classrooms. The number of the questionnaires supplied to universities was dictated by these mailing lists.

Out of the total number of questionnaires mailed or distributed to students, 573 completed questionnaires were returned and 162 questionnaires were returned undelivered. The response rate, based on the assumption that 2,352 international postgraduate students received the questionnaires, was therefore 24.3%. Allowing for errors in completing the questionnaire, eliminating responses from other countries of origin and establishing equal samples sizes of student groups to improve the statistical

significance of the analysis, resulting in the total useable sample of students reducing to 371, as explained in the sampling strategy in section 4.12.1. The sample size used for the analysis, therefore, represented 65% of all respondents, and 24.3% of all recipients of the questionnaire.

For an independent mail survey of postgraduate students with administrative constraints, as discussed in section 4.12.4, and particularly with the researcher having no control of the administration of the survey, the response rate is acceptable. According to Duan (1997) similar independent studies have attracted responses between 200-400, and Hair *et al* (1995) consider that a sample size that exceeds 300 would be statistically significant.

The follow up action by the researcher was limited to monitoring of the administration of the survey through frequent contact with the respective universities. It was not possible for the researcher to involve the universities again in the survey process to follow up on non-respondents. Thus, the response bias is ignored in this study. This is one of the limitations of the study.

5.2.2. Non-response issues

Non-response is a common problem in any survey, and it raises the question of whether or not the non-respondents are significantly different from those who responded. Churchill and Iacobucci (2002), point out that although non-response can potentially create a non-observation bias or a sampling error, it is difficult to estimate this error.

Another unknown factor is the reasons for the non-response. According to Churchill and Iacobucci (2002), and Malhotra *et al* (2002), reasons such as refusals, wrong mailing addresses, and lost mail, can be attributed to non-response, all but the last reason may introduce a non-response bias.

In order to minimize the impact of non-response bias, the total sample used in this study was adjusted in terms of equal sample sizes of student groups. The use of equal

sample sizes, as explained in section 4.12.1, improves the statistical significance and validity of the sample (Hair *et al*, 1995).

5.2.3. Sample profile analysis and cross tabulation of data

Tables 5.1 to 5.8 show the characteristics of the respondents and the distribution patterns in relation to the country of origin, university enrolment, gender, age, marital status, field of study, study degree, stage of study and financing of study. The key characteristics are discussed in the subsequent sections.

Table 5.1a and 5.1b show the distribution of respondents in relation to the country of origin and the university of enrolment. The tables indicate an equal distribution of the sample of 371 by country of origin as well as by university. As shown in table 5.1a, students from China represent 23.7 percent of the sample while those from India, Indonesia and Thailand represent 25.6 percent, 26.7 percent and 24 percent respectively. Table 5.1b, shows a similar pattern in the distribution of the sample within universities. For example, 15.4 percent of the students are drawn from Deakin University, 16.7 percent from La Trobe University, 22.4 percent from The University of Melbourne, 22.6 percent from Swinburne University of Technology and 22.9 percent from Victoria University of Technology. It also reveals that though the student sample is well dispersed among all universities, certain nationalities seem to be over represented in some universities. For example, Indonesian students have majority representation in Deakin and Melbourne universities. Similarly, Indian students have majority representation in Victoria and Swinburne universities, whereas the majority of Thai students are equally distributed among Melbourne, Victoria and Swinburne universities. However, the distribution profile indicates that an overall group representation of nationality and university has been achieved allowing for equal sample sizes, thereby improving the validity and the statistical significance of the sample.

Table 5.1a: Distribution of respondents by country of origin

China	India	Indonesia	Thailand	Total
88	95	99	89	371
(23.7)	(25.8)	(26.7)	(24.0)	(100)

*The percentages are in parenthesis

Table 5.1b: Distribution of respondents by university

University/ Country of origin	China	India	Indonesia	Thailand	Total Distrib	Distrib .By Uni.
Deakin University	7 (12.3)	5 (8.8)	37 (64.9)	8 (14.0)	57 (100)	57 (15.4)
La Trobe University	47 (75.8)	4 (6.5)	10 (16.1)	1 (1.6)	62 (100)	62 (16.7)
Melbourne University	18 (21.7)	5 (8.4)	34 (41.0)	24 (28.9)	83 (100)	83 (22.4)
Swinburne University	5 (6.0)	49 (58.3)	7 (8.3)	23 (27.4)	84 (100)	84 (22.6)
Victoria University	11 (12.9)	30 (35.3	11 (12.9)	33 (38.8)	85 (100)	85 (22.9)

*The percentages are in parenthesis

5.2.3.1. Gender

As shown in table 5.2, the gender of the sample is equally distributed with 196 males and 175 females, representing 53% and 47% respectively of the total sample. While the sample of students from China and Indonesia has roughly equal proportions of males and females, higher male representation in the Indian sample (60 males representing 63% of all Indian students, and 37% of all males in the total sample), and higher female representation of 52 students in the Thai sample (nearly 60% of all Thai students, and 30% of all females in the total sample) is a significant feature in the gender distribution.

Table 5.2: Gender profile

Gender/Country of origin	China	India	Indonesia	Thailand	Total Distrib	Distrib. by Gender
Male	47 (24.0)	60 (30.0)	52 (26.5)	37 (18.9)	196 (100)	196 (52.8)
Female	41 (23.4)	35 (20.0)	47 (26.9)	52 (29.7)	175 (100)	175 (47.2)

*The percentages are in parenthesis

The distribution of males and females within the student groups is also approximately equal. For example, students from China comprise 24% of males and 23.4% of females, while from India there are 30% males and 20% females, from Indonesia, 26.5% males and 26.9% females, and from Thailand, 18.9% males and 29.7% females.

The normal distribution of the gender in the sample, as demonstrated in the preceding analysis, minimizes the sample bias and provides opportunities for more realistic outcomes.

5.2.3.2. Age

The statistics in table 5.3 show that 70.4% of all students are below 30 years. The age category 25-29 remains the largest group representing 40% of the total sample. Thirty percent of students are below 25 years and another 30% are over 30 years. The representation of mature students (over 30 years of age) representing around 30% of the sample is considered normal among post-graduate programs (DETYA, 2000).

As shown in table 5.3, students from India are the youngest in the sample compared to all other student groups, accounting for 52.7% of the 21-24 year age category and 34% of the age category less than 30 years. Students from China, on the other hand, are more mature accounting for nearly 38% of all students between 30-34 age category, and 73% of all students over 35 years.

Table 5.3: Age profile

Age range/ Country	China	India	Indonesia	Thailand	Total Distrib.	Distrib by age
21-24	6 (5.4)	59 (52.7)	21 (18.7)	26 (23.2)	112 (100)	112 (30.2)
25-29	22 (14.8)	29 (19.5)	54 (36.2)	44 (29.5)	149 (100)	149 (40.2)
30-34	22 (37.9)	5 (8.6)	18 (31.0)	13 (22.5)	58 (100)	58 (15.6)
35 and Over	38 (73.2)	2 (3.8)	6 (11.5)	6 (11.5)	52 (100)	52 (14)

*The percentages are in parenthesis

In comparison, students from Indonesia and Thailand represent the middle age category between 25-34 years. For example, 36.2% of Indonesian students and 30% of Thai students fall into the age group between 25-29 years, while another 31% of Indonesian students and 22.5% of Thai students belong to the age category of 30-34 years.

5.2.3.3.   Marital Status

As shown in table 5.4, the majority of the students (69.5% of the total sample) are unmarried.

Table 5.4: Marital Status

Marital status/ Country	China	India	Indonesia	Thailand	Total Distrib.	Total by status
Married	63 (55.8)	12 (10.6)	28 (24.8)	10 (8.8)	113 (100)	113 (30.50)
Single	25 (9.7)	83 (32.2)	71 (27.5)	79 (30.6)	258 (100)	258 (69.5)

*The percentages are in parenthesis

Majority of students from Thailand (79 representing 89% of the Thai sample of students), India (83 students representing 87.4% of the Indian sample of students), and Indonesia (71 students representing 72% of the Indonesian sample of students) are the dominant groups among the unmarried sample. This is consistent with the age profile discussed earlier as Indian and Thai students are among the youngest in the sample while a majority of students from Indonesia are under 30 years. In comparison, 63 students out of 88 representing nearly 72% of all students from China are married. They account for nearly 56% of married students in the total sample of students

5.2.3.4. Field of Study

As shown in Table 5.5 the academic discipline of the majority of the sample (52.3%) is Business Management and Economics, followed by Computer and Information Services (23.2%).

Table 5.5: Major fields of study

Field of study/ Country	China	India	Indonesia	Thailand	Total Distrib	Distrib. by discipline
Business/ Management and Economics	67 (34.5)	31 (16.0)	43 (22.2)	53 (27.3)	194 (100)	194 (52.3)
Computer and Information Services	7 (8.1)	52 (60.5)	10 (11.6)	17 (19.8)	86 (100)	86 (23.2)
Arts/Humanities and Social Sciences	4 (22.2)	1 (5.6)	9 (50)	4 (22.2)	18 (100)	18 (4.9)
Education	2 (8)	1 (4)	20 (80)	2 (8)	25 (100)	25 (6.7)
Other	8 (16.7)	10 (20.8)	17 (35.4)	13 (27.1)	48 (100)	48 (12.9)

*The percentages are in parenthesis

In the field of Business Management and Economics, 34.5% of students enrolled in this field of study are students from China while students from Thailand and Indonesia represent 27.3% and 22.2% respectively of the sample. The representation of Indian students in this category (16%) is comparatively small. This is however compensated by the representation of Indian students in the field of Computer and Information Services with a 60.5% share of all students enrolled in this field of study. With 52 students enrolled in this field of study, it represents 54.7% of the total Indian student sample. Education (6.7%) and Arts, Humanities and Social Sciences (4.9%) are the other two disciplines that are popular in the sample. The significant feature is that Indonesian students account for 80% and 50% respectively of the students who follow these studies. It is clear that each student group appears to have distinctive preference for a particular field of study.

5.2.3.5. Degree program

Nearly 79% of the students in the sample are pursuing Masters' degrees and course work (75.7%) is the preferred mode of study..

Table 5.6: Degree Program

Type of Degree/Country	China	India	Indonesia	Thailand	Total Distrib.	Distrib. by Degree
Graduate Diploma	2 (5)	16 (40)	11 (27.5)	11 (27.5)	40 (100)	40 (10.8)
Masters by Course work	72 (25.6)	73 (26)	74 (26.3)	62 (22.1)	281 (100)	281 (75.7)
Masters by research	1 (9.1)	2 (18.2)	7 (63.6)	1 (9.1)	11 (100)	11 (3)
Professional Doctorate	0 (0)	0 (0)	0 (0)	7 (100)	7 (100)	7 (1.9)
PhD	13 (40.6)	4 (12.5)	7 (21.9)	8 (25)	32 (100)	32 (8.6)

*The percentages are in parenthesis

As shown in table 5.6, all student groups are equally represented in this program indicating that the results of the study will have a stronger influence from Masters' students in the sample. A greater percentage of students from Thailand (16.9%), and China (14.8%) are in the doctoral programs (Professional doctorate and PhD). Only 4.2% of the Indian students in the sample are enrolled in the doctoral programs. A notable feature is the low participation of students in the Professional Doctorate programs. Given that it is a relatively new program in universities, the lack of awareness of the program may have had an impact on the participation level of the students in the sample.

5.2.3.6.   Course level (semesters completed)

As shown in table 5.7, most of the students in the sample (86%) are spending no more than six semesters or two years in their respective universities. This is consistent with the participation of the majority of students in two-year Masters degree programs, as discussed in the section 5.2.3.5. Fifty-one percent of students are in their first two semesters of the first year, and the balance in the other semesters, providing a fair distribution of students between entry point and the other periods in relation to the level of award in which students are enrolled. Eighteen percent of the sample is new postgraduate students in their first semester of university.

The distribution of the sample by course level is of significance to the present study in terms of obtaining a realistic measure of student expectations and perceptions of performance of the university as a study destination. The student input (as respondents) from different stages of the study program provides a balanced response. As discussed in section 4.5.2.2, the presence of newly arrived students in the sample would also ensure measurement of student expectations prior to any potential 'contamination effect' of their expectations through experience.

Table 5.7: Course level (semesters completed)

Stage of the course/Country	China	India	Indonesia	Thailand	Total Distrib.	Distrib. by Course Level
Year 1 Semester 1	15 (22.7)	8 (12.1)	22 (33.3)	21 (31.8)	66 (100)	66 (17.8)
Year 1 Semester 2	16 (12.9)	48 (38.7)	29 (23.4)	31 (25.0)	124 (100)	124 (33.4)
Year 1 Semester 3	11 (24.4)	13 (28.9)	16 (35.6)	5 (11.1)	45 (100)	45 (12.1)
Year 2 Semester 1	2 (3.8)	16 (30.2)	20 (37.7)	15 (28.3)	53 (100)	53 (14.3)
Year 2 Semester 2	3 (14.3)	5 (23.8)	7 (33.3)	6 (28.6)	21 (100)	21 (5.7)
Year 2 Semester 3	4 (40.0)	1 (10.0)	2 (20.0)	3 (30.0)	10 (100)	10 (2.7)
Year 3 Semester 1	4 (36.4)	0 (0)	2 (18.2)	5 (45.5)	11 (100)	11 (3)
Year 3 Semester 2	26 (100)	0 (0)	0 (0)	0 (0)	26 (100)	26 (7)
Year 3 Semester 3	1 (100)	0 (0)	0 (0)	0 (0)	1 (100)	1 (0.3)
Year 4 Semester 1	2 (50)	1 (25)	0 (0)	1 (25)	4 (100)	4 (1.1)
Year 4 Semester 2	4 (80)	0 (0)	1 (20)	0 (0)	5 (100)	5 (1.3)
Year 4 Semester 3	0 (0)	0 (0)	0 (0)	1 (100)	1 (100)	1 (0.3)
Year 5 Semester 1	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Year 5 Semester 2	0 (0)	0 (0)	0 (0)	1 (100)	1 (100)	1 (0.3)
Year 5 Semester 3	0 (0)	3 (100)	0 (0)	0 (0)	3 (100)	3 (0.8)

*The percentages are in parenthesis

5.2.3.7.   Source of funding

Table 5.8 shows that nearly 74% of the students in the sample finance their studies through their own resources (either self financed or financed by their families), while 19% are scholarship holders. The remaining 7% of the sample of students are sponsored by employers.

Self-financing of studies is more common with students from India and Thailand. For example, nearly 93% of students from India are self-financed, and only 7% of the students are studying on scholarships. Similarly, 82% of Thai students are self financed mainly through their families and around 18% are scholarship holders. In comparison, 61% of students from China are self-financed, 17% are financed by scholarship, and another 20.5% are financed by employer sponsorship. In the self-financing category, students from China appear to be less reliant on family support compared to students from India, Thailand, and Indonesia. The majority of students from Indonesia finance their studies through scholarship and employer sponsorship.

Table 5.8: Source of funding

Type of funding/ Country	China	India	Indonesia	Thailand	Total Distrib.	Distrib. by Source of funding
Self Funded	32 (46.4)	13 (18.8)	9 (13.0)	15 (21.7)	69 (100)	69 (18.6)
Family	8 (8.2)	36 (36.7)	22 (22.4)	32 (32.7)	98 (100)	98 (26.4)
Family/Self	14 (13.3)	39 (37.1)	26 (24.8)	26 (24.8)	105 (100)	105 (28.3)
Scholarship	15 (21.1)	7 (9.9)	33 (46.5)	16 (22.5)	71 (100)	71 (19.1)
Employer	18 (66.7)	0 (0)	9 (33.3)	0 (0)	27 (100)	27 (7.3)
Other	1 (100)	0 (0)	0 (0)	0 (0)	1 (100)	1 (0.3)

*The percentages are in parenthesis

The above respondent profile indicates that the sample chosen for the study possesses both uniform and diverse characteristics, making it adequately representative of the total student population from these countries.

The following sections of the chapter will discuss the quantitative techniques and the processes used to analyse the data.

5.3. Factor analysis

The factor analysis resulted in four factors with 28 variables from the original 36 variables, which loaded heavily (loading >0.5 on them). Tables 5.9 to 5.12 show the factors identified as critical to student satisfaction and respective loadings. The higher loadings signalled the correlation of the variables with the factors on which they loaded. It also indicated that the variance of the original values was well captured by the four factors. The four factors comprised of 9, 8, 6 and 5 variables respectively, which satisfy the requirement of a minimum of 3 variables for a factor (Kim and Mueller, 1978). The factors were extracted using the Principal Component Analysis and Varimax rotation method with Kaiser normalization. The rotation converged in seven iterations.

5.3.1. Description of factors

The four-factor structure resulted in a meaningful and workable number of composite dimensions, which could be interpreted and used for regression analysis. The four-dimension solution resulted in the following factor labels: *education standards and facilities (UNISAT1)*, information *and guidance (UNISTA2)*, *customer value and study outcomes (UNISAT3)*, and *image, prestige and recognition (UNISAT4)*.

The first factor, *UNISAT1* comprises nine variables with significant loadings on this dimension. Table 5.9 lists the variables and the factor loadings. This factor addresses the issues of both tangible and intangible qualities of university education in terms of academic quality, and the availability of resources.

Table 5.9: Factor 1 – Variables and Loadings (UNISAT1)

Variables	Loadings
Modern library facilities.	0.803
Good operating hours of library access.	0.791
Modern computer facilities.	0.775
Good access to computer labs.	0.751
High standard of teaching with quality lecturers.	0.653
Provides valuable feedback from lecturers.	0.622
Good access to lecturers.	0.600
High standard of lecture material.	0.591
Manageable class sizes.	0.531

The second factor, *UNISAT2* consists of eight intangible variables as shown in table 5.10.

Table 5.10: Factor 2 – Variables and Loadings (UNISAT2)

Variables	Loadings
International orientation programs	0.802
Social activities	0.793
Counseling services	0.769
Information available compared to other Universities	0.634
Information available through the Internet	0.632
Complaints process for services and facilities	0.578
Overseas consultants for information and guidance	0.540

This factor incorporates the issues relating to student support services, provision of information and other guidance that would enrich students' experiences at the university. The loadings on this dimension were significant ranging from 0.540 to 0.802.

The third factor, *UNISAT3* contains six variables, which incorporate several intangible features of the services expected from universities. The factor reflects issues of the

value gained in investing on a university course in relation to the study outcomes expected by the students. The appropriateness of the course and its completion time is of significant importance to students who consider studying overseas as an investment with financial and social returns. The variables and their loadings are given in Table 5.11.

Table 5.11: Factor 3 – Variables and Loadings (UNISAT3)

Variables	Loadings
Competitive fees.	0.776
Flexible timetables.	0.681
Fees that offer good value for money	0.644
Recognition of prior learning.	0.579
Academic courses relevant to future job prospects.	0.518
Completion of academic courses suited to own needs.	0.501

The fourth factor, *UNISAT4* consists of five intangible variables related to the image, prestige and recognition of the university, and the recognition and appropriateness of the courses, which provide credibility to the studies pursued by the students and a positive influence on their future career outcomes. The variables are shown in Table 5.12 with the loadings on this dimension, which range between 0.591 and 0.833.

Table 5.12: Factor 4 – Variables and Loadings (UNISAT4)

Variables	Loadings
High image and prestige Internationally.	0.833
High image and prestige within Australia.	0.828
High image and prestige within own country.	0.822
Academic courses recognised in own country.	0.604
Academic courses appropriate to own needs.	0.591

The above factors serve as sources of post-choice satisfaction determined by student perceptions of the performance of the universities in relation to the pre-choice

expectations. These factors will be analysed to ascertain their importance in satisfaction formation.

5.3.2. Criteria for determining the number of factors

The factors were identified using the Kaiser-Meyer-Olkin (KMO), the scree plot and the variance explained (Dunteman, 1989). All variables were tested for inter-item reliability and consistency of the questionnaire using Cronbach alpha. The overall significance of the correlation matrix was significant with a p-value of < 0.01, and a Bartlett Test of Sphericity value of 7632.2, which indicated that the data matrix had sufficient correlation to conduct factor analysis. The overall Kaiser-Meyer-Olkin (KMO) measure of sample adequacy had a highly acceptable value of 0.948 (Hair *et al*, 1995).

The second criterion used to determine the number of factors was the 'scree plot' results as shown in Figure 5.2.

Figure 5.2: Scree Plot of the results

Scree Plot

Component Number
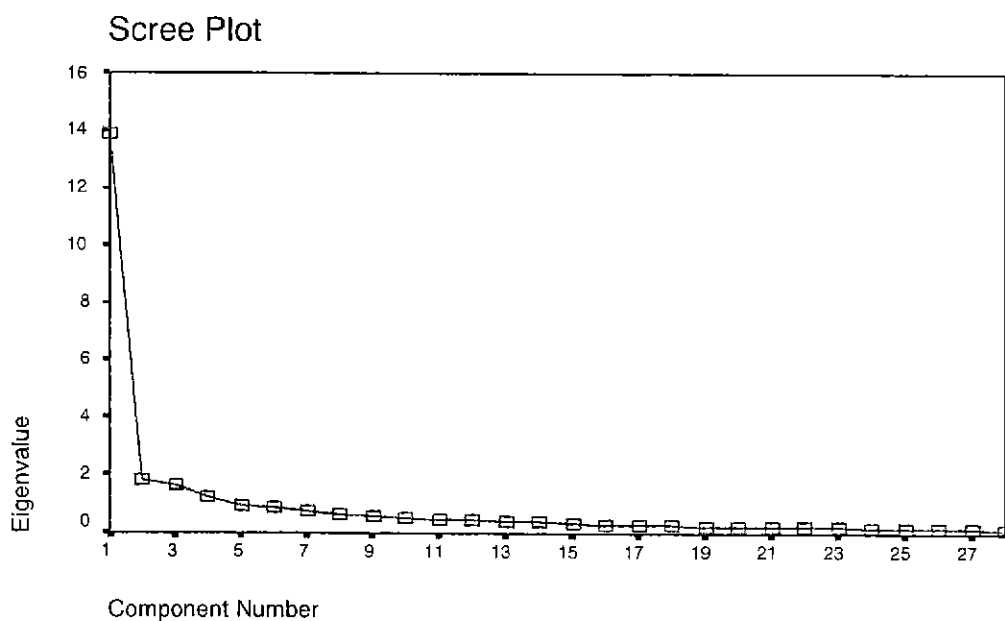
The selection was based on eigenvalues above 1, and the total variance explained by these values. All four factors identified had a minimum eigenvalue of 1, and the

142

values of the selected factors ranged from 1.258 to 13.891 accounting for 66.5% of the total variance explained as shown in Table 5.6. Further examination of the initial statistics reveals that the first factor, *UNISAT1* is predominant with an eigenvalue of 13.9, followed by the other factors with eigenvalues ranging from 1.8 to 1.2. Based on these results, it can be surmised that the factor UNISAT 1: *'education standards and facilities'* is the most significant component influencing CS/D of international postgraduate students from China, India, Indonesia and Thailand. This factor accounted for 49.6% of the total variance explained by all factors, further validating its strength. These results will be further tested in subsequent regression analysis.

The third criterion was the factor loadings, which indicated the high correlation of variables with the respective factors.

5.3.3. Reliability analysis

The internal consistency of each of the four factor indicators was measured using the Cronbach's alpha. The results presented in Table 5.13 indicate that all four factors produced very high alpha coefficients, ranging from 0.87 to 0.94. These alpha values exceeded the recommended level of 0.50 by Hair *et al* (1995) and confirmed the reliability of the four underlying factors.

Table. 5.13: Eigenvalues, Variance of factors and Reliability alpha

| Factors | Eigenvalues | % of Variance | | Reliability alpha |
		Individual %	Cumulative %	
UNISAT1: Education Standards and Facilities	13.891	49.610	49.610	0.9387
UNISAT2: Information and, Guidance	1.808	6.458	56.067	0.9045
UNISAT3: Customer Value, and Study outcomes	1.671	5.968	62.036	0.8729
UNISAT4: Image/Prestige, and Recognition	1.258	4.492	66.527	0.8995

The above results show a significant correlation between variables appropriate for factor analysis. The assumptions underlying factor analysis have not been violated given the large sample size (371), high linearity and the deletion of outliers during the analytical process. The factors provide insights into different dimensions of the data, which are further analysed with the use of regression and multivariate techniques, discussed later in the present chapter.

5.4. Satisfaction Scores

The satisfaction scores reflect the level of satisfaction as perceived by the students on the quality of service delivered by the respective universities. This is based on the performance of the delivery of each of the services described by the 28 variables included in the analysis.

The three categories of the aggregated satisfaction scores (the average of the difference score, arithmetic average of the ratio score, and the geometric average of the ratio score) are given in appendix 7. The computation of the scores was discussed in section 4.14.3. These scores are used in the CS/D analysis and the testing of the relevant hypotheses.

5.5. Hypotheses testing

Several analytical techniques were employed to test the hypotheses outlined in section 3.7. These included the ANOVA tests, Means analysis, General Linear modeling, and Logistic regression. In addition, the findings of the focus group and depth interviews, and the analysis of the qualitative responses of students on overall satisfaction (as answers to Q.102, A and B of the survey instrument), were used to support the quantitative results.

5.5.1. First hypothesis

The testing of the first hypothesis *H1: There are differences in the rating of variables that influence CS/D by student groups*, is conducted by the comparison of marginal

means. The test is used to ascertain whether or not the CS/D levels are equal among student groups.

The examination of the marginal mean scores (at 95% confidence level), for each variable in the four constructs as presented in tables 5.14, 5.15, 5.16, and 5.17 found significant differences in the student ratings of expectations (E) and perceptions (P). The student groups are identified in the tables as China (1), India (2), Indonesia (3) and Thailand (4). The key feature was that the scores indicated very high expectations among student groups on all variables and their expectations were higher than the perceived perceptions performance of universities.

The highest average rating on expectations (6.2) was recorded for the factor 1 construct, *education standards and facilities (UNISAT1)*, followed by factor 2 and 3 constructs: *customer value and study outcomes (UNISAT3)*, and *image and recognition (UNISAT4)* with ratings of 6.0 each. In comparison, the factor 2 construct: *information and guidance (UNISAT2)* recorded a lower average rating of 5.8, but with a relatively high expectation level. The average ratings on perception showed a wider disparity among students with the highest ratings (5.1) being recorded for the factor 4 construct: *UNISAT4*, followed by ratings of 5.0 for factor 1 construct: *UNISAT1*, 4.9 for factor 3 construct: *UNISAT3*, and 4.6 for factor 2 construct: *UNISAT2*.

Table 5.14: UNISAT1 - Estimated marginal Means

Variables/Country	China		India		Indonesia		Thailand	
	E	P	E	P	E	P	E	P
- Modern library facilities	6.3	5.6	6.7	5.3	6.5	5.6	6.5	4.6
- Good hours of library access.	5.8	5.4	6.6	5.4	6.5	5.6	6.3	4.8
- Modern computer facilities.	6.1	5.5	6.7	4.5	6.5	4.9	6.5	4.1
- Good access to computer labs.	6.1	5.3	6.8	4.3	6.5	5.1	6.4	4.2
- High standard of teaching	6.0	5.1	6.8	4.8	6.5	5.4	6.5	5.1
- Feedback from lecturers.	5.5	5.0	6.7	5.0	6.5	5.6	6.3	5.1
- Good access to lecturers.	5.7	5.1	6.7	4.8	6.5	5.4	6.3	5.1
- High standard of lecture material.	5.7	5.2	6.7	4.7	6.4	5.5	6.4	4.9
- Manageable class sizes.	5.3	4.8	6.5	4.7	6.4	5.1	6.2	4.8
Total	5.8	5.2	6.6	4.8	6.4	5.3	6.3	4.7
Sample (n)	85		95		99		89	

E = Expectations, P = Perceptions. Confidence level = 95%

Table 5.15: UNISAT2 - Estimated marginal Means

Variables/Country	China E	China P	India E	India P	Indonesia E	Indonesia P	Thailand E	Thailand P
- International orientation programs.	5.3	5.2	6.5	5.0	5.9	5.4	5.8	5.1
- Social activities	5.1	4.8	6.4	4.5	5.7	5.1	5.8	4.9
- Counselling services	5.1	4.7	6.5	4.7	6.0	5.3	5.8	4.8
- Information available compared to other universities	5.4	4.9	6.3	5.0	5.8	5.3	5.9	4.9
- Information available through the Internet	5.7	4.4	6.5	5.1	6.0	5.4	6.1	4.8
- Complaints process	5.3	5.2	6.6	3.9	6.1	4.4	6.0	3.9
- Guidance from Overseas Consultants	4.7	4.2	6.1	3.9	5.8	4.5	5.6	4.1
- Guidance from Australian Diplomatic Missions	4.9	4.5	6.3	4.1	6.0	4.4	5.8	4.3
Total	5.2	4.7	6.4	4.5	5.9	4.9	5.8	4.6
Sample (n)	85		95		99		89	

E = Expectations, P = Perceptions. Confidence level = 95%

Table 5.16: UNISAT3 - Estimated marginal Means

Variables/Country	China E	China P	India E	India P	Indonesia E	Indonesia P	Thailand E	Thailand P
-Competitive fees	5.2	4.6	6.3	4.9	5.9	4.8	6.0	4.5
-Flexible timetables	5.3	5.0	6.3	4.9	5.9	5.2	5.9	4.6
-Good value for money	5.6	4.7	6.7	4.8	6.0	4.9	6.2	4.5
-Recognition of prior learning	5.4	5.0	6.5	5.1	6.0	5.0	5.9	4.5
-Relevance of courses	5.9	5.1	6.9	5.5	6.5	5.6	6.3	5.2
-Course completion time	5.4	5.2	6.7	5.6	6.3	5.7	6.3	5.4
Total	5.4	4.9	6.5	5.1	6.1	5.2	6.1	4.7
Sample (n)	85		95		99		89	

E = Expectations, P = Perceptions. Confidence level = 95%

An interesting finding in relation to the differences in the average ratings for expectations and perceptions across groups was that the students from India recorded the highest ratings for expectation averaging 6.5 followed by students from Indonesia with 6.1,Thailand with 6.0 and China with 5.5 ratings. The perception ratings also showed differences among student groups. Indian and Thai students recorded the lowest average ratings of 4.8 and 4.7 respectively, while Indonesian and Chinese students reported ratings of 5.2 and 5.5 respectively.

Table 5.17: UNISAT4 - Estimated marginal Means

Variables/Country	China		India		Indonesia		Thailand	
	E	**P**	**E**	**P**	**E**	**P**	**E**	**P**
- International image and recognition	5.5	5.0	6.6	4.1	6.1	5.0	5.8	4.7
-Australian image and recognition	5.7	5.4	6.7	4.8	6.1	5.6	5.8	4.9
- Image and recognition within own country	5.4	4.9	6.7	4.8	6.2	5.5	5.8	5.0
- Recognition of courses in own country	5.4	5.4	6.6	5.5	6.4	5.6	6.1	5.3
- Appropriateness of courses to own needs	6.0	5.6	6.7	5.5	6.5	5.7	6.3	5.4
Total	**5.6**	**5.2**	**6.6**	**4.9**	**6.2**	**5.4**	**5.9**	**5.0**
Sample (n)	**85**		**95**		**99**		**89**	

E = Expectations, P = Perceptions. Confidence level = 95%

The results indicate that Indian students have the highest expectations and lowest perceptions, followed by Thai and Indonesian students. Comparatively, Chinese students have relatively lower ratings for expectations and higher ratings for perceptions, resulting in a lower gap between expectations and perceptions.

The analysis of this gap suggests that Indian students are the most dissatisfied among all student groups followed by Thai, Indonesian and Chinese students. With very high ratings for expectations, Indian students seem to be the most difficult to satisfy, and in comparison, Chinese students are the easiest to satisfy. The reasons for such differences could be explained by drawing on past empirical research conducted on the impact of the cultural, social-economic, and demographic characteristics of the consumer groups on their behaviour and satisfaction.

As discussed in section 2.6, Yau (1994) found that Chinese, given their unique cultural values, have low expectations of the products they purchase and tend to be less dissatisfied even when the performance of the product does not meet prior expectations. Moreover, in view of their deep respect for the past and the belief on the continuity of interrelations with others tend to make them extremely brand loyal. As a result Chinese rarely switch brands or products unless the performance of the product or brand is exceedingly substandard. Yau (1994) also confirms that although cultural

values undergo some modifications as a result of new environmental changes, the behaviour of Chinese, both young and old, continue to be heavily influenced by core cultural values based on Confucian principles.

Hofstede's cultural analysis also sheds some light in explaining the differences in the expectation and satisfaction levels of students. Although Hofstede (1991) identifies China, India, Indonesia and Thailand as collectivist cultures with a significant power distance and with considerable uncertainty avoidance behaviours, his analysis shows that there are differences among these cultures at a micro level. For example, in plotting cultures on the scale of individualism versus power distance, he identifies Indian culture as one with significant power distance behaviours, but with more individualistic character compared to other cultures in the study. Moreover, on the scale of uncertainty avoidance versus masculinity/femininity, India is positioned as a culture with weak uncertainty avoidance and a masculine character. In comparison, China, Indonesia and Thailand are categorised as cultures with strong uncertainty avoidance and a feminine character. In this respect, students from India appear to embrace a more aggressive and risk taking behavioural style than the other students groups. High expectations and low perceptions of the performance of universities as study destinations among Indian students indicates a more discerning decision making style in the satisfaction formation process and may be justified on the basis of the above cultural differences.

The differences in the socio-economic and demographic characteristics of the students are evident in their choice of university, financing of studies, and age as revealed in the responses to the survey. The majority of Indian students did not consider an Australian university as their first choice, 92% of them financed their studies through private funds (either self, family or both) as opposed to being financed by a scholarship or by an employer sponsorship. Indian students have had a relatively longer-term exposure to university education in their own country, and some of the Indian respondents achieved multiple degrees prior to their arrival in Australia. Besides Indian students, a high percentage (78%) of students from Thailand financed their studies from private sources, with a relatively small percentage (22%) on scholarships.

In relation to the choice of the university, one Indian student clarified his position by admitting: *"I chose the Australian university as I could not go to USA, because their entry requirements are tough. We don't have to sit the GMAT test to enter an Australian university like in the case of a university in the USA"*. A depth interview with a Thai student revealed a similar position where it was claimed that *"I wanted to go to the UK, but my mother who was educated in Australia wanted me to study in Australia and my aunt who is a professor also persuaded me to come to Australia"*.

All of these factors seem to have influenced students from India to be more demanding, which is reflected in their high expectations of the universities. To some extent, students from Thailand demonstrated similar characteristics.

The demographic characteristics of the Indian students would have also had an impact on their expectations and level of satisfaction. As discussed in section 5.2.3.2 earlier, Indian students are the youngest in the sample, and account for 52.7% of the 21-24 year age category and 34% of the age category under 30 years. In an analysis of the socio-economic and demographic characteristics of consumers, Barksdale and Darden (1972), in their study on consumer attitudes, found that the dissatisfied consumers were younger and more liberal than satisfied customers. Wall *et al* (1978), Hughes (1977), and Miller (1970) also found that younger consumers had higher than average expectations, and displayed greater dissatisfaction than older customers.

It is clear therefore that the differences in the cultural, socio-economic and the demographic characteristics students may have had an impact on their expectations and perceptions of university as a study destination and perceived experiences of satisfaction outcomes. This is confirmed by the frequency analysis of the overall satisfaction among student groups, which indicates that the total number of satisfied students vary between the student groups. Table 5.18 shows the percentage distribution of the number of satisfied and dissatisfied students classified under the three satisfaction scores. Indian students account for the lowest number of satisfied students with an average of only 9% of the total, followed by students from Thailand (15%), Indonesia (21%), and China (50%)

Table 5.18: Satisfaction of student groups

Student groups and Number	% Satisfied			% Dissatisfied		
	DSU	RASU	RGSU	DSU	RASU	RGSU
Chinese (n=98)	45.5	54.5	50	54.5	45.5	50
Indian (n=95)	4.2	9.5	8.4	95.8	90.5	91.6
Indonesian (n=99)	18.2	24.2	20.2	81.8	75.8	79.8
Thai (n=89)	13.5	15.7	14.6	86.5	84.3	85.4

DSU=Average Difference score, RASU=Arithmetic average of the ratio score, RGSU=Geometric average of ratio score

In summary, although the student groups shared the common characteristic of having higher ratings on expectations than on perceptions, ratings between the groups differed significantly with vastly different effects on satisfaction. These results support the hypothesis that there are differences in the ratings given to variables) that influence CS/D and the null hypothesis that variances across groups are equal is therefore rejected.

5.5.2. Second hypothesis

The second hypothesis, *H2: There are differences in the importance of the factors relating to CS/D by student groups,* was tested with logistic regression of the factor scores with satisfaction scores and then cross tabulated against factor scores to ascertain the importance of the factors in explaining satisfaction. The relevant statements extracted from a cross tabulation of student comments in response to Q102: A and B of the survey instrument, (for example. *'...the most satisfying/disappointing experience I have had was'*) will also be used to support the above tests. These students' comments reflect their attitude towards the services and facilities of the university.

The results of the logistic regression analysis with factor scores and the satisfaction scores are given by the following equations:

1. **Difference score (S_{DSU})**

   $$S_{DSU} = 1.7887 + 0.5687 UNISAT1^{***} + 0.2228 UNISAT2 +$$
   $$0.8002 UNISAT3^{***} + 0.5214 UNISAT4^{***}$$

2. **Arithmetic average of the ratio score (S_{RASU})**

$$S_{RASU} = 1.4141 + 0.6242UNISAT1*** + 0.3556UNISAT2** + 0.8769UNISAT3*** + 0.5757UNISAT4***$$

3. **Geometric average of the ratio score (S_{RGSU})**

$$S_{RGSU} = 1.6818 + 0.7034UNISAT1*** + 0.2270UNISAT2 + 1.0554UNISAT3*** + 0.5794UNISAT4***$$

(** Denotes significance at <0.05, and *** significance at <0.01)

The above equations can be used to predict the probability of students being satisfied or not, for a given set of factor scores. From a university policy-making perspective, these equations provide useful insights into the significance of the factors and their relative importance in explaining satisfaction, at an aggregate level. Universities are able to prioritise action on the most important factors to address student concerns in managing CS/D with appropriate strategic initiatives. Moreover, the presence of results from three different measurements of student satisfaction provides universities with a strong base for analysing potential policy options towards improving satisfaction levels of the student body. How universities can use these results to achieve better outcomes in the satisfaction formation process will be outlined in the ensuing discussion. The major marketing implications of the results are discussed in chapter 6.

A chi-square test of the logistic regression shows that three factors: UNISAT1, UNISAT3 and UNISAT4 are all significant at a p-value of < 0.01, and therefore positively related to satisfaction. The first factor (UNISAT1) is related to facilities supporting academic performance of students (*library and computer facilities, quality of lecturers, and teaching standards*), the second factor (UNISAT3) to services and facilities that enhance customer value (*university fees, recognition of prior learning, completion times, and relevance of courses to future job prospects*), and the third factor (UNISAT4) relates to recognition of the academic qualifications (*the image of the university attended, recognition of the courses in their own country*). The second factor (UNISAT2), which is related to services contributing to information and

guidance towards early settlement and better social life in the university, was not as significant as the other three factors. It was significant at a p-value of <0.05, only in relation to one measurement criterion (arithmetic average of the ratio score).

5.5.2.1. Variables related to UNISAT1

As shown in table 5.14, within variables related to *education standards and facilities* in factor 1 (UNISAT1), *computer/library facilities*, and *teaching standards* rank high among all other variables in the factor. With an overall average rating of 6.2 and 5.0 on expectations and perceptions respectively, UNISAT1 emerges as a factor with a stronger impact on student satisfaction. The average gap score for the factor is -1.275. Among all variables, *access to computer labs* and *modern computer facilities* record the highest negative gap between perceptions and expectations of 1.725 and 1.7 respectively, indicating these two variables have the biggest impact on student dissatisfaction. The *standard of teaching, class sizes* and *modern library facilities* also record above average negative gaps between perceptions and expectations of 1.35, 1.25, and 1.225 respectively. These findings compare well with the student comments during focus group discussions, depth interviews, and the qualitative response received through the survey instrument.

When asked to comment on the *"most satisfying and disappointing experiences in regard to the university"*, students' focus largely on variables related to academic activities confirming the importance placed on the construct: *education standard and facilities*. Some of the relevant comments made by students are outlined in table 5.19.

The most positive comments relate to the teaching staff and the standards of teaching and support. The negative comments from students are associated with poor quality delivery of lectures, lack of contact hours, quality of visiting academic staff, lack of understanding of Asian culture, racism, and support available for industry experience. All students share a common position in regard to racism among lecturers.

Given that these comments are based on individual experiences of students whose satisfaction levels have been influenced by these encounters, caution needs to be taken in generalising the views as those of the total population. Nevertheless, these views would serve as important signals to universities of both the positive and

negative views shared by students, which could potentially become factors contributing to student CS/D. Universities, therefore, need to consider student feedback as valuable input to their strategic initiatives in order to improve customer satisfaction among the student population.

Table 5.19: Student comments – Teaching standards and staff

Positive	Negative
"75% of my lecturers are very open, friendly and highly dedicated" **(Chinese student)**	*"Boring lecturers and not enough depth in lecture material"* **(Indonesian student).**
"Some lecturers are really excellent" **(Chinese student)**	*"Student consulting time is limited"* **(Chinese student)**
"Good access to academic staff and their ability to understand issues" **(Indian student)**	*"Visiting lecturers, (especially the practitioners) do not pay much attention to students"* **(Indonesian student)**
"All of the lecturers are very helpful, they are easy to access" **(Indonesian student)**	
"Competent lecturers using new methods of learning" **(Indonesian student)**	*"Some lecturers cannot understand my culture"* **(Indonesian student)**
"Good lecturers who are supportive" **(Indian student)**	*"Some lecturers seem to underestimate international students from developing countries"* **(Indonesian student)**
"Lecturers are very nice and helpful" **(Thai student)**	
"Professional approach to teaching" **(Indonesian student)**	*"Racism among lecturers"* **(Chinese, Indian, Indonesian and Thai students)**
"Supportive lecturers" **(Thai student)**	
"Good study course and structure with relevant industry oriented information" **(Indian student)**	*"No industry experience to support studies"* **(Indian student)**

An important theme running across these comments is the perceived role of academic staff as providers of student support besides teaching. It would appear that the guidance and support expected from the teaching staff are not necessarily confined to academic activities. The teaching staff appears to be their first point of contact (other than the contacts with student administration for a brief period during enrolment) and

with longer contact hours per student than any other member of the university staff. This results in the development of a strong student-teacher relationship, which could be harnessed for mutual advantage of universities and students. The students' comments indicate that the student-teacher relationship has a positive effect on their satisfaction, and it is therefore important that universities encourage and promote such bonds.

As shown in table 5.20, the overall qualitative response from students on computer and library facilities is negative, and this is more marked in the case of computer facilities, as evidenced from the average marginal means of student perceptions ratings presented in table 5.9.

Table 5.20: Student comments - Computer and Library facilities

"The computer facility is poorly resourced. Number of computers in the lab is inadequate. Students face difficulties during assignment submission period" **(Indian Student)**
"Computer facilities are not enough" **(Indonesian student)**
"Shortage of computers in the lab and books in the library" **(Indian student)**
"Bad library. Has less books for postgraduate students" **(Thai student)**
"Not enough books in the city library and not enough class rooms for self study" **(Chinese student)**
"Books in the library are too old and inadequate" **(Chinese student)**

The inadequacy of computer equipment in computer laboratories and books in libraries is a major concern of students who maintain that these resources have not been increased with the growth of student population. The impact of these support facilities on satisfaction is high, given that students consider these facilities to be extremely important to their study outcomes.

The above comments are an indication of the challenges faced by universities in terms of the need to upgrade facilities with the growth in numbers of international students in the respective campuses.

5.5.2.2. Variables related to UNISAT3

The students are also conscious about the service features that provide superior customer value and study outcomes. As in UNISAT1, the importance of the construct UNISAT3 is demonstrated by the relatively high expectation mean of 6.0 and lower perception mean of 4.9, at an aggregated level. The average gap between perceptions and expectations is -1.05, as shown in table 5.16. Among the variables, good value for money, fees, relevance of courses, and prior recognition of learning appear to have a greater impact on CS/D, recording negative gaps between perceptions and expectations of 1.4, 1.15, 1.05, and 1.05 respectively.

The student's qualitative response is a mixture of both positive and negative comments on *good value for money, fees, time of completion and the course content,* as shown in table 5.21. Certain comments from students of the same country are contradictory to each other, reflecting the circumstances and experiences of students in different universities.

Table 5.21: Student comments - Customer value and Study outcomes

Positive	Negative
"Good course content" **(Thai student)**	"University emphasise on certain subjects, which are not relevant to my country" **(Indian student)**
"Fee exemption scholarship" **(Thai student)**	"Everything in the university is regarded on the basis of money. We have to pay for everything" **(Indonesian student)**
"Freedom and flexibility to select course subjects" **(Indian student)**	"University has no scheme for payment of fees by instalment" **(Thai student)**
"University provides good value for money" **(Indian student)**	"No money, no study" **(Thai student)**
"University allows payment of fees by instalment" **(Indian student)**	"The course I followed is not worth the fee" **(Indian student)**
"Open class and free to express my opinion" **(Chinese student)**	"University did not advise me what service fees are charged every semester" **(Indonesian student)**
	"University should offer more scholarship to international students" **(Indian student)**

For example two Indian students commenting on the choice of subjects in a course present opposite views, one feeling happy with the freedom to choose subjects in a course and the other complaining about the lack of choice and the pressure from the university to select subjects from a nominated list. The contradictory comments on an identical issue from students of the same country of origin indicate that there are variances in the delivery of services among universities, which in turn would explain differences in the satisfaction levels between student groups and the universities.

The positive comments, on the services and facilities relating to customer value and study outcomes are focused on the course content, while the negative comments are directed on the fees and the relevance of subjects in a course. With regard to the course content, students appear to be satisfied with the wide selection of subjects in a course but are unhappy with the lack of flexibility to select subjects of relevance to their home countries, and their career prospects. Another major concern is with the process associated with the payment of fees. The payment of fees in instalments appear to be the practice in some universities as demonstrated by the positive comments from students in those institutions and negative comments from students who do not have such an option in their institutions. The facility of paying university fees in instalments seems to have an impact on CS/D among the student population. The qualitative comments on fees also indicate that there appears to be some confusion and some degree of ill feeling in relation to the process of fee collection.

The comments such as *"everything in the university is regarded on the basis of money. We have to pay for everything"*, and *"university did not advise me what service fees are charged every semester"* support this contention. The high cost of education is of great concern to all full fee paying international students.

The clarity of university process with regard to fees is therefore essential to maintain goodwill and trust among students and to protect the image of the universities. Given the low proficiency in the English language among most of the postgraduate international students, and their diverse cultural backgrounds, the universities will need to exercise great caution in developing and implementing both verbal and written communication strategies, to avoid build up of ill will among students. A

senior postgraduate student, who participated in a depth interview related to this study, commented that some members of staff in universities are very apathetic in dealing with student queries on fee payments even to the extent of saying *"the university can change its fees anytime it wants, and you need to pay them"* (quote from an Indian student).

5.5.2.3.   Variables related to UNISAT4.

The international image and prestige of the university and its recognition in the home country are the two most dominant explanatory variables in the construct *'prestige, image and recognition'*, that had a significant impact on student satisfaction with a large variance between student expectations and perceptions of the university. As shown in table 5.17, both variables record relatively large negative gap scores, and hence negative influence on satisfaction, of 1.3 and 0.975 respectively. Another variable that seems to be strongly related to student satisfaction is the appropriateness of the courses offered by universities to meet career needs, with a negative gap score of 0.9. The direct influence of these variables on future employment outcomes seems to be the underlying reason for the students to recognise these variables as important, of which the image and recognition of the university appear to take pride of place.

The analysis of the qualitative responses of students related to this construct indicate a strong interest shown by students with regard to *'Australian industry work experience'* to be part of their postgraduate study outcomes. The students' comments, as outlined in table 5.22, emphasise the need for such industry experience as it is directly related to their career outcomes, and demonstrate their anxiety and disappointment at the failure of universities to provide such opportunities during and after their study period.

The comments serve as valuable inputs to university strategic planning and curricula development to make postgraduate courses more focussed on students' needs, and attractive to prospective students. From a marketing perspective, it will be an opportunity for universities to develop a point of difference in their course offerings, and a competitive advantage.

Table 5.22: Student comments - industry work experience

> "The university should assist us in gaining temporary employment after the completion of the course for suitable work experience" **(Indian and a Chinese student)**
>
> "Work experience in Australia in the field of study we are qualified is very important for us when we get back to our country. The immigration department wants us to leave soon after we complete our studies" **(Indian student)**
>
> "We should be allowed to extend our visas to acquire appropriate work experience and universities must help". **(Indonesian student)**

In comparison to the three constructs discussed above, the results of the logistic regression of factor scores indicate that the statistical significance of the construct UNISAT2, is relatively low in explaining satisfaction of students. Only the regression using arithmetic average of the satisfaction score is significant at a p-value of <0.05, however considering the gap score and the qualitative responses of students, the impact on post-choice satisfaction of this construct cannot be underestimated. It is likely that a masking effect may have occurred due to the dominance of some variables in this factor with a lower impact on satisfaction over the other variables with a stronger outcome on satisfaction. The average means analysis (as outlined in table 5.15) indicate that the gap score of the construct at the aggregate level is negative, and it is much higher than UNISAT3 and UNISAT4. Moreover, individual gap scores relate to *the complaint process* (-1.85), *information and guidance from overseas consultants* (-1.425), *and information and guidance from Australian Diplomatic missions* (-1.375) are also higher than the aggregate score, indicating these variables seem to have a significant influence on the satisfaction level of students.

An interesting finding in the preceding analysis is the marked difference in the perception levels of these two variables among the student groups. Indian and Thai students record negative perceptions indicating dissatisfaction on the process available for complaints on the inadequacy of services. The feedback from depth interviews supports this finding. The student response indicates that students, in general, are reluctant to make complaints for a number of reasons. First is the unfamiliarity of the system. According to a final year international student of Indian origin, most postgraduate students are unclear as to the process that needs to be followed to lodge a complaint. They appear to have the minimum contact with student

counsellors, due to study and work commitments and seem to be more comfortable to share their grievances with lecturers. Second is the lack of trust in the process. This stems from the belief that the university does not take action on student complaints and this is based on the argument that the university either deflects the issue when a complaint is made or no feedback is given to them on the action taken on a complaint.

Following comments from two Indian students elaborate this position.

"Computer facilities in our university are old, not serviced properly. The number of students using the labs has doubled but the facilities initially targeted for 200-300 students remain the same as before".

"When students raise the issue, the administration deflects it by saying students are not using the computers properly and the software is corrupted because students have been using food and drink in the labs"

Third is the fear among students of being noted as a complainer and of a possible backlash from the university that would affect their academic outcomes. Another international student who holds office as the President of the International Students Union in a university expressed his dismay at the unenviable position of the students due to lack of transparency in the complaints process.

"Students are frightened to complain, and one lecturer in particular has failed a number of students because students have complained about his teaching"

He further states:

"Students bring their complaints to us. We work closely with the international student counsellor, and she is aware of the problems, but the process remain the same and students suffer within"

Students' reluctance to complain is also attributed to their *'inner guilt'* of being heavily involved with extra part-time work and the fear that they would be exposed by the administration, if they complain.

The fourth reason preventing students from complaining is the poor communication skills among most of the international students. *"The students are not confident enough to lodge a complaint because of their poor knowledge of English during the initial period of their stay in the university. The university administration should be more considerate"* was the comment of a senior student who had intervened on number of occasions to help new students to resolve administrative issues. *"The university administration is not student friendly"* was another comment by another Indian student.

The above findings present a challenge to universities in terms of creating an environment whereby students can be encouraged to share their grievances and also to provide a continuous feedback on the actions taken to address issues of concern for students. Harvey (1997) points out that a proper feedback process would have a positive impact on student satisfaction and also provide several benefits to universities, such as:

- Demonstration of the institution's commitment to its principal stakeholder i.e. students. Student satisfaction involves taking student views seriously and acting on them;
- Focusing on the student learning experience and is instrumental in enhancing student learning opportunities;
- Providing a clear set of procedures for a process of continuos quality improvement;
- Ensuring that strategic management decisions are based on reliable and valid information about student concerns;
- Providing a means of benchmarking against which progress over time can be assessed.

The students hold the universities responsible for the poor service given by the overseas consultants who provide the initial information and guidance regarding the university, its courses and facilities in their country. They consider the role of overseas consultants as an extension of the university service, which is accurate under 'agent-principal' relationship. Indian and Thai students are highly critical of the services provided by the overseas consultants, particularly in regard to building very high expectations among students of the services of respective universities, some of which are difficult to fulfil. The perceptions of the services offered by the Australian diplomatic missions are also negative. The qualitative research findings indicate a mismatch of expectations on the role of the diplomatic missions between students and the missions. While students expect the Australian diplomatic missions to be more proactive and helpful in providing information and guidance in relation to their study interests, the diplomatic missions accept no role or responsibility in this respect. Students' dissatisfaction of the services provided by overseas diplomatic missions are also related to the long delays in granting student visas which have prevented students from participating in university orientation programs at the beginning of the new semesters.

Compared to Indian and Thai students, Indonesian and Chinese students have relatively lower expectations and are more inclined to accept and be content with university services and facilities as they are. The complaining behaviour of these students is therefore different from Indian and Thai students. This is demonstrated by the higher percentage of students satisfied with the delivery of university services to students. As outlined in sections 2.6 and 5.5, cultural and socio-economic factors are responsible for differences in the complaining behaviour of students.

A study by Singh (1991) indicates that the consumer response to dissatisfaction is heavily influenced by individual characteristics. This supports the previous argument that expectations and perceptions of students differ in view of their diverse cultural and socio-economic backgrounds. The same study reveals that only 38% take action to complain and the complainants are somewhat older than the average. Yau *et al* (1999), on the other hand, claims that the propensity of the Chinese consumers to complain is driven by the opportunity for replacement or exchange of an

unsatisfactory product or service. Both these studies have been conducted in the retail environment and the findings are not totally comparable to those of the present study.

In summary, the test of the second hypothesis *(H2: There are differences in the importance of the factors relating to CS/D by student groups)* was conducted with logistic regression using factor scores and satisfaction scores, and was supported by mean score analysis. Table 5.23 presents the average mean scores for the four factors where UNISAT1 emerged as the most important factor influencing satisfaction of the student groups, followed by UNISAT3 and UNISAT4. The mean scores for UNISAT2 were lower than the other factors indicating its lower influence on satisfaction. However, the estimated marginal means analysis, referred to in section 5.5.1 and the qualitative research findings highlighted the strong influence of *'complaining process'* and the *'information guidance by overseas consultants'* in the satisfaction formation process of students. The underlying message was that the students' concerns are mainly focused on the quality of education, student facilities, reputation of the institutions, the marketability of their degrees for better career prospects, and the overall customer value provided by the universities. The analysis of the qualitative responses of students confirms that students are, in general, satisfied with the teaching quality and the quality of lecturers, but are unhappy with the university support and facilities.

Table 5.23: Average Means Scores

Rank	Factor	Mean Score	
		E	P
1	UNISAT1	6.2	5.0
2	UNISAT3	6.0	4.9
3	UNISAT4	6.0	5.1
4	UNISAT2	5.8	4.6

5.5.3. Third hypothesis

The third hypothesis, H3: that *"the level of satisfaction among international postgraduate students from Asia varies significantly between countries of origin"* was tested using ANOVA. The test suggests that the differences between countries of

origin are significant at a p- value of < 0.01. This is observed in all three categories of satisfaction scores: difference score (DIFFC), arithmetic average of the ratio score (RAC), and geometric average of the ratio score (RGC), as outlined in the table 5.24 below. The comparisons between countries are based on a significance level of 0.05.

Table 5.24:ANOVA test of the differences in satisfaction - Country.

(a) Dependent Variable: DIFFC (Difference score-Country)

Country	China	India	Indonesia	Thailand
China		√	√	0
India			√	√
Indonesia				0

(b) Dependent Variable: RAC (Arithmetic average of the ratio score- Country)

Country	China	India	Indonesia	Thailand
China		√	√	√
India			√	√
Indonesia				0

(c) Dependent Variable: RGC (Geometric average of ratio score-Country)

Country	China	India	Indonesia	Thailand
China		√	√	√
India			√	√
Indonesia				0

Differences between countries (√ = Significant, 0 = Not significant)

It is clear from the above that the satisfaction level of students from India appears to be significantly different from all other countries. The differences also exist between Indonesia and China. However, the results indicate that the differences between Thailand and Indonesia are not significant. Given these results, the null hypothesis that the variance in the satisfaction levels of students from China, India, Indonesia and Thailand is equal is rejected and the alternate hypothesis is accepted.

The group wise analysis of the means supports the above finding. The figure 5.3 below shows the variations.

Fig. 5.3: Group-wise satisfaction means analysis
Country of origin
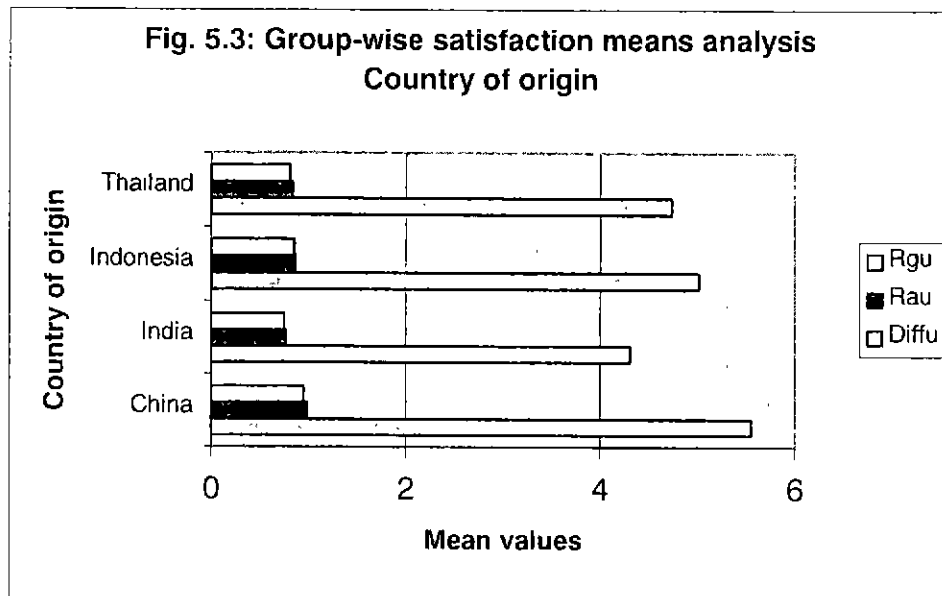
5.5.4. Fourth hypothesis

The fourth hypothesis, H4: *"The level of satisfaction of international postgraduate students from Asia studying varies significantly between universities "* was also tested using ANOVA. The results show that the level of satisfaction of students differ significantly between universities, indicated by a p-value of <0.001 for each category of satisfaction scores, and further demonstrated by table 5.25, given below, where the comparisons are based on a significance level of 0.05

Table 5.25: ANOVA test of the differences in satisfaction – University

(a) Dependent Variable: DIFFU (Difference score- University)

University	Deakin	La Trobe	Melbourne	Swinburne	Victoria
Deakin		0	0	√	0
La Trobe			0	√	√
Melbourne				√	√
Swinburne					√

(b) Dependent Variable: RAU (Arithmetic average of the ratio score-University)

University	Deakin	La Trobe	Melbourne	Swinburne	Victoria
Deakin		0	0	√	0
La Trobe			0	√	√
Melbourne				√	√
Swinburne					√

(c) Dependent Variable: RGU (Geometric average of the ratio score-University)

University	Deakin	La Trobe	Melbourne	Swinburne	Victoria
Deakin		0	0	√	0
La Trobe			0	√	√
Melbourne				√	√
Swinburne					0

Differences between universities (√ = Significant, 0= Not significant)

Table 5.25 above shows that significant differences exist in the satisfaction level of students studying in different universities. The satisfaction level of students at Swinburne University of Technology is significantly different from all other universities in Victoria. Similarly La Trobe differs from Victoria University of Technology and The University of Melbourne, while The University of Melbourne differs from Victoria University of Technology and Swinburne University of Technology.

The figure 5.4.shows the group wise means analysis, which confirmed the above finding. The analysis confirms that University D leads all other universities in terms of the overall satisfaction of students, followed by University C, University E, University A, and University B. The difference in the overall satisfaction between students in University C and University D is very marginal. University B shows the lowest satisfaction among students compared to other universities. It is logical to assume that the above differences in satisfaction levels of students in universities are directly related to the differences in the quality of services provided by the respective universities. However, an interesting finding is that these differences correlate with the composition of respondents from each of the universities. As shown in table 5.1, the low overall satisfaction levels in universities are associated with the larger presence of students from India and Thailand who are found to be the least satisfied students in the sample. Similarly, a larger presence of students from Indonesia and China has had a positive effect on the overall satisfaction of students in the universities.

Fig 5.4: Group-wise satisfaction means analysis
Univeristy
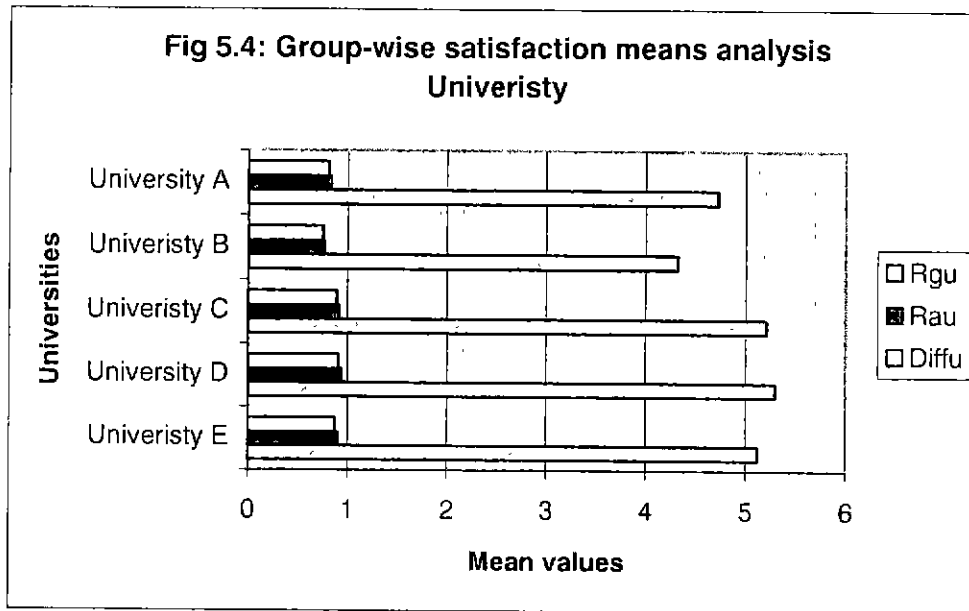
5.5.5. Hypotheses five to eleven

The remaining seven hypotheses (H5 to H11) were tested using Logistic regression and General Linear modelling procedures. The hypotheses are given below.

H5: *There is a positive relationship between the age of students and*
the level of satisfaction of international postgraduate students from Asia

H6: *The level of satisfaction of international postgraduate students from Asia varies between male and female students.*

H7: *There is a relationship between the marital status and the level of satisfaction of international postgraduate students from Asia.*

H8: *There is a positive relationship between the semester of the course and the level of satisfaction of international postgraduate students from Asia.*

H9: *The level of satisfaction of international postgraduate students from Asia varies with the field of study.*

H10: The level of satisfaction of international postgraduate students from Asia varies with the type of degree.

H11: The level of satisfaction of international postgraduate students from Asia varies with the source of funding.

The logistic regression was aimed at determining the probability of satisfaction and the general linear modelling was used to predict the level of satisfaction and the significance of the relationship between students' satisfaction and the independent variables, gender, age, field of study, degree, course level (semesters completed), methods of financing studies, and the marital status. The test indicates the direction and the degree of impact of each variable on satisfaction. This relationship was expressed as:

Satisfaction = f (age, gender, marital status, field of study,
course level, degree, and source of funding).

The Chi square results as shown in Table 5.26 indicate that among all explanatory variables *age, course level* and the *marital status* showed a significant relationship with student satisfaction. Age emerges as a factor with the highest impact on the variability of the dependent variable with a significance level at <1%, cross-tabulated with all three satisfaction (scores) measures. Similarly, the variability of the *course level* or the *number of semesters completed in the university* is significant at <5%, with one of the satisfaction measures (raw difference score), while the *marital status* of the student is significant at <10% with two satisfaction measures: the average of the ratio score and the geometric average of the ratio score.

Table 5.26: Results of Logistic regression and General Linear Modelling tests.

1. **Difference score (S_{DSU})**

S_{DSU} = 1.123 − 0.123 Sex − 0.619 Age*** + 0.132 Field + 0.147 (Deg) − 0.110 (Sem)** + 0.177(Fin) + 0.545 (Marit)

    (0.295)   (0.188)   (0.087)   (0.150)   (0.052)   (0.102)   (0.3394)

    $R^2_{p=}$ 75.3. n.371

2. **Arithmetic average of the ratio score (S_{RASU})**

S_{RASU} = 0.339 − 0.133 Sex − 0.561 Age*** + 0.092 Field)+0.192 (Deg) − 0.076 Sem + 0.180 Fin* + 0.678 Marit**

    (0.2669) (0.1724)   (0.0774)   (0.1415)   (0.0495)   (0.1016)   (0.3394)

    $R^2_{p=}$ 72.4. n.371

3. **Geometric average of the ratio score (S_{RGSU})**

S_{RGSU} = 0.8878 − 0.1215 Sex − 0.6103 Age*** + 0.0805 Field + 0.1512 Deg − 0.0749 Sem + 0.1740 Fin* + 0.6105 Marit*

    (0.2780) (0.1783)   (0.0793)   (0.1435)   (0.0505)   (0.1044)   (0.3498)

    $R^2_{p=}$ 73.5. n.371

*** **Denotes significance at ≤ 1%,** ** denotes significance at ≤ 5%, * denotes significance at ≤ 10%; Standard errors are given in parenthesis

Variables: **Sex** = Gender, **Age** = Age category, **Field** = Course of study, **Deg** = Type of award, **Sem** = No. of semesters completed,

Fin = Method financing studies, **Marit** = Marital status.

An interpretation of the results of the tests would be that student satisfaction increases with *age*, for example. the older the student, the higher the satisfaction, signifying that the maturity of the student has a positive impact on overall satisfaction. This relationship is supported by the other significant variables namely the *course level (the number of semesters in the course)*, and the *marital status* of the student, which are also related to the experience and maturity of students. Past research confirming these findings was discussed in section 3.8.

The validity of these results is further enhanced by the higher predicted probability of the model as explained by R^2_p value. This value is expressed in terms of the percentage of the correct predictions made by the model within the sample. According to Hair *et al* (1995), a predicted probability greater than 50% increases the accuracy of the prediction. The percentage prediction of the current model, using the three satisfaction scores, exceeded 70% of the observations in the sample, indicating a better overall fit of the model. R^2_p value was used in this analysis as an alternative to $\check{R}^2$, which was not considered as an accurate measure of overall fit of a model (Studenmund, 1997).

The group-wise means analysis provide a further insight into the relationship between the independent variables and the dependent variable - student satisfaction. It provides an objective means of assessing the predictive power of an asset of independent variables. Figures 5.5 to 5.11 show the relationship of each of the independent variable with student satisfaction, which is explained below.

5.5.5.1.   Age

As discussed earlier in section 3.8, age appears to have a significant relationship with student satisfaction and research indicate that the differences in consumer behaviour are associated with maturity and experience, which come with age. For example, Rautopuro and Vaisanen (2001), in their study on non-traditional students at a Scandinavian university, found that the university experience differed between age groups, particularly between older and younger students. Figure 5.5 below shows that the satisfaction of students increases with *age* and this increase is sharp between the ages of 25 and 34. The satisfaction continues to increase at a slower rate thereafter.

Figure 5.5: Group-wise satisfaction means analysis
Age
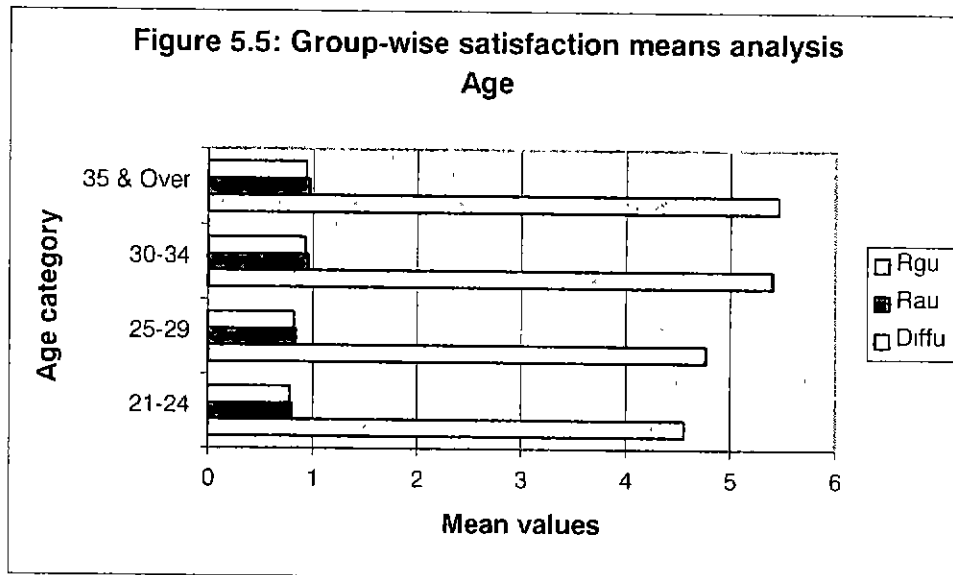
5.5.5.2. Gender

Although Chi-square test is not significant, the group-wise means indicate a gender influence on satisfaction. The analysis shows that it is likely that male students are more satisfied than female students, as depicted in figure 5.6.

Fig 5.6: Group-wise satisfaction means analysis
Gender
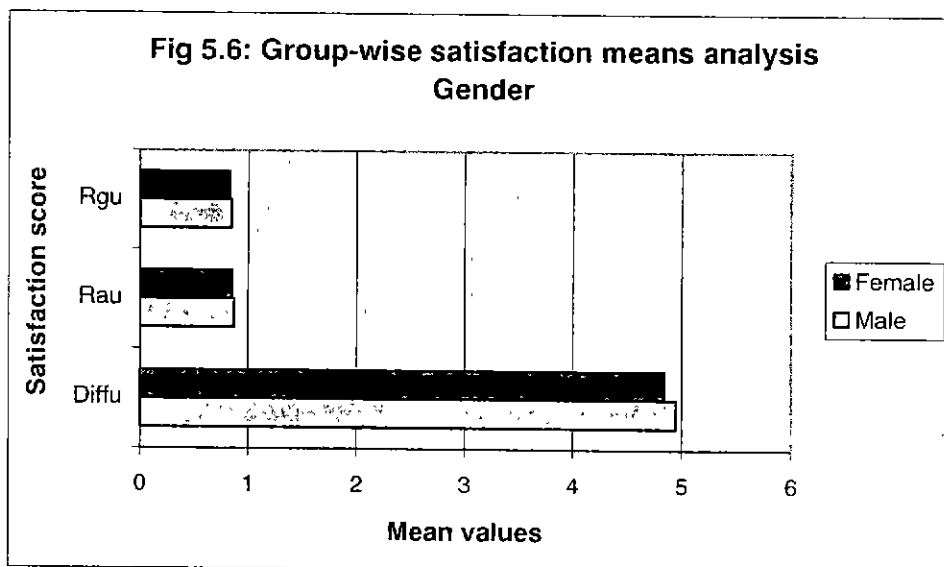
Past research, as discussed in section 3.8, has confirmed the gender influence on decision-making and in particular a recent study by Ndhlovu and Senguder (2002), has found that perceptions differed due to differences in gender.

5.5.5.3.   Marital Status

The group-wise satisfaction means indicate that marital status of students have a direct relationship with satisfaction formation among students, although the logistic regression and the Chi-square test did not indicate a significant relationship. As depicted in figure 5.7, it would appear that married students are more likely to be satisfied than those unmarried. The married students in the sample largely comprised of higher degree students pursuing doctoral studies or mature students in Masters' courses. This finding supports the direct correlation of the maturity of students with the level of satisfaction, as discussed in earlier sections under age.

Fig 5.7: Group-wise satisfaction means analysis Marital status
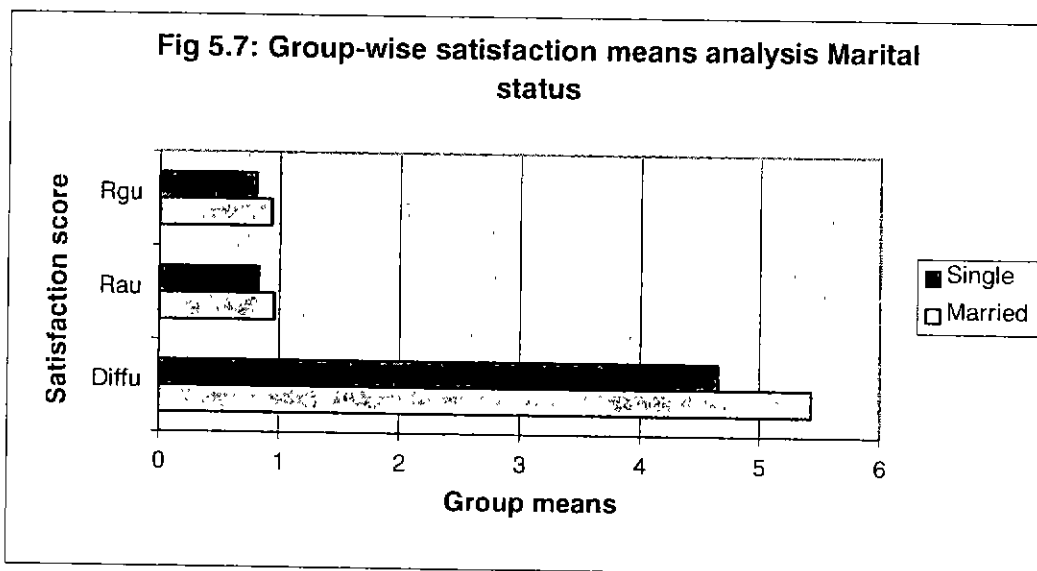
5.5.5.4.   Field of Study

A cross-tabulation of the group-wise means in relation to fourteen major classifications of study, indicate that students in the disciplines of Agriculture, Education, Physical sciences and Law appear to be the most satisfied compared to students in other disciplines. The students studying Business Management and Economics and Computer and Information Sciences who comprise over two thirds (75.5%) of the students in the sample have the lowest levels of satisfaction. The above relationships are shown in Figure 5.8. The lower levels of satisfaction among these students may be attributed to the inadequacy of university facilities such as computing and library facilities, which are the major concerns of a majority of the students.

Fig 5.8: Group-wise satisfaction means analysis
Field of Study
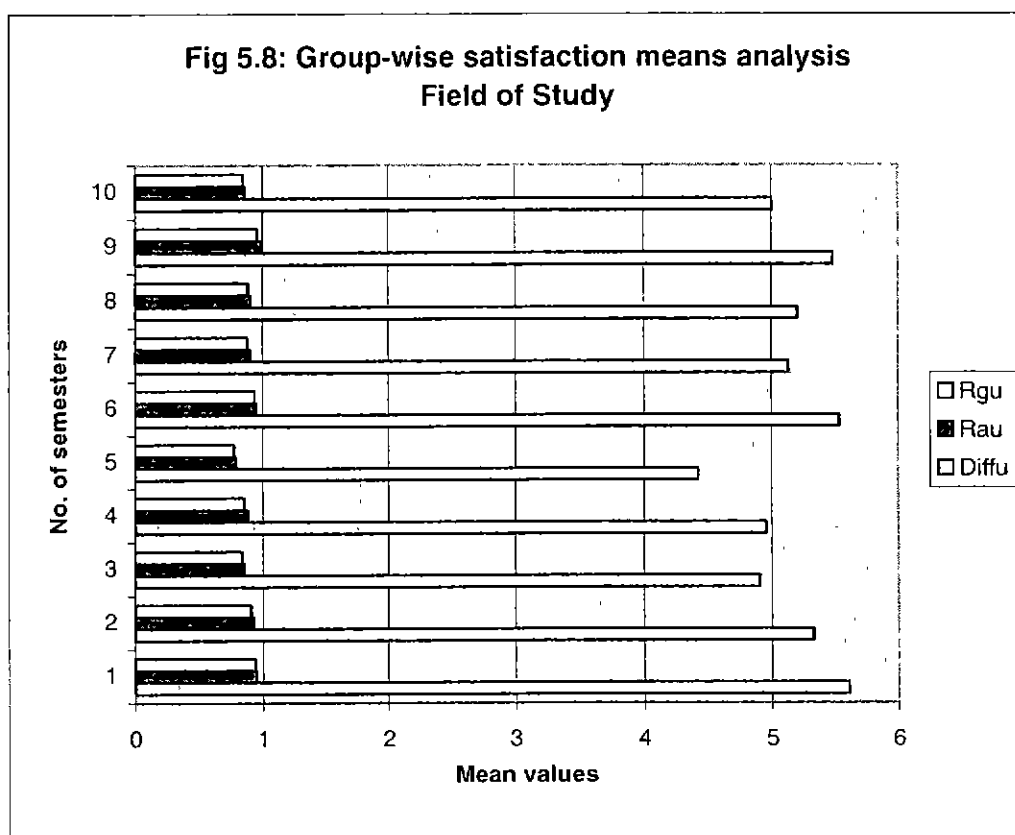
5.5.5.5. Degree

The relationship of the type of degree with satisfaction is shown in figure 5.9.

The trend indicates that satisfaction increased with students pursuing higher research degrees in universities. This applies particularly to students undertaking Professional Doctorate and PhD programs, though in comparison the level of satisfaction of students reading for Masters by research is higher than those undertaking the same degree by coursework.

The variability of satisfaction by the type of award is partly attributed to greater maturity and experience of students undertaking a higher research degree, who are comparatively older. It is also acknowledged that there may be other reasons for the differences in satisfaction by type of award, which would require further research. The most interesting finding in the group-wise analysis is that students pursuing professional doctorates are the most satisfied among all students. The sample size of this category, however, is very small (1.8%) to generalise the finding.

Fig 5.9: Group-wise satisfaction means analysis
Type of Degree
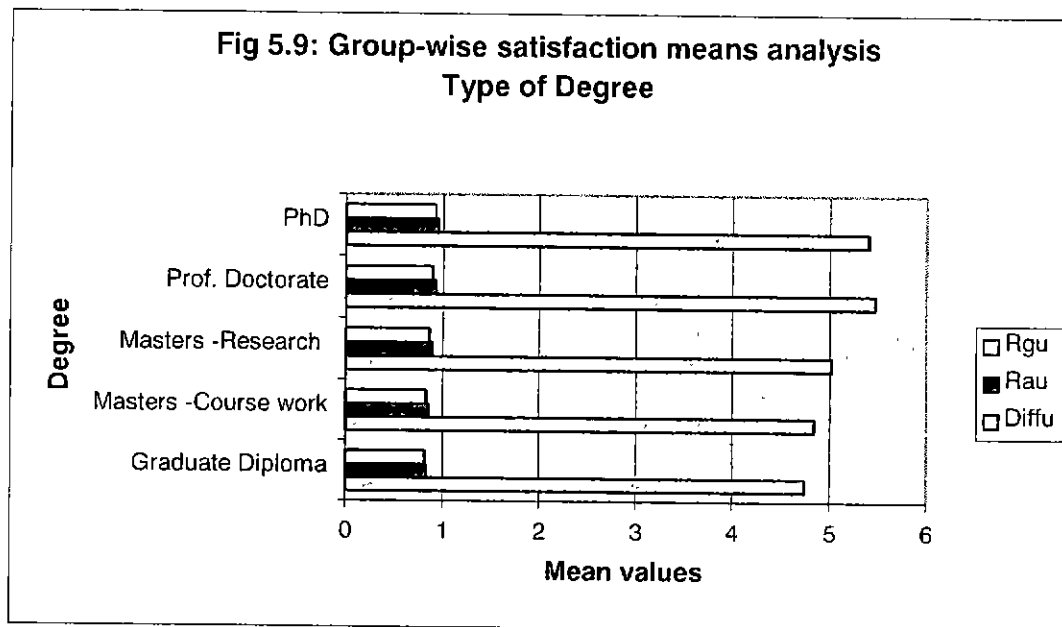
5.5.5.6. Course Level (Semesters completed)

The group-wise means analysis in relation to the course level indicates that the satisfaction of students is likely to increase with the semesters completed. However, this increase continued until the third year of study, when the satisfaction level dropped significantly. The shift in the trend at the end of the third year can be explained on the basis that it marks the maximum full time study period of most of the postgraduate programs.

The increasing trend in student satisfaction within the first three years, as depicted in figure 5.10 could be attributed to the accumulated experience of the students, which may lead to a revision of earlier expectations of the quality of service provided by the universities thereby moderating behaviour. The literature on *cognitive dissonance*, as discussed in section 2.7, supports the effect of accumulated experience in modifying consumer attitudes. According to the theory of *cognitive dissonance*, when dissonance occurs, consumers themselves strive to reduce it by changing their evaluation of the alternative, and seeking new information to change perception of the current experience. The decreasing trend in satisfaction after the third year, on the other hand, may be due to other external factors such as financial pressure to complete studies and the mental exhaustion of students nearing the completion of their studies.

Fig. 5.10: Group-wise means analysis - Semester
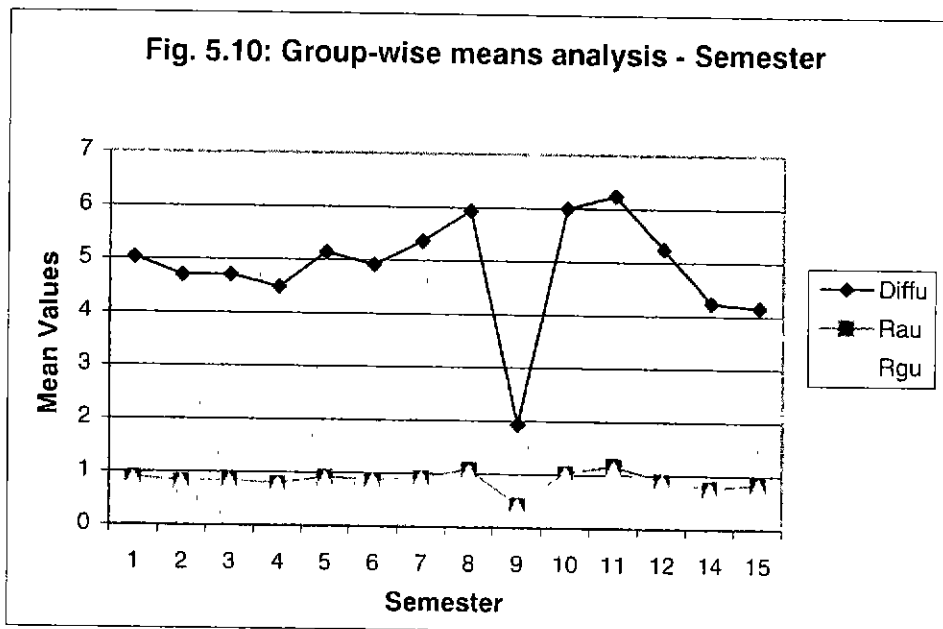
5.5.5.7. Source of funding

The relationship between student satisfaction and the sources of funding is shown in figure 5.11. The analysis indicates that students who are supported by external funding such as scholarships and employer sponsorships are more likely to be satisfied than students whose studies are funded by their own families or by the individual themselves. It would appear that students who bear the full cost of education seem to have higher expectations of the quality of services provided by universities and, are more demanding and discriminating than those supported by external funding. As a consequence of this, they are likely to be less satisfied when high expectations are not fulfilled. The nature of human behaviour associated with optimisation of outcomes has been analysed by philosophers, psychologists and economist since very early days. Aristotle's *Nicomachean Ethics* views a person's decision making as a judgement in one's best interests, based on the *"prudence"* or *"practical wisdom"* of a person (Biffle, 1991).

From an economic point of view, the decision-making and optimisation of its outcomes are subject to the constraints of bounded rationality (Simon *et al*, 1992). The tendency therefore is that the decisions are made on the basis of *'satisficing' behaviour* of a person when aiming at the best outcome.

Figure. 5.11: Group-wise satisfaction means analysis Source of funding
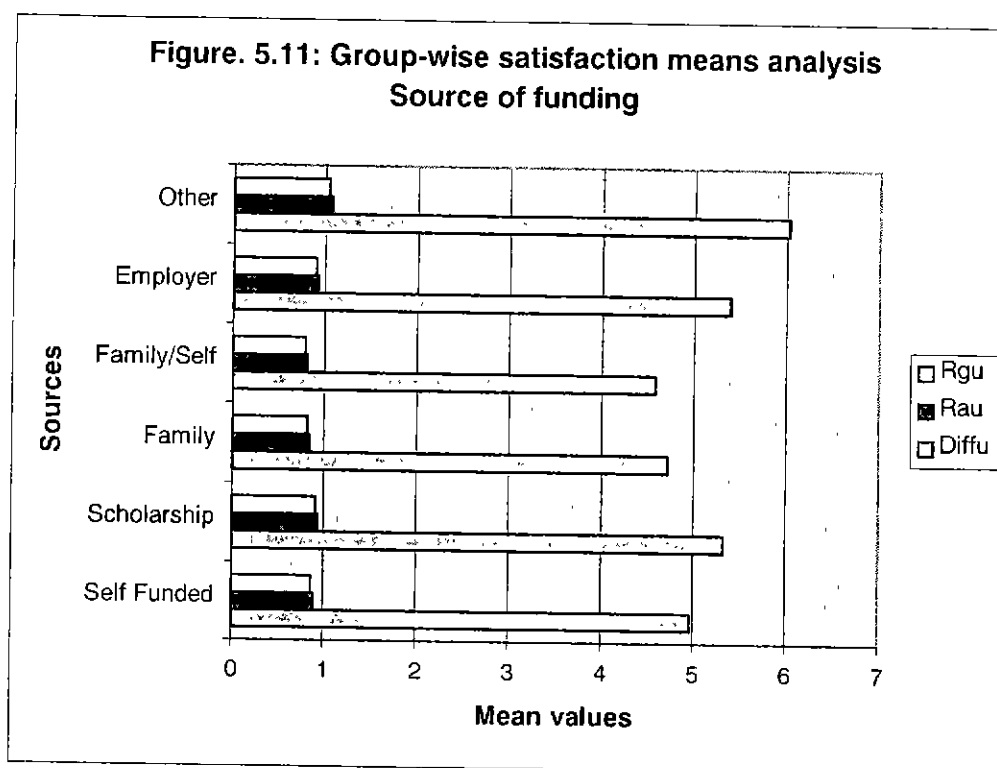
The foregoing analysis highlights the variances in the relationship between independent variables and the dependent variable - student satisfaction. The data indicated that each independent variable seems to have a different effect on satisfaction. The impact of age, semester and marital status appear to be more significant than all other variables, confirming the likely effect of the accumulated experience and the maturity of students in modifying the behaviour and attitudes of students. This behaviour potentially results in a revision of the original expectations and *experimentally accommodating* what is available to them.

5.6. Summary

This chapter presented the results of the data analysis, evaluation of major constructs influencing satisfaction, and the testing of hypotheses. Both qualitative and quantitative techniques were used to analyse the data.

The profile of respondents indicated a normal distribution of their demographic characteristics, indicating that the sample was representative of the postgraduate international students from China, India, Indonesia and Thailand. The data was

processed to ensure equality in the variance among student groups and to minimize the response errors.

The factor analysis resulted in four major constructs on which the analysis was conducted to determine the importance of the constructs in explaining student satisfaction. It was revealed that the main concerns of the international postgraduate students from China, India, Indonesia and Thailand were related to eduction standards and facilities, study outcomes, overall customer value, and career prospects.

The data was cross tabulated with three variants of satisfaction scores: raw average of the difference between perceptions and expectations of students, the arithmetic average of the ratio score, and the geometric average of the ratio score in order to test eleven hypotheses using ANOVA, and logistic and linear regression procedures. The results indicated variances in the number of satisfied students in the sample and also significant differences in the effects of variables and factors on student satisfaction. The quantitative analysis was supported by the qualitative data gathered for this study.

The following chapter will present a summary and conclusions of the study.

Chapter 6

Summary and Conclusions

6.1. Introduction

The objective of this chapter is to summarise and draw conclusions on the main findings of the study, discuss implications for marketing theory and practice, and the limitations of the study. This is followed by suggestions for future research.

The chapter consists of five sections. The first section (6.2) summarises the different stages of the research to provide a background to the findings in relation to the main research problem. The second section (6.3) presents conclusions on the hypotheses and the research problem including the contribution to knowledge. The third section (6.4) focuses on the implications for marketing theory and practice, and the fourth section centres on the limitations of the study (6.5). The final section (6.6) addresses the suggestions for future research. A summary of the chapter (6.7) is presented at the end.

6.2. Summary of stages of the research

Chapter one discussed the purpose of and the rationale for this study on the basis that it fills a gap in knowledge in an important and relatively uncharted area of research in international education. It was argued that from an economic viewpoint, international education is one of the fastest growth industries in Australia, contributing over $4 billion in export revenue to the country's economy (Nelson, 2002). Given the need to find alternative sources of income due to government funding constraints, competition among universities in Australia has intensified to attract and retain full-fee paying students. In these circumstances, increasing the satisfaction levels of students studying in Australia has become a critical success factor.

Student satisfaction remains a key strategic variable in maintaining a competitive position in the international education market by Australian universities. As discussed in section 2.3, CS/D is central to customer retention and positive word-of-mouth communication (WOM) in the current context of services marketing (Harvis *et al*, 2000). Guolla (1999) points out that the degree of satisfaction determines the nature of WOM whether it is positive or negative. From an aggregate perspective, highly satisfied students recommend programs, return as graduate students, recruit prospective students or regularly donate as alumni. A study of an Australian university by Athiyaman (2000), further confirms the strong relationship that exists between student satisfaction and WOM and its impact on students' choice process. The link between WOM and customer retention is therefore significant.

Universities are facing the challenge of rising student expectations of quality, service and value for money, and the need to increase the satisfaction level of their students to retain and increase international student numbers. Moreover, the diversity of the cultural backgrounds of the international students studying in Australian universities and those of the potential students also poses a major challenge to Australian universities in terms of understanding the post-choice behaviour of students and its impact on satisfaction levels.

Statistics indicate that Asia continues to remain a major source of international students to Australian universities and the number of international students pursuing postgraduate education in Australia is increasing, demonstrating further growth potential in this sector. The focus of this research on a comparative study of international postgraduate students from four key source countries in Asia was therefore justified.

Chapter two focussed on reviewing literature on major research themes of relevance to the present study. These included the macro-environment of international education particularly in relation to the choice of study destination by international students, service quality, customer satisfaction in international education, customer value and customer satisfaction, culture and customer satisfaction and the theory of cognitive dissonance. These research themes were discussed in relation to international education in general and postgraduate education in particular.

Chapter three was a logical extension of the literature review to present the theoretical and conceptual framework and a preliminary model of post-choice satisfaction, which forms the basis of the study. The expectancy discrepancy paradigm and its associated constructs - expectations and perceptions - were evaluated identifying the relationships and the influence of these theoretical constructs in relation to the development of the model. The chapter also investigated the pre and post choice (purchase) stages of the consumer decision process as part of the development of the model. The SERVQUAL instrument, which was adapted for the study was justified as a tool to measure satisfaction, following a critical analysis of its strengths and limitations. A preliminary model of post-choice satisfaction was then presented followed by the identification of eleven hypotheses to be tested using the model.

Chapter four - Method and Preliminary Analysis - was presented in two parts. The first part discussed the qualitative research methods while the second part focussed on the quantitative research methods. The ethical considerations associated with the research methodology, and the justification of the research paradigm were introduced in the first part prior to the discussion on the research design, parameters of the exploratory research, the processes followed in developing the questionnaire design, sampling techniques used, and the method of data collection. The findings of the qualitative research, using focus groups and depth interviews, were discussed in this part with the aim of identifying the key variables influencing satisfaction of students to be incorporated in the final model of post-choice satisfaction. The second part concentrated on the quantitative data analysis strategy discussed under factor analysis, satisfaction scores, ANOVA and regression analysis to test the hypotheses developed for the study. The final model of post-choice satisfaction was presented at the end of the chapter.

The discussion in chapter 5 was focussed on the analysis of data and reporting of results. The characteristics of the sample were discussed in section 5.2, including the response and non-response issues and descriptive statistics. The main finding of the sample profile analysis was the normal distribution pattern of the sample of students by country of origin and by university as discussed in section 5.2.3. The gender profile (section 5.2.3.1) of the sample showed an equal distribution. Variances were

found in the distribution of age (section 5.2.3.2) which was skewed towards younger students less than 30 years, marital status (section 5.2.3.3.) which was skewed towards unmarried, field of study (section 5.2.3.4) which was skewed towards Business, Management and Economics, degree programs (section 5.2.3.5) which was skewed towards Masters' degree programs, course level (section 5.2.3.6) which was skewed towards first two semesters of the first year, and source of funding (section 5.2.3.7) which was skewed towards self funding. The conclusion of the respondent profile analysis was that the sample chosen for the study possessed characteristics that would make it representative of the total population.

Section 5.3 discussed the process of factor analysis and its outcomes in terms of the formation of constructs to be investigated. It resulted in generating four constructs with 26 variables from the original 36, and with high correlation among variables in each construct. This was demonstrated by their high loadings, all of which exceeded 0.05. Similarly the high reliability alphas confirmed the internal consistency and the best fit of the constructs. The four constructs were labelled as *UNISAT1: Education Standards and Facilities, UNISAT2: Information and Guidance, UNISAT3: Customer Value and Study outcomes, UNISAT4: Image/Prestige and Recognition.*

The relevance of satisfaction scores to data analysis was discussed in section 5.4, before the testing of hypotheses in section 5.5.

6.3. Conclusions on the main research question

The main research question investigated in this research - *"Are there differences in the level of customer satisfaction and dissatisfaction (CS/D) between international postgraduate students from Asia studying in Australian universities?"* - was aimed at providing an insight into the relative differences in post-choice behaviour of students which would have implications on the strategic response of universities to defend and nurture this market segment. The main research problem was supplemented by three research questions to provide the scope and the parameters of the research. Multiple methodologies involving both qualitative and quantitative techniques were used to test eleven hypotheses to achieve the research objectives, results of which were discussed in section 5.5.

The results indicate that the level of satisfaction differs among students from China, India, Indonesia and Thailand and how and why these differences occur are presented through hypotheses testing. As discussed in sections 3.5 and 4.14.3, the measurement approach followed in this study is an adaptation of the seminal expectancy disconfirmation paradigm and the SERVQUAL methodology. It was argued that in view of the limitations in the weighted gap score applied in the SERVQUAL method to measure relative satisfaction, this study proposed and used ratios in the form of two variants of satisfaction scores (arithmetic average of ratio score and geometric average of the ratio score) in addition to the weighted gap score, to cross-tabulate the explanatory variables and the factors. The use of additional variants of satisfaction scores was justified on the basis that the ratio scores capture additional information on the degree of satisfaction or the relative satisfaction levels of students and the method of calculation of these scores were explained in section 4.14.3.

Table 5.18 presented the percentage of distribution of the number of students satisfied by country of origin. It revealed that the total number of satisfied students was small and among student groups there were variances in the numbers satisfied. Indian students were the most dissatisfied, based on the overall satisfaction measure, with an average of 9% of the total number of Indian students, followed by students from Thailand with 15%, Indonesia with 21% and China with 50% being satisfied.

Having established the differences in the overall satisfaction levels among the student groups, the study investigated multiple measurement criteria to explain how and why these differences exist using eleven hypotheses that were tested. Table 6.1 presents a summary of results of the hypotheses testing.

6.3.1. Conclusions regarding hypotheses

The hypotheses developed for the study to deal with the main research problem and the supplementary questions outlined in section 1.3 contained eleven measurement components. The first two hypotheses focussed on variances in the importance of the variables and constructs in influencing student satisfaction, and the third and fourth hypotheses dealt with the differences in satisfaction between countries of origin and

Table 6.1: Summary of results of hypotheses testing

Measurement	Hypotheses	Techniques and analysis	Supported
Importance of variables	**H1**: There are differences in the rating of variables that influence CS/D by student groups	Estimated marginal Means	Yes
Importance of factors	**H2**: There are differences in the importance of the factors relating to CS/D by student groups	Logistic regression with factor scores, Average Means, Qualitative	Yes UNISAT1, UNISAT3 & UNISAT4. UNISAT2 (partially)
Country	**H3**: The level of satisfaction of international postgraduate students from Asia varies significantly between countries of origin	ANOVA. Group-wise means	Yes Yes
University	**H4**: The level of satisfaction of international postgraduate students from Asia varies significantly between universities	ANOVA. Group-wise means	Yes Yes
Age	**H5**: There is a positive relationship between the age of students and the level of satisfaction of international postgraduate students from Asia	Logistic and Linear regression. Group-wise means	Yes Yes
Gender	**H6**: The level of satisfaction of international postgraduate students from Asia varies between male and female students	Logistic and Linear regression. Group-wise means	No Yes
Marital status	**H7**: There is a relationship between the marital status and the level of satisfaction of international postgraduate students from Asia	Logistic and Linear regression. Group-wise means	Yes Yes
Field of Study	**H8**: There is a relationship between the semester of the course and the level of satisfaction of international postgraduate students from Asia	Logistic and Linear regression. Group-wise means	No Yes
Course level	**H9**: The level of satisfaction of international postgraduate students from Asia varies with the field of study.	Logistic and Linear regression. Group-wise means	Yes Yes
Degree	**H10**: The level of satisfaction of international postgraduate students from Asia varies with type of degree	Logistic and Linear regression Group-wise means	No Yes
Source of funding	**H11**: The level of satisfaction of international postgraduate students from Asia varies with the source of funding	Logistic and Linear regression. Group-wise means	No Yes

182

the universities. Hypotheses 4 to 11 investigated the relationship between student satisfaction and other explanatory variables such as age, gender, marital status, field of study, course level, type of degree, and source of funding. Some of the components such as the importance of the variables, country, university, age, and gender were identified in past research but were not used directly to measure relative satisfaction of postgraduate students. Moreover, marital status, field of study, course level and source of funding are new measurement components developed for this study. These components, which underlie several dimensions of the sample, and their findings, are contributions of this research. The following sections will present conclusions on each of the hypotheses.

6.3.1.1. First hypothesis

The first hypothesis (*"There are differences in the rating of variables that influence CS/D by student groups"*) dealt with the differences in the rating (importance) of the respective variables in influencing satisfaction. The respondents were presented with a list of 36 variables, following the pre-testing of the survey questionnaire, in the form of statements to be rated on a scale of 1 (strongly disagree) and 7 (strongly agree). Section 5.5 presented

The results of testing of this hypothesis, which were conducted using estimated marginal means of the student ratings and MANOVA to ascertain whether or not the CS/D levels are equal among student groups.

A key finding was that the overall expectations of students were very high, relative to the perceptions of the performance of the universities in service delivery. Indian students had the highest expectations, followed by Indonesian, Thai, and Chinese. Further the variables making up the UNISAT1: *education standard and facilities* recorded the highest ratings on expectations and perceptions suggesting a predominant influence of this construct on student satisfaction compared to the other three constructs.

6.3.1.2. Second hypothesis

In the second hypothesis, (*"There are differences in the importance of the factors on student CS/D"*) the focus was on the relevance and influence of the four constructs

generated from factor analysis on student satisfaction. As discussed in section 5.5.2, the chi-square tests of the logistic regression analysis using factor scores indicated that three of the constructs – UNISAT1: *education standards and facilities*, UNISAT3: *customer value and study outcomes*, UNISAT4: *Image/prestige and recognition* were positively related to satisfaction. These results were corroborated by the means analysis and the qualitative research. There was a clear indication that the students' concerns were mainly focused on the quality of education, student facilities, reputation of the institutions, the marketability of their degrees for better career prospects, and the overall customer value provided by the universities. The students, in general, were satisfied with teaching quality and the quality of lecturers, but were dissatisfied with university support and facilities.

Nine variables measured the first construct, UNISAT1: *education standards and facilities*, which was found to be the most dominant factor in influencing student satisfaction as discussed in section 5.5.2.1. It was also revealed that among all variables making up this construct, access to computer labs and modern computer facilities had the highest impact on student satisfaction, followed by the standard of teaching, class sizes and modern library facilities.

One of the key findings was the impact of student-staff relationships on student satisfaction. This stems from the perceived role of academic staff as providers of student support akin to student counsellors in addition to their teaching responsibility given the longer contact hours students seem to have with the teaching staff compared to any other member of the university staff. While past research has identified that the standard and quality of teaching as variables in education research, the perceived role of the academic staff beyond teaching to student support and counselling is a new finding that is contributed by this research.

The third construct, UNISAT3: *customer value and study outcomes* dealt with the perceived value of university services measured by six variables, which had a strong influence on student satisfaction. As discussed in section 5.5.2.2, students' perception on universities' pre-occupation with money before education and the need for better communication strategies to minimize ill will among students were major findings in this area. The variables included in the construct were identified in early research. The

contribution of this research was the concept of customer value, which was largely supported by the qualitative research conducted for this study. As discussed in sections 2.3 and 2.5, from the customer's standpoint, acquiring the desired level of satisfaction has a price, which includes money spent, plus time, effort, and opportunity cost. Researchers (Schumann *et al*, 1990; Parasuraman *et al*, 1985; Sharma and Lambert, 1994) have confirmed the strong relationship that exist between customer value and customer satisfaction and it is important for universities to understand the factors that contribute towards what students say they value.

The results indicated that the five variables, which comprised of the fourth construct, UNISAT4: *image/prestige and recognition* showed a strong correlation with student satisfaction. An important finding was the link between the prestige and recognition of a university in Australia and the employment outcomes in the students' home country. In this context, the opportunity available to students to gain Australian industry experience was an important driver of satisfaction. The qualitative research indicated that this was an area of major concern for students.

Although the logistic regression results indicated that the construct UNISAT2: *information and guidance* was not as significant as the other three constructs in influencing student satisfaction, the marginal means analysis and qualitative research findings found that three out of the eight variables that comprised the construct (*'complaints process for services and facilities', 'information and guidance from overseas consultants'* and *'information and guidance from Australian diplomatic missions')* seem to have a significant impact on the satisfaction formation process of students.

The results indicated that the students were dissatisfied with the process available in universities to make complaints. Four reasons were found to be responsible for the reluctance of students to make complaints namely, (a) lack of awareness of the process, (b) lack of trust of the process, (c) fear of a backlash from lecturers and authorities, and (d) poor communication skills among students. The results also indicated variances in the complaining behaviour of students, which were attributed to cultural differences among the student groups.

Another finding was the relationship between student perceptions of the roles of overseas consultants and Australian diplomatic missions and the overall dissatisfaction among students in regard to their performance.

Past research has dealt with most of the variables in this construct and also has identified 'information' as a mediating variable influencing satisfaction (Patterson et al, 1997). However, the relationship of these variables with student satisfaction and more specifically with the satisfaction of postgraduate students has not been investigated earlier, and therefore remains a contribution of this research. The complaining behaviour of the students and more importantly the reasons attributed to their reluctance of students to make complaints are also considered as major theoretical contributions of this research.

6.3.1.3. Third hypothesis

The ANOVA testing of the third hypothesis (H3): that *the level of satisfaction of international postgraduate students from Asia varies significantly between countries of origin*, found that the differences between countries of origin were significant. Indian students emerged as a group with significant variances compared to all other student groups. The variances between students from Thailand and Indonesia were not as significant as the other student groups. As discussed in section 5.5.1, these differences were attributed to the diverse cultural, socio-economic and the demographic characteristics of the students and were supported by the variances in the number of students satisfied in each group and group means as shown in table 5.18 and figure 5.3, respectively in the previous chapter.

6.3.1.4. Fourth hypothesis

The fourth hypothesis (H4): that *"the level of satisfaction of international postgraduate students from Asia varies significantly between universities"* was also tested using ANOVA. Significant variances were found in the satisfaction level of students studying in different universities and these results were supported by group-wise means analysis as presented in table 5.25 and figure 5.4.

The results were reported without identifying the universities, using labels A to E. The group-wise means analysis confirmed that students at university D had the

highest overall satisfaction, followed by university C, university E, university A and university B. The difference in the overall satisfaction of students in university C and university D was marginal. University B showed lowest satisfaction level among students. As discussed in section 5.5.4, presence of students from India and Thailand has had a negative impact on the overall satisfaction level of universities. It was also revealed that the larger presence of students from Indonesia and China has had a positive impact on the overall satisfaction level of universities.

6.3.1.5. Hypotheses five to eleven

Seven other hypotheses (H5 to H11) were tested using logistic and linear regression models to determine the probability of satisfaction and the significance of the relationship between students' satisfaction with independent variables; gender, age, marital status, field of study, course level (semesters completed), degree, and source of funding. This analysis was also used to ascertain the direction and the degree of impact of each independent variable on satisfaction. The predictive power of the logistic model was high (represented by a high $\check{R}^2$ value with a percentage prediction of over 70% of the sample) increasing the accuracy of prediction. The results discussed in section 5.5.5, indicated that age, course level and marital status had a strong and positive relationship with satisfaction than other variables highlighting the role of maturity and experience in the satisfaction formation process. For example results supported the probability of older students being more satisfied than younger students, married students than unmarried students, and higher incidences of satisfaction among students who have completed several semesters in the course of study and are nearing the completion of their course.

The group-wise mean analysis confirmed the above findings and also highlighted further features in the sample in relation to the level of satisfaction within the student groups. For example, it was established that there was higher probability of:

- male students being more satisfied than female students (gender influence);
- students following study courses in the fields of Business, Management, Economics, and Computer and Information Sciences, being less satisfied than other disciplines (field of study influence);

- students pursuing higher degrees by research work being more satisfied than course work related postgraduate degrees (course of study influence);

- students self-financing their studies being more dissatisfied than students with scholarships and financial support from employer nominations (source of funding influence).

The influence of cumulative experience on satisfaction, investigated by Sue (2001), and Boulding and Kalra (1993), was found to have a direct relationship with variables like age, marital status and course level in this research. Deux and Major (1987) investigated the effect of gender on satisfaction, and Kwan (1999) examined the effects of the course characteristics on service quality. This research contributes to further understanding of the effects of a number of variables on student satisfaction. Given its focus on a comparative analysis of these variables in relation to postgraduate students from Asia, it makes a significant contribution to the literature on international education.

As illustrated in the preceding discussion, the answer to the main research question: *"Are there differences in the level of customer satisfaction and dissatisfaction (CS/D) between international postgraduate students from Asia studying in Australian universities?"*, was provided by the findings of qualitative and quantitative data analysis supported by hypotheses testing. Figure 4.3, presented the final conceptual model of post-choice satisfaction, which was developed and tested to find the answers to the main research problem and the supplementary research questions investigated in this thesis. The findings indicated that there were differences in the level of satisfaction between the student groups, universities and in respect of the classificatory variables investigated. The variance in the satisfaction levels of students and the universities was substantiated by the impact of cultural and demographic differences in student decision-making behaviour and the differences in the service delivery of respective universities. The final model served to summarise and extend the existing literature in international education and student satisfaction, confirming the new contribution to knowledge in this area of study.

The implications of the research findings for theory and practice are considered in the following section (6.4).

6.4. Implications for marketing theory and practice

One of the major findings of this research was the high expectation of international students entering Australian universities, and as customers of a service supplier, they fully expect, at the very least, satisfactory delivery of the core services. The reality that the universities are facing, given the escalating student expectations about the level of service and the increasing competition among universities to attract more international students, is that any services and added-value feature will not in future achieve competitive differentiation at all − they will be the student's minimum requirements or the cost of universities for being in the business of international education.

There is increasing acceptance in marketing theory and practice that customer satisfaction has no meaning unless the service provider is able to delight and entrance the customer with products, care and service, otherwise there is no differentiation (Piercy, 2000). The problem, however, is that in international education, universities have found it difficult to understand what service creates customer value and delight and even if they do they may be unable to deliver it. This would result in maximising the wrong service and quality (as far as the student is concerned) and delivering these services in an expensive and unproductive manner (as far as the universities are concerned).

This research addresses the core issue of what matters most to international students in Victorian universities, how and why their satisfaction levels differ so that universities are able to devise appropriate service and quality strategies which match the most important needs of their target customers.

6.4.1. Implications for theory

This thesis has implications for theory in terms of filling a gap in research, developing a conceptual model to explain the post-choice satisfaction process of international

postgraduate students, a cross national comparison of post-choice decision making behaviour of students and the use of triangulation methodology to analyse data. These are summarised below.

6.4.1.1. Filling a gap in knowledge

As discussed in section 1.4.1, and outlined in appendices 3 and 4, research on post-choice behaviour of students, compared to pre-choice behaviour, and particularly in regard to student satisfaction, is extremely limited. The focus of past studies on post-choice behaviour was either on a single institution, or undergraduate students with few issues relating to student experiences. This study has contributed to the theory of post-choice behaviour of international students by filling a major gap in knowledge on customer satisfaction and dissatisfaction (CS/D) on the choice of a university as a study destination involving post-graduate student groups.

6.4.1.2. Development of a conceptual model of post-choice satisfaction

The development of a conceptual model (figure 4.3) to explain the satisfaction formation process of postgraduate students has implications for marketing theory and practice in international education. At a conceptual level, the model has contributed to theory in four ways. First, it shows the influence of 28 variables on post-choice satisfaction drawn from past research as well as from qualitative research undertaken for the study. Initially 36 variables were chosen but were reduced to 28 through a data reduction process, resulting in the use of four constructs that have a major impact on the post-choice satisfaction of postgraduate students from Asia. The importance of these constructs in forming CS/D is evaluated in this process. Secondly, it integrates the seminal expectancy disconfirmation paradigm (Oliver, 1980 and 1996), and the difference (gap) scores to measure CS/D (Parasuraman et al, 1991 and 1985). Thirdly, it supplements the weighted average gap scores with ratio scores to capture the relativity of the information presented in the data on a comparative basis. These scores are cross tabulated with theoretical constructs and explanatory variables using univariate and multivariate data analysis methods to determine what matters most to students in terms of service delivery and their impact on satisfaction. Fourthly, it incorporates nine other independent variables, which are tested for their significance and relative importance in influencing student satisfaction.

The model therefore provides a strong theoretical foundation to conduct analysis of CS/D of postgraduate students from Asia from different aspects. This has implications for marketing practice as the model can be used to identify what drives satisfaction among international postgraduate students in order to enhance the attractiveness and competitiveness of Australian universities. This would lead to universities embracing market-led strategic change, which focuses on student satisfaction as a strategy of future survival (Piercy, 2000).

6.4.1.3. Cross national comparison of post-choice decision making behaviour

The comparative analysis undertaken in this thesis on the satisfaction levels of four groups of Asian postgraduate students also has implications for marketing theory in international education. The study dealt with a number of dimensions: country, university, demography, course and funding characteristics to elicit information on the comparative behaviour of students influenced by diverse cultural, economic, social and educational backgrounds. The countries of origin of these students continue to be potential sources of new students for Australian universities, with a surge in student numbers pursuing postgraduate studies. The universities are able to identify the differences between student groups in order to tailor services to address their needs more appropriately. This research has therefore made a contribution towards a better understanding of the drivers of satisfaction of postgraduate students on a comparative basis.

6.4.1.4. Use of triangulation methodology

The use of a combination of research approaches, methods and techniques to overcome any potential bias and sterility of a single method approach has implications for theory and research in international education. This study used both qualitative and quantitative research methods to support the findings. Focus group discussions and depth interviews were the main techniques used in qualitative research, and the complimentary use of ANOVA, logistic and linear regression techniques in data analysis provided the rigour that was necessary in a complex study theme.

6.4.2. Implications for marketing practice

The key findings that would have implications for marketing practice are summarised below.

6.4.2.1. High expectations of international postgraduate students

Rising expectations of university students of quality, service and value for money as students take on a greater share of the burden of the financing of their studies, has been acknowledged in the past literature (Coaldrake, 2001). Universities are unable *'to ignore the changing role of university students, and the transition of the student population from an elite group of submissive patronized apprentices to a large and diverse collection of demanding clients'* (Coaldrake, 2001, p.78). The position with regard to full fee paying international postgraduate students is more complex in that universities need to deal not only with a demanding student population but also with increasingly diverse groups from different cultural, educational, and demographic backgrounds.

This study has found that the high expectations of university services is common among all four groups of students investigated despite minor variations but the perceptions of performance of universities differed substantially between student groups. The qualitative research (focus groups and depth interviews) findings indicated that students had formed their expectations of universities prior to their arrival in Australia. While cultural, social and individual characteristics may have had an impact on the level of students' expectations among various factors influencing choice of a university, it was evident that the information shared with students on the university, course of study and other factors of choice by the university itself, local agents and other representatives has contributed to the formation of high expectations among students. This is supported by the findings of Zeithaml *et al* (1990) that external communications have a direct influence on expectations of service quality. As outlined in section 5.5.2.3, students were highly critical of the guidance provided by overseas agents and representatives. From a students' perspective, overseas agents are an extension of the services provided by the universities to students. Universities, therefore, need to be cautious in raising unrealistic student expectations by promising what the institutions cannot deliver consistently, properly and profitably. A more

coordinated approach with the support of the overseas representatives to deal with the issue need to be devised. Failure to do so would produce dissatisfaction among students.

6.4.2.2. Factors of importance in student satisfaction

The findings of this research on factors of importance in student satisfaction were focused on the quality of education, student facilities, reputation of the institutions, the marketability of their degrees for better career prospects, and the overall customer value provided by the universities. It was revealed that students, in general, were satisfied with teaching quality and the quality of lecturers, but were unhappy with the university support and facilities. This was in concert with the findings of Smith, Morey, and Teece (2002) related to international students who completed a course in 1999. The study found that students were most satisfied with the quality of education offered by their education provider and were least satisfied with the course cost and the cost of living.

The focus on academic excellence is part of the Asian culture and continuous improvement in the delivery of high quality programs, maintaining its reputation as being innovative, up to date and having students' needs at heart are critical for Australian universities to maintain its market share (LeBlanc and Nha, 1997).

Inadequate computer and library facilities featured highly as factors contributing to student dissatisfaction. The major grievance of students was that universities have not improved or updated these facilities in conjunction with the increase in student numbers enrolled in universities. The negative student evaluations of such services have a bearing on the perceived quality of the overall university experience, which should be of concern to university management.

6.4.2.3. Student-teacher relationship

The strength of the student-teacher relationship and the perceived role of lecturers were important findings of this study and could be used to enhance the attraction of Australian universities as study destinations for Asian postgraduate students. Students consider the lecturer's role to be a provider of student support besides teaching in that the guidance and support expected from the teaching staff are not necessarily confined

to academic activities. This is an outcome of the longer hours of student-teacher contact experienced by postgraduate students, particularly in research-based programs. The potential for developing a strong student-teacher partnership in learning, can be harnessed for mutual advantage of universities and students. According to Coaldrake (2001), such relationships can lead to a greater understanding of the responsibilities of each party – students taking responsibility for their own learning articulating their desired goals clearly to the university and the academic staff ensuring that they are responding to students' needs, and discharging their professional responsibilities to keep up to date on educational theory and best practice.

6.4.2.4.   Non academic support

The quality of the university experience beyond the relationship with academic staff was another issue of contention that emerged from this study. The study revealed that the attitude and performance of faculty and administrative personnel in universities have a direct bearing on satisfaction formation of international postgraduate students from Asia. Dealing with university bureaucracy and non-friendly student policies has been part of the student experience with universities. Given the changing role of students and their relationships with universities as customers, clients or stakeholders or in the case of postgraduate students as co-producers of the services provided by the university, the challenge for universities would be to ensure that management and faculty expectations are closely tied to student expectations (Coaldrake, 2001; LeBlanc and Nha, 1997). It is also important for administrative personnel and the management to set quality standards for process-related services of the university such as enrolments, re-enrolments, change of course or subjects which are easier to control than the academic delivery of service (LeBlanc and Nha, 1997). These processes need to be reviewed and improved continuously based on student requirements. As Coaldrake (2001, p.81) sums up, it would be the responsibility of the university *"to recognise that students should be treated with respect, their rights and responsibilities defined and assured, and their needs and expectations at least understood and acknowledged, if not always met"*. A major implication for marketing practice is the greater emphasis on relationship marketing by universities to build trust, confidence and more importantly a collaborative orientation between students and the institutions.

6.4.2.5. Complaining behaviour and student feedback

Section 5.5.2.3 dealt with some concluding remarks on the differences in post-choice decision making behaviour of these student groups. The complaining behaviour of the students was one of the key issues identified to have a strong bearing on administrative policies and strategic directions of universities and this study has found a significant relationship between complaining behaviour and student feedback.

There is wide recognition that the views of students, as important stakeholders in the quality monitoring and assessment processes, should be integrated into management strategic decision-making (Harvey, 2001). It is equally important that the universities provide feedback to students on the action taken with regard to student concerns on a regular basis. This study found that the reluctance of students to lodge any complaint or provide feedback on an issue is because they feel it serves no purpose. This was supported by the findings of the UK Dearing Committee in 1997 where it was reported that fewer than half of the students surveyed were satisfied with the level of feedback they received (Coaldrake, 2001). The real issue for universities, therefore, is not so much about the data collection but what happens to the information after it is collected (Piercy, 2000).

The challenge for Australian universities is not only to continue investment and commitment to student surveys, but also creating an environment where students are prepared to share their views in good faith. This can be achieved when universities adopt formal and informal procedures to deal with student concerns as well as providing feedback to students in relation to the actions taken. Section 5.5.2.3 discussed the benefits of such strategy to students as well as to universities. It is imperative that universities accept student feedback as a source of intelligence of strategic importance to the success of the institutions, and promote a 'student friendly feedback environment' to enhance trust and confidence among students of the feedback process. Both formal and informal processes should be made available to students to provide feedback, but this study has found that informal processes can provide better results with regard to international postgraduate students. Universities are able to leverage on close student-teacher relationships, and maximise the benefits of this process by involving an independent member of teaching staff in each faculty to coordinate verbal responses from students who are reluctant to provide feedback in

a written form. The feedback to students by universities should be part of a formal process.

6.4.2.6. Industry experience

Section 5.5.2.3 discussed the expectations of students in gaining Australian industry experience as part of their postgraduate study outcomes, based on students' comments on this issue as outlined in table 5.22. This was justified on the basis that most of the postgraduate students followed professional courses, and industry experience in Australia however brief, will be of immense value in their professional career in their home country. The findings in the study indicated that this factor had a significant relationship with the overall satisfaction levels of students. From a marketing perspective, this finding serves as valuable input to university strategic planning and curricula development to make postgraduate courses more focussed on students' needs and attractive to prospective students. It will also be an opportunity for universities to develop a point of difference in their course offerings and a competitive advantage.

In summary, the major implications for theory and research included the addressing of an uncharted area of research, the development of a theoretical model depicting the post-choice satisfaction of international postgraduate students, the cross national comparison of post-choice decision making behaviour of students, and the use of a triangulation methodology to analyse data.

The major implications for marketing practice comprised of the outcomes of the findings on high expectations of international postgraduate students, factors of importance to student satisfaction, student-teacher relationship, non-academic support, complaining behaviour and student feedback and the need for industry experience.

6.5. Limitations of the study

Despite the contribution of the thesis to new knowledge in international education and in particular to the area of post-choice satisfaction of international postgraduate students studying in Victoria, the following potential limitations are present.

6.5.1. Timing of the measurement of expectations

The survey instrument used for this study measured both expectations and perceived performance at one point in time, simultaneously with the service experience.

The criticism against this methodology is that the expectations would be biased or contaminated by such experience (Carmon, 1990; Gronroos, 1993; Getty and Thompson, 1994) in that overstating or understating of expectations could occur, if the experience is either positive or negative.

However, several other researchers argue that while pre-purchase (pre-choice) expectation is an essential criterion to validate disconfirmation, familiarity of the service leads to more realistic expectations (Halstead *et al*, 1994; Westbrook and Newman, 1978) and measuring expectations before the service encounter can be problematic. Research conducted in the tourism and hospitality industry, in particular, has indicated that customers are likely to modify expectations during the service experience, and unanticipated encounters during the consumption of service can have an impact on the level of CS/D (Weber, 1997; Danaher and Mattsson, 1994; Gronroos, 1993).

It may also be argued that given the sample included in the study comprised of more than 50% of students in their first six months of university study (Table 5.7), the findings of the study represent a reasonable measurement of the student expectations with a minimum degree of contamination of expectations.

Although there is adequate justification for the methodology followed in the study, future research can be directed to longitudinal studies and to measure student expectations prior to entering an Australian university to provide a comparative benchmark.

Despite its growing popularity, the expectancy-disconfirmation paradigm, which is central to this study, has received some criticism for including expectations as a criterion in measuring satisfaction besides the timing of measuring expectations. The

inclusion of expectations as a measurement criterion was justified on the basis of a validated standard for comparison in this thesis in section 3.2.

6.5.2. Use of cross sectional data

Another aspect to the limitation discussed above is the use of cross-sectional data on different groups of students to measure longitudinal decision-making of their behaviour over time. The variables in the cross sectional design were measured within one time frame, which prevented conclusive inference on causal relationships among variables, particularly the lagged effects across time.

6.5.3. Focus on four student groups and five universities in Victoria

Given this research is directed only on four groups of Asian postgraduate students and five universities in Victoria, the generalisation of findings may be an issue. The major objective of the selection of student groups from China, India, Thailand and Indonesia was to obtain a representative and balanced sample of the Asian postgraduates from the diverse cultures in North, South, East and South East Asia. The selection was also based on the future market potential of these countries in terms of international postgraduate students. Currently, these countries feature among the top ten sources of international students to Australian universities.

The focus on universities in Victoria was aimed at improving the depth of the research within resource and time constraints. The number of the universities included in the study was determined by the participation of the respective universities.

Nevertheless, it is acknowledged that a larger range of students and with more diversified backgrounds can provide even richer results for analysis.

6.5.4. Cultural impact on satisfaction

Cultural background and its implications are very complicated subject matters, which may require greater depth in analysis. Although this research has made an attempt to investigate the cultural impact on satisfaction, the deeper content and impact of

cultural background, educational philosophy and students' attitudes are necessary to provide a better understanding of the satisfaction formation of students.

6.5.5. Imbalance of the sample on discipline area of study

Table 5.5 showed that nearly one third of the sample is comprised of students from the disciplines of Business, Management and Economics (52.3%), and Computer Information Services (23.2%). While it is acknowledged that this distribution was the outcome of the response rates, the imbalance in the distribution of study disciplines may be considered a limiting factor in terms of transferability of findings. However, it may also be argued that this distribution reflects the reality as student statistics confirm that these two disciplines were the most common fields of studies where international postgraduate students were enrolled (AEI, 2000).

The limitations outlined above are useful in identifying future research opportunities and these are discussed in the next section.

6.6.   Implications for future research

Student satisfaction is a key strategic variable that determines the competitive edge of higher educational institutions. How and why satisfaction is formed is a highly complex area of investigation given the known and unknown factors that contribute to satisfaction. The ongoing research continues to look at new variables influencing satisfaction formation, alternative research methodologies and measurement issues that would impact on future research on student satisfaction.

The opportunities for future research include:

(i)   Extending the study to other Asian and non-Asian students

The scope of the study could be extended to include other Asians, non-Asians, as well as students in countries such as USA, UK and Canada, which are major study destinations for international students to test the external validity of the findings and conclusions of this study.

With the selection of the four groups of students based on geographical segmentation this study has made an attempt to generalise the findings for all Asia. However, a better understanding of the variances of the post-choice decision making behaviour among students from different nationalities of students in Asia would be possible with the inclusion of students of other Asian countries in a future study.

Similarly, an investigation into non-Asian students to ascertain the differences in post-choice behaviour of non-Asians compared to Asians will be an important contribution to this area of research. There is very limited information on non-Asian foreign students from Europe and America studying in Australian universities. Student statistics indicate that there is a strong growth in non-Asian students entering Australian universities either as full-fee paying or on exchange scholarships. How the diverse economic, social, cultural, and technological backgrounds of students seeking foreign education affect the satisfaction formation process would be an outcome of such an investigation.

It will also be useful to extend the research to postgraduate students studying in other major international student study destinations like the USA, UK and Canada to compare satisfaction drivers and their impact. This information will be extremely valuable for developing competitive strategies to enhance the attractiveness of respective universities.

(ii)   Extension of study to other universities in Australia

The extension of the study to other universities in Australia is another research opportunity. By focussing on universities in Victoria, it was assumed that the findings could be compared at academic and pedagogical levels with other universities in Australia. This assumption may be invalid if there are vast differences in the governance, policies, curriculum offerings, facilities and the composition of students. Testing the questionnaire in other universities in Victoria as well as in other states could provide additional information.

(iii)   Application of alternative measurement of satisfaction

Application of alternative research methodologies to measure the satisfaction of postgraduate students is another area that deserves inquiry. The present research adopted the expectancy-disconfirmation paradigm and the SERVQUAL instrument to measure student satisfaction. The introduction of ratio scores in addition to the weighted average gap scores was an improvement in the research design and measurement criteria. However, given the ongoing debate on the validity of the methodologies used in satisfaction research and the disagreement among researchers of the measurement criteria, the question as to whether there are any other alternative methodologies available to measure student satisfaction should be the subject of future research.

The above inquiry can be supplemented by the identification of new variables and measurements that could be used to form judgement on the satisfaction of international postgraduate students such as the importance of different skills, attributes for employment and leadership skills. An investigation into other antecedents of satisfaction would also enhance contribution to this area of study.

The research developed four constructs explaining student satisfaction out of which UNISAT2 *(information and guidance)* was relatively insignificant and it was concluded that it could have been due to a masking effect. Some variables within the construct proved to have a strong influence on student satisfaction as confirmed in qualitative research. Moreover, in some studies *information* was considered a very important mediating variable influencing satisfaction. Therefore, further refinement of the measurement scales is recommended to capture additional information on the satisfaction drivers.

A longitudinal study is another area that requires consideration to improve the validity of the findings. This would entail using the same cohort of students in two time periods to measure expectations and perceptions of performance. The cooperation of students is vital for such an exercise.

(iv)   Extension of study to other sectors of the education industry

This research focussed on international postgraduate students, a niche market in the higher education sector that has shown rapid growth. Future research could be directed to determine the applicability of the findings to other sectors of the education industry such as the undergraduate, ELICOS, vocational and high schools.

6.7.   Summary

This chapter presented conclusions on the main findings of the study, the implications for marketing theory and practice and the limitations before suggestions for future research were discussed.

The conclusions of the main findings were preceded by a summary of the different stages of the research, where it was reinforced that the research comprised both qualitative and quantitative elements and a methodology and techniques to provide the rigour that was necessary. It was maintained that the answers to the main research question and the supplementary questions were provided by the findings of qualitative and quantitative data analysis supported by hypotheses testing. The main findings were presented during this discussion.

Filling a gap in knowledge, development of a model of post-choice satisfaction, the cross national comparison of post-choice decision making behaviour and the use of triangulation methodology were identified as implications for theory. The major findings and issues related to high expectations of the student groups, factors of importance to students' satisfaction, student-teacher relationships, non-academic support, complaining behaviour and student feedback and the need for industry experience were highlighted as key implications for marketing practice. The limitations of the study were identified as timing of the measurement of expectations, use of cross-sectional data, focus on four nationalities and five universities, more in-depth analysis of the cultural impact on satisfaction and the imbalance in the distribution of the sample with regard to the study disciplines. Finally, suggestions for future research were presented including the extension of the scope of the research

to incorporate a wider student group, more universities in Australia, alternative methodologies and to cover other sectors in the higher education industry. More longitudinal studies were recommended to improve the validity of the research and the findings.

In conclusion, the thesis addressed the gap in knowledge in the area of post-choice satisfaction of the international postgraduate students studying in Australia. The research methodology followed the seminal expectancy-disconfirmation paradigm (Oliver, 1980 and 1996) and the survey instrument was designed on the basis of the theoretical structure developed by (Parasuraman *et al*, 1985 and 1991). The main research question and the supplementary questions were addressed by means of qualitative and quantitative data analysis supported by hypotheses testing.

The thesis has made a contribution to knowledge by developing a conceptual model of post-choice satisfaction, undertaking a cross national comparison of post-choice decision making behaviour of international postgraduate students, utilising a triangulation methodology to ensure rigour in research and particularly the use of ratio scores in addition to weighted average gap scores to measure satisfaction.

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Appendix. 1

International comparison of student enrolments

Source Country	Australia			United States			United Kingdom			Canada			New Zealand			
	1998	1999	% change 98-99	97/98	98/99	% change 98/99	97/98	98/99	% change 98/99	1998	1999	% change 98/99	96/97	97/98	98/99	% change 98/99
Malaysia	13,637	14,269	4.63	14,597	11,557	-20.8	16,791	12,032	-28.3	1,019	852	-16.3	2,476	2,078	1,575	-24.2
Singapore	13,269	15,546	17.2	3,843	4,030	4.9	5,971	5,617	-5.9	389	361	-7.2	197	182	215	18.1
Hong Kong	11,229	12,781	13.8	9,665	8,735	-9.6	7,208	7,510	4.2	2,699	2,176	-18.6	339	359	397	10.5
Indonesia	6,931	8,088	16.7	13,282	12,142	-8.6	1,085	986	-9.1	383	397	3.6	353	312	397	27.2
India	2,927	3,060	4.5	33,818	37,482	10.8	2,934	3,317	13.1	720	745	3.8	46	54	74	37.0
Thailand	2,417	2,517	4.1	15,090	12,489	-17.2	2,647	2,364	-10.7	184	198	7.6	410	367	390	6.3
China	3,220	4,291	33.3	46,958	51,001	8.6	2,858	3,850	34.7	1,731	2,312	33.6	87	101	467	362.4
Taiwan	2,003	2,279	13.8	30,855	31,043	0.6	3,148	3,481	10.6	647	733	13.3	323	357	376	5.3
Korea (South)	1,586	1,727	8.9	42,890	39,199	-8.6	2,281	2,069	-9.3	745	775	4.3	396	297	362	21.8
Japan	1,589	1,627	2.9	47,073	46,406	-1.4	5,326	5,558	4.4	1,308	1,414	8.8	663	719	760	5.7
European Union	1,718	2,176	26.6	39,810	45,814	15.1	93,083	97,311	4.5	6,748	7,356	9.0	350	399	484	21.3
Other Markets	11,657	14,750	26.5	183,399	191,035	4.2	64,439	69,024	7.1	16,715	18,645	11.5	1,947	1,996	2,320	16.2
TOTAL	72,183	83,111	15.1%	481,280	490,933	2%	207,771	213,119	2.60%	32,905	35,556	8.06%	7,587	7,221	7,817	8.25%

227

Appendix 2

The use of comparison standards in consumer satisfaction

Study	Conceptualisation	Research Method	Measurement Timing
Cardozo 1965	Information gathered from a variety of sources which used as a guideline to evaluate a product	Laboratory experiment	Expectations measured before product exposure
Anderson 1973	Expectations viewed within the context of four psychological theories; never clearly conceptualised.	Laboratory experiment	Expectations measured before product exposure
Olson and Dover 1976	Expectations conceptualised as individual belief elements in a consumer cognitive structure regarding the product; the perceived likelihood that a product possesses a certain characteristics or attribute or will lead to a particular event or outcome.	Longitudinal laboratory experiment	Expectations manipulated before product exposure
Miller 1977	4 types of expectations were defined: The Ideal: what performance "can be" The Expected: What performance "will be" The minimum tolerable: What performance 'must be' The Deserved: What performance 'should be'	NA	NA
LaTour and Peat 1979	Pre-consumption beliefs about the overall performance or attribute levels of a product	NA	NA
Oliver 1980	In general, expectations were conceptualised as the initial standard or reference point against which subsequent judgments are made. Specifically, Oliver followed Olson and Dover's (1976) view.	Field Survey	Expectations measured before product exposure
Swan and Trawick 1981	Pre-purchase beliefs about how a product will perform on important attributes	Field Survey	Expectations measured before product exposure

228

Study	Conceptualisation	Research Method	Measurement Timing
Churchill and Surprenant 1982	Anticipated performance, which is a function of prior consumption experience and information available.	Laboratory experiment	Expectations manipulated before product exposure
Woodruff, Cadotte and Jenkins1983	Experience-based norms replace expectations as standard of comparison. Focal brand expectations were conceptualised as predictions about performance of focal brand. Experience-based norms represent what a focal brand should be able to achieve. Two types of experience –based norms were identified: (1) brand-based norms (when one brand dominates consumer experiences),and(2) product-based norms(when consumers have experience with several brands)	NA	NA
Bearden and Teel 1983	Summation of consumer belief about relevant product attributes	Longitudinal survey	Expectations measured before and after product exposure
Westbrook and Newman 1987	Followed Day's (1977) conceptualisation of the subjective likelihood of receiving product benefits, incurring problems and costs, overall levels of expectation and anticipation	Field surveys	Expectations measured after product exposure
Oliver and Winer 1987	Consumer's subjective evaluations of the value of that attribute at a particular point in time. Value Is a function of1) the evaluation of the subjective level of the attribute and, 2) evaluations of the attribute's.	NA	NA

229

Study	Conceptualisation	Research Method	Measurement Timing
Tse and Wilton 1988	Three comparison Standards were reviewed and tested 1) expected (a product's expected or most likely performance; what "will" be), (2) ideal (optimal performance a consumer can hope for; what "can be") and (3) equity (the performance the consumer ought to or deserves to receive).		
Kennedy and Thirkell 1988	The benefits and costs associated with future product usage; both attribute-specific and overall expectations were identified	Mail survey with follow-up telephone survey	Expectations measured after product exposure
Oliver and DeSarbo 1988	Pre-purchase predictions of product performance characteristics used as a base line for disconfirmation judgments	Laboratory experiment	Expectations manipulated before satisfaction measurement
Anderson and Sullivan 1990	Used Oliver's (1980)definition of expectations: pre-purchase adaption standard used as a base-line for post-purchase evaluations	Telephone Survey	Expectations measured after service exposure
Droge and Halstead 1991	Pre-purchase beliefs or predictions about future performance used as a standard of comparison	Telephone Survey	Expectations measured after product exposure
Zeithaml, Berry, and Parasuraman 1990	Olson and Dover's (1976) definition of product expectations was expanded to include services. Expectations are pre-trial beliefs about a product, which serve as a standard of comparison against which subsequent performance is judged.	Focus group interviews	Expectations assessed in open-ended questions by exploratory focus groups

230

Study	Conceptualisation	Research Method	Measurement Timing
Spreng *et al*, **1996**	Consumer desires were used as the comparison standard rather than expectations. Desires were defined as the attributes, level of attributes, and benefits that consumers believe will lead to higher level values that comprise their life goals and guide their behaviours. Desires congruency is used instead of the traditional disconfirmation of expectations.	Laboratory experiment	Expectations manipulated before product exposure. Desires (benefit levels) measured before product exposure
Gardial *et.al* **1994**	Standards were classified in to seven categories including comparisons to other products, other people, other use experiences, other points in time, internal standards, and marketer supplied expectations.	Personal interviews	Verbalizations elicited after exposure to service.
Gardial et. al 1994	Two broad categories were identified: Pre- and Post purchase standards. Sub categories were then identified as: product category, product type, other brand, same brand, internal, marketer and other standards.	Personal interviews	Retrospective verbalizations elicited (after exposure)
Oliver 1996	Expectations are primarily predictive probabilities or likelihood's of future events or product performance. Multiple expectations exist when you factor in customer "level of desire "which ranges ideal to intolerable.	NA	NA

Appendix. 3

Summary of studies covering factors Influencing choice of destination (Lawley 1998)

Author/Date	Research Design and Data Collection Method	Sampling Strategy	Sample Frame	Sample Size	Response Rate/No.	Factors Identified as Influencing Choice	Limitations of Study
Rao (1979)	Descriptive, Mail Questionnaire, 3 Follow up Letters	Probability	Australia	Over 2000	56%	- Quality of Course - Better Facilities - Easy Admission - Prestige	- Age of Results - Retrospective - Australia Only
Blaug and Woodhall (1981)	Descriptive, Face to Face Interviews	Probability Stratified	14 UK Institutions, 200 Randomly Chosen Students from Each	1484	54%	- 46% had a grant - or Scholarship of Some Type - Superiority of British Qualifications/Courses - Advised by Parents, Relatives or Friends	- Age of Results - Retrospective - UK Perspective only
Radford, Ongkili and Toyoizumi (1984)	Descriptive, Self Completed Questionnaire	Non Probability Convenience	3 Universities in South Australia	147	75%	- Good Environment - Good Climate - Friends and Relatives - Cheaper Cost of Living	- Retrospective - Non Probability Sampling - Australia Only
Goldring (1984)	Descriptive, Mail	Probability Systematic	1 in 6 of All International Students in Australia Selected	2509	72%	- Importance of Sponsorships/Scholarships - Comparative Cost (23%) - Standard of Education (19%) - Proximity (13%) - Presence of Relatives (97%) - Influence of – Friends/Relatives (4%) - Malaysians Students: Quality/Cost More Important - Hong Kong Students: Availability of Work Rights More Important	- Retrospective - Australia Only - Poor Timing of Survey (Exam Period)
Zikopoulus and Barber (1986)	Descriptive, Self Completed Questionnaires	Probability Stratified	Multi Stage Stratified Cluster Design of All Foreign Students in USA	1065	36.2%	- Quality of Education - Friends and Family Most - Influential Source of Information - Agents Least Influential Source of Information	- Retrospective - USA Only
Austin (1988)	Exploratory	Non Probability Convenience	1 Institution in USA	20	20%	- Quality of Courses - Better Information Provided	- Convenience Sample - Retrospective - USA Only

Author/Date	Research Design and Data Collection Method	Sampling Strategy	Sample Frame	Sample Size	Response Rate/No.	Factors Identified as Influencing Choice	Limitations of Study
De Vries and Richter (1988)	Descriptive, Self Completed Questionnaire	Probability Systematic	20 Universities in Canada	1,487	57%	- Quality of Education System - Work Restriction a Major Concern	- Retrospective - Canada Only
Molla and Sedlacek (1989)	Exploratory	Non Probability Convenience	1 Institution in USA	124	Na	- Courses Offered - Influence of Family and Friends	- Convenience Sample - Retrospective - 1 Institution Only - USA Only
Wu (1989)	Descriptive	Probability Random	1 Institution in USA	181	Na	- Reputation - Cost - Employment - Fast Response - Requirements - Scholarship	- Retrospective - 1 Institution Only - USA Only
Bureau of Industry Economics (1989)	Descriptive Personal Interview	Probability Random	Australia	795	Na	- Low Cost Compared to Alternatives - Unavailability of Courses in Home Country - Parents/Relatives - Good Reputation of Faculty - High Standard of Course - Won a Scholarship - Employer	- Retrospective - Limited no. of Factors Considered - Australia Only
Kim and Crowley (1989)	Descriptive Questionnaire	Non Probability Convenience	4 ELICOS Providers in WA	160	Na	- Family, Friends and Agents Most Important Sources of Information - Opportunity to Work and Study - Parents and Relatives - Comparative Cost	- ELICOS Students Only - Retrospective - Non Probability Sample - Australia Only
Steadman and Dagwell (1990)	Descriptive, Self Completed Questionnaire	Non Probability Convenience	5 Queensland Institutions All International Students Surveyed	178	44.7%	- Low Cost - High Standard - Unavailability of Courses at Home - Recommendation of Friend/Family	- Only 8 Factors - Considered With no Indication of How Factors Selected - Retrospective - Australia Only

Author/Date	Research Design and Data Collection Method	Sampling Strategy	Sample Frame	Sample Size	Response Rate/No.	Factors Identified as Influencing Choice	Limitations of Study
Gardiner and Hirst (1990)	Descriptive, Mail Survey	Census	Uni. Of NSW Graduates Who Had Returned Home	200	33.5%	- Australian Qualifications Well Recognised in Home Country - 88% Would Recommend Australia to Other Students	- Retrospective - Australia Only
Industry Commission (1991)	Exploratory Based on Submissions From Interest Groups	Non Probability	Australia	Na	Na	- Geographical Location/Time Difference - English Speaking - Lower Travel Costs - Well Developed Education System - Good Infrastructure - High Level of Personal Safety - Favourable Climate - Availability of Work Rights - Recommendations of Family and Friends	- Based on Submissions Rather than Students - Not Empirically Validated - No Indication of Relative Importance
AGB Australia (1991)	Exploratory Focus Groups of Students and Parents, in Depth Interviews With Gatekeepers	Non Probability Convenience	11 Source Countries	Na	Na	- For Asian Students USA Most - Favoured Destination and Best Reputation - UK Good Reputation - Australia's Reputation is Mixed - Canada Not Seen as a Significant Competitor	- Exploratory Techniques Only - Limited Number of Focus Groups
Purdy (1992)	Descriptive, Mail Survey	Census	All Fee Paying Overseas Students (Higher Education) in Western Australia	3,249	46%	- Proximity - Climate - Better Educational Opportunities - Importance of Private Agents	- Only Eight Possible Factors Identified - No Indication of How Factors Selected
Stewart and Felcetti (1991)	Descriptive, Mail Survey	Na	1 Institution in USA	Na	Na	- Scholarships - Information - Influence of Friends	- Retrospective - USA Only

234

Author/Date	Research Design and Data Collection Method	Sampling Strategy	Sample Frame	Sample Size	Response Rate/No.	Factors Identified as Influencing Choice	Limitations of Study
Hill, Romm and Patterson (1992)	Exploratory, In Depth Interviews	Non Probability Convenience	Students at University of Wollongong	30	Na	- Choose Australia only when they were refused by Other Countries, often due to Visa Problems - Parental Advice - Easier to gain entry to University in Australia - Safety/Climate/Proximity - Reasonable academic standards	- Small Non Representative Sample - Retrospective - Australia Only - Qualitative
Lawley (1993)	Explanatory, Personal Interviews	Probability Systematic	Hong Kong Students Attending a Major Trade Fair	300	86%	- Standard of Courses - Standard of Teaching Facilities - Recognition of Qualifications - Lifestyle - Opinion of Family/Friends	- Trade Fair - One Source Country Only
Cameron (1993)	Exploratory, Mail Survey	Non Probability Convenience	Surveyed Canadian Missions in Source Countries Rather than Students	Less than 20	Na	- Quality of Education - Safe Environment - Lack of Information re: Canadian Education - Shortage of Scholarships - Length of Time to Process Visas - Affordability of Canada	- Convenience Sample - Not Student Survey
Andressen (1993)	Descriptive, Mail Survey	Census	All Private Est. Malaysian Undergraduate Students in South Australia	264	52%	- Cost - Quality of Education - Distance - Climate - Availability of Information	- Retrospective - South Australia Only - One Source Country
Smart and Ang (1993)	Exploratory Discussion and Interviews	Non Probability Convenience	Experts In Source Country	Na	Na	- Emigration - Relatives and Friends - Recognition of Qualification - Cost - Less Important Factors Include Distance and Weather, Clean, Safe Environment	- Exploratory - Qualitative

Author/ Date	Research Design and Data Collection Method	Sampling Strategy	Sample Frame	Sample Size	Response rate/No.	Factors Identified as Influencing Choice	Limitations of Study
Harris and Rhall (1993)	Descriptive, Face to Face Personal Interviews	Probability Stratified	Randomly Selected Institutions (elicos,university, secondary)	1715	93%	- Friends/Relatives Most Important - Source of Advice - Comparative Cost - Recommended by Agent	- Choice of Institution Not Country - Retrospective - Australia Only
Nesdale, Simpkin, Sand, Burke and Fraser (1995)	Descriptive, Mail Questionnaire	Probability Systematic Sample	8 Australian Universities in Three States	2019	48%	- Being a Student in Australia Creates a - Strong Desire to Immigrate Here - Reputation - Family and Friends	- Choice of Institution rather than Country - Australia Only - Retrospective
IDP (1995)	Exploratory, Personal Interviews	Non Probability Convenience	Students at 11 IDP Overseas Offices	1474		- Quality or Reputation of Course - Recognition of Qualification - Lifestyle Factors Including Climate Safety, Environment.	- Respondents Given choice of 7 Reasons only - Sampling Not Representative.
Asia Pacific Access Pty Ltd (1995)	Descriptive, Self Completed Questionnaire	Probability Cluster	Student at 37 ELICOS Centres in Australia	1416	62%	- Personal Safety - Friends or Relatives Living in Australia - Low Cost of Living	- Retrospective - ELICOS Students Only - Australia Only
Mullins, Quintrell and Hancock (1995)	Descriptive, Mail Questionnaire		3 South Australian Universities	436	Approx. 30%	- Reputation - Quality - Recommendation of Friend/Relative	- Choice of Institution not Country - Australia Only - Retrospective
Wilkinson, Mahara and Quester (1996)	Descriptive, Self Completed Questionnaire Explanatory, Self Completed Questionnaire	Not Given	3 South Australian Universities	111	42%	- Good Reputation of Courses - Lower Cost of Living - Safe Place to Live	- Choice of State not Country - Retrospective - Convenience Sample
Mazzarol, Kemp and Savery (1996)	Explanatory, Self Completed Questionnaire	Non Probability Convenience	Indonesia (404), Taiwan (361), Convenience Sample of Schools and Institutions in Each Country	780		- Taiwan: Ease of Obtaining Information re. USA, Recommendations of Parents re. USA, Existing Population of Taiwanese Students - Indonesia: Ease of Obtaining Information re. USA, friends and Family in USA, Lower Cost of Living in USA, Established Population of Indonesian Students in USA	- Covered Four Sectors - Convenience Sample - 2 Source Countries

Author/ Date	Research Design and Data Collection Method	Sampling Strategy	Sample Frame	Sample Size	Response Rate/No.	Factors Identified as Influencing Choice	Limitations of Study
Hattie (1997b)	Explanatory	Non Probability Convenience	6 Universities in the USA – American Students Considering Overseas Study	105		- Australia Preferred Destination to Get Away From Family, Good Climate, See Wildlife, Safe - UK Preferred Destination for Quality of Education and Recognition of Qualification	- Convenience Sample of American Students
Duan (1997)	Explanatory Mail Survey	Census	3 South Australian Universities (Hong Kong, Malaysian Students of Chinese Ethnic Origin)	282	45.2%	- Recognition of Qualification - Comparative Cost	- Retrospective - Australia Only - Student of Chinese Ethnic Origin Only
Lawley and Blight (1997)	Explanatory	Probability and Cluster	Hong Kong (354), Malaysian (277) and Thai (252) Students	883		- 20 Factors	Focus on factors influencing the process while decision making process simplified.
Mazzarol, Soutar, Smart and Choo (2001)	Explanatory Questionnaire, Self Administered	Non Probability Convenience	Eight Cities in China	698	Na	- Reputation and Quality of Study Destination - Availability of Information - Presence of Friends/Relatives - Climate and Lifestyle - Geographic Proximity	- Australia Only - Students of Chinese Origin Only

Summary of studies covering factors influencing post-choice behaviour of students

Author/ Date	Research Design and Data Collection Method	Sampling Strategy	Sample Frame	Sample Size	Response Rate/No.	Factors Identified as Influencing satisfaction/experience	Limitations of Study
Burke (1986)	Explanatory Survey	Non Probability Convenience	Australia	1097	62%	- Adjustment and Orientation - Admissions - Living Conditions - Finance - Academic Quality - Social Activities	- Undergraduate Only - One View Only
Tomovick,Chuck;Jones,Sheila Iskra;Al-Khatib,Jamal;Baradwaj,Babu G (1996)	Explanatory study	Non Probability	USA	282 out of 35 business schools	45%	Service Quality Dimensions of Parasuraman et.al	- Confined to US business schools and students. - No comparison between countries.
Le Blanc, Gaston;Nguyen, Nha (1997)	Exploratory Study	Convenience Sampling	USA	3 Focus groups (32) 388 for main survey	N.a	Service Quality parameters: - Performance of professor - Service system delivery systems - Reputation - Personnel and Administration - Curriculum	- One school only
Pariseau,Susan E, McDaniel, J.R (1997)	Explanatory Study	Convenience Sampling	USA	248 Students and 43 Faculty members	Na	Service Quality Dimensions of Parasuraman et.al	- 2 small schools North - East Region of USA
DETYA (2000)	Explanatory Survey	Convenience Sampling	Australia	1068	45.7%	- Research supervision - Thesis examination process - Faculty/Department Ethos - Intellectual climate - Infrastructure - Skills development	- Research students only
Geall (2000)	Explanatory survey	Convenience Sampling	Hong Kong	800	All	- Personal development - Student interaction - Teaching staff - Teaching methods - Degree programme - Facilities and services	- Undergraduate students only - Convenience sample

Author/ Date	Research Design and Data Collection Method	Sampling Strategy	Sample Frame	Sample Size	Response Rate/No.	Factors Identified as Influencing satisfaction/experience	Limitations of Study
Townley (2001)	Exploratory Study	Four focus groups, Convenience Sampling	United Kingdom	3 groups	n.a	- Computer network - Communication - Academic quality - Resources - Food and accommodation - Culture	- undergraduate only - Focus group only
Smith, Morey and Teece (2002)	Explanatory Survey	Convenience Sampling	Australia	1132	11% of enrolling providers 31% of students	Three dimensions: - education delivery - education support facilities - Living in Australia	- Study of all international students. - No focus on postgraduate university students

239

Appendix. 5.

Exploratory Study: Interview Guide – May 2000

1. Introduction

    - Thank for attendance
    - Brief background to study
    - Opinions are important and there are no right or wrong answers.
    - Permission for recording and assure privacy. No reporting of data with individual identification
    - Ethical considerations. Signing of consent form.

2. How and why you chose Australia and an Australian university as a study destination? Check against the list of variables

3. Reasons for choosing Melbourne?

4. Reasons for choosing the university you are attending now? Importance of the choice variables in the context of current experience.

5. Go through variables identified in earlier research but not already been brought out by respondents.

6. Demographics

    - Sex
    - Age
    - Nationality
    - Course
    - Funding. Private or scholarship?
    - University

7. Additional/closing remarks/Thanks for participation.

Appendix 6.

Questionnaire

WIN
TWO
INTERNATIONAL
AIR TICKETS.

(See accompanying flyer for details)

This questionnaire is intended to identify your experiences as a postgraduate student studying in a university in Victoria, Australia. You are requested to express your opinion on a number of factors you considered important in making your decision to study in a University in Victoria, Australia and whether or not your expectations have been met in regard to these factors. The answers you supply will be treated in the STRICTEST CONFIDENCE and no information gained from this survey will be identified with any particular person. Your ANONYMITY is therefore strictly preserved.

You are requested to place the completed survey inside the REPLY PAID envelope enclosed and mail it within two weeks.

(A) Choice of university as a study destination (Expectations)

> **We would like to find out** your opinion about the features and services of a university that you would choose as a preferred study destination. **Please show the extent that you think such a destination would possess the features and facilities described by each statement below.** If you feel that a feature or a facility is absolutely essential for excellent study destinations, circle 7. If your feelings are less strong, circle one of the numbers in the middle. **There are no right or wrong answers - all we are interested in is a number that truly reflects your feelings regarding study destinations that would deliver excellent quality and value.**

The University of my choice:

		Strongly Disagree					Strongly Agree		
1	*.....would have an efficient enrolment processing system.*	1	2	3	4	5	6	7	NA
2	*.....would have an efficient system to assist with student visas.*	1	2	3	4	5	6	7	NA
3	*.....would have a system to provide recognition for prior learning (Exemptions)*	1	2	3	4	5	6	7	NA
4	*.....would have a good presence of students of my own nationality*	1	2	3	4	5	6	7	NA

(Please Turn Over)

	The university of my choice:	Strongly Disagree						Strongly Agree	
5	.....would have a friendly environment with access to many opportunities for interaction with other student groups.	1	2	3	4	5	6	7	NA
6	.....would have a high image and prestige as a university within Australia.	1	2	3	4	5	6	7	NA
7	.....would have a high image and prestige internationally as a university.	1	2	3	4	5	6	7	NA
8	.....would have a high image and prestige as a university in my home country.	1	2	3	4	5	6	7	NA
9	.....would have academic courses and content appropriate to my needs and aspirations..	1	2	3	4	5	6	7	NA
10	.....would have appropriate academic courses and content recognised in my home country	1	2	3	4	5	6	7	NA
11	.....would have appropriate academic courses with completion times suited to my needs and aspirations.	1	2	3	4	5	6	7	NA
12	.....would have academic courses and training relevant to future job and career prospects.	1	2	3	4	5	6	7	NA
13	.....would have flexible timetables for the courses/subjects	1	2	3	4	5	6	7	NA
14	.....would have competitive fees (compared to other universities)	1	2	3	4	5	6	7	NA
15	.....would have fees that offer good value for money for the services provided	1	2	3	4	5	6	7	NA
16	.....would maintain high standard of teaching with quality lecturers	1	2	3	4	5	6	7	NA
17	.....would have good access to lecturers	1	2	3	4	5	6	7	NA
18	.....would have lecturers providing valuable feedback	1	2	3	4	5	6	7	NA
19	.....would ensure high standard of lecture material available to students	1	2	3	4	5	6	7	NA
20	.....would have appropriate and manageable class sizes	1	2	3	4	5	6	7	NA
21	.....would have modern and adequate library facilities	1	2	3	4	5	6	7	NA
22	.....would have good operating hours for library access	1	2	3	4	5	6	7	NA
23	.....would have modern and adequate computer facilities	1	2	3	4	5	6	7	NA
24	.....would have good access to computer labs	1	2	3	4	5	6	7	NA
25	.....would have a campus well located with easy access	1	2	3	4	5	6	7	NA
26	.....would have student accommodation of a good standard.	1	2	3	4	5	6	7	NA
27	.....would have student accommodation at a reasonable cost	1	2	3	4	5	6	7	NA
28	....would have overseas agents and consultants who provide appropriate information and guidance to students	1	2	3	4	5	6	7	NA
29	.....would have adequate information and guidance available to students through Australian Embassies and other official representatives (eg. IDP)	1	2	3	4	5	6	7	NA

(Please Turn Over)

The university of my choice:

Strongly Disagree — Strongly Agree

30	.....would have adequate information available to students via the internet.	1	2	3	4	5	6	7	NA
31	.....would have adequate information available to students compared to other Australian universities.	1	2	3	4	5	6	7	NA
32	.....would have international student orientation programs as part of student support services.	1	2	3	4	5	6	7	NA
33	.....would have counselling services made available as part of student support services.	1	2	3	4	5	6	7	NA
34	.....would have other social activities as part of student support services.	1	2	3	4	5	6	7	NA
35	.....would encourage close working relationship between students and international student advisers to ensure appropriate solutions to student problems	1	2	3	4	5	6	7	NA
36	.....would have a process to deal with complaints about the adequacy of services and facilities.	1	2	3	4	5	6	7	NA

(A2) Choice of university as study destination (Perceptions).

Now we would like to find out your feelings about the university you attend and to what extent you believe the university you attend has the features and facilities described in each of the following statements. Once again, circling 7 means you strongly agree that the university you attend, has these features and facilities, and circling 1 means that you strongly disagree. **You may circle any of the numbers in the middle that show how strong your feelings are. There are no right or wrong answers. All we are interested in is a number that best shows your perceptions about the university you currently attend.** Please circle NA. if you consider any factor not relevant to you,

The university I have chosen:

Strongly Disagree — Strongly Agree

37	.....has an efficient enrolment processing system.	1	2	3	4	5	6	7	NA
38	.....has an efficient system to assist with student visas.	1	2	3	4	5	6	7	NA
39	.....has a system to provide recognition for prior learning (Exemptions)	1	2	3	4	5	6	7	NA
40	.. .has a good presence of students of my own nationality	1	2	3	4	5	6	7	NA
41	.....has a friendly environment with access to opportunities to interact with other student groups	1	2	3	4	5	6	7	NA
42	.....has a high image and prestige as a university within Australia.	1	2	3	4	5	6	7	NA
43	.....has a high image and prestige internationally as a university.	1	2	3	4	5	6	7	NA
44	.....has a high image and prestige as a university in my home country.	1	2	3	4	5	6	7	NA
45	.....has academic courses and course content appropriate to my needs and aspirations.	1	2	3	4	5	6	7	NA
46	.....has appropriate courses recognised in my home country	1	2	3	4	5	6	7	NA

(Please Turn Over)

The university I have chosen:	Strongly Disagre				Strongly Agree			
47	.....has appropriate courses with completion times suited to my needs and aspirations.	1	2	3	4	5	6	7	NA
48	.....has academic courses and training relevant to my future job and career prospects	1	2	3	4	5	6	7	NA
49	.....has flexible timetables for the courses/subjects	1	2	3	4	5	6	7	NA
50	.....has competitive fees (compared to other Victorian universities)	1	2	3	4	5	6	7	NA
51	.....has fees, that offer good value for money for the services provided	1	2	3	4	5	6	7	NA
52	.....maintains high standard of teaching with quality lecturers	1	2	3	4	5	6	7	NA
53	......provides opportunities to have good access to lecturers	1	2	3	4	5	6	7	NA
54	.....has lecturers providing valuable feedback	1	2	3	4	5	6	7	NA
55	.....provides high standards of lecture material to students	1	2	3	4	5	6	7	NA
56	.....has appropriate and manageable class sizes.	1	2	3	4	5	6	7	NA
57	......has modern and adequate library facilities	1	2	3	4	5	6	7	NA
58	.....has good operating hours for library access	1	2	3	4	5	6	7	NA
59	.....has modern and adequate computer facilities	1	2	3	4	5	6	7	NA
60	.....has good access to computer labs	1	2	3	4	5	6	7	NA
61	.....has a campus well located with easy access	1	2	3	4	5	6	7	NA
62	.....has student accommodation of a good standard.	1	2	3	4	5	6	7	NA
63	...has student accommodation at a reasonable cost	1	2	3	4	5	6	7	NA
64	....has overseas agents and consultants who provide appropriate information and guidance to students	1	2	3	4	5	6	7	NA
65	.....has adequate information available to students through Australian Embassies/other official representatives (eg. IDP)	1	2	3	4	5	6	7	NA
66	.....has adequate information available to students via the internet.	1	2	3	4	5	6	7	NA
67	.....has adequate information available to students compared to other Australian universities.	1	2	3	4	5	6	7	NA
68	.....has international student orientation programs as part of student support services.	1	2	3	4	5	6	7	NA
69	.....has counselling services made available as part of student support services.	1	2	3	4	5	6	7	NA
70	.....has other social activities as part of student support services.	1	2	3	4	5	6	7	NA
71	......encourages close working relationship between students and international student advisers to ensure appropriate solutions to student problems	1	2	3	4	5	6	7	NA
72	.....has a process to deal with complaints about the adequacy of services and facilities, if they occur.	1	2	3	4	5	6	7	NA

(Please Turn Over)

(B) YOUR FINAL COMMENTS (IN YOUR OWN WORDS):

Is there anything that you, as an International student, have found *particularly satisfying or even better than expected* or anything you have found *particularly disappointing* and *that can be changed/improved upon* in regard to the university you attend? These can be academic or any other issue you had experienced as a student.

(a) The most satisfying experience I have had was :

... ...

... ...

... ...

... ...

... ...

... ...

... ...

... ...

The most disappointing experience I have had was:

... ...

... ...

... ...

... ...

... ...

... ...

... ...

... ...

... ...

... ...

... ...

... ...

Please provide basic information about yourself
by *circling the appropriate response*

74 . Your home country is:
1. China/Hong Kong
2. India
3. Indonesia
4. Thailand
5. Other (Please specify)... ... ...

75 . You are   1. Male   2. Female

76 . Your age is between
1. 21-24
2. 25-29
3. 30-34
4. 35 - over

77 . Which university are
you currently enrolled at?
1. Ballarat University
2. Deakin University
3. La Trobe University
4. Melbourne University
5. Monash University
6. RMIT University
7. Swinburne University
8. Victoria University.

78 What is your field
of study?
1. Agriculture
2. Architecture
3. Arts, Humanities and Social Sciences
4. Business, Management and Economics
5. Computer and Information Sciences
6. Education
7. Engineering
8. Health/Nursing/Medicine
9. Law
10. Physical Sciences
11. Other (Please specify)... ... ...

79 . What is the degree you
are studying for?
1. Graduate/Certificate Diploma
2. Masters by course work
3. Masters by research
4. Professional Doctorate
5. PhD

80 . Please circle the number that identifies the of the year and semester of the course you are currently enrolled in.

First year	1. Semester One.	2. Semester Two	3. Semester Three
Second year	4. Semester One	5. Semester Two	6. Semester Three
Third year	7. Semester One	8. Semester Two	9. Semester Three
Fourth year	10. Semester One	11. Semester Two	12. Semester Three
Fifth year	13. Semester One	14. Semester Two	15. Semester Three

81 How do you finance 1. Self funded 2. Scholarship 3. Family 4. Family/Self. 5. Employer 6. Other
your studies?

82 Are you married or Single?   1. Married   2. Single   3. Other/Please specify... ... ...

THANK YOU VERY MUCH FOR YOUR PARTICIPATION IN THE SURVEY.

Appendix 7.

Satisfaction Scores

ID	Average Raw Score	Number satisfied	Arithmetic Average Score	Number satisfied	Geometric Average Score	Number satisfied
	DIFFU	DSU	RAU	RASU	RGU	RGSU
1	5.44	0	0.92	0	0.907	0
2	2.94	0	0.511	0	0.487	0
3	5.75	0	0.967	0	0.964	0
6	5.45	0	0.933	0	0.923	0
11	5.92	0	0.997	0	0.99	0
12	0.75	0	0.25	0	0.239	0
13	6.14	1	1.051	1	1.039	1
14	0.5	0	0.214	0	0.207	0
15	3.31	0	0.752	0	0.628	0
17	4.09	0	0.723	0	0.689	0
19	2.81	0	0.526	0	0.492	0
20	5.97	0	1.015	1	1.007	1
21	4.24	0	0.754	0	0.735	0
22	6	1	1.009	1	1.007	1
25	5.12	0	0.873	0	0.869	0
27	6.14	1	1.03	1	1.028	1
29	4.92	0	0.824	0	0.818	0
30	4.75	0	0.793	0	0.785	0
31	4.11	0	0.701	0	0.691	0
32	3.42	0	0.611	0	0.601	0
33	3.64	0	0.631	0	0.627	0
34	5.44	0	0.92	0	0.901	0
36	3.5	0	0.623	0	0.614	0
37	6.45	1	1.219	1	1.157	1
38	3.97	0	0.699	0	0.684	0
40	6.64	1	1.164	1	1.154	1
41	4.89	0	0.814	0	0.794	0
42	5.51	0	0.94	0	0.929	0
43	3.19	0	0.593	0	0.575	0
44	3.39	0	0.616	0	0.6	0
45	3.89	0	0.66	0	0.623	0
47	4.44	0	0.766	0	0.752	0
48	4.11	0	0.705	0	0.69	0
49	4.67	0	0.788	0	0.779	0
50	5.17	0	0.871	0	0.862	0

51	4.11	0	0.726	0	0.719	0
53	6.19	1	1.048	1	1.044	1
54	3.82	0	0.687	0	0.681	0
55	5.78	0	1.046	1	1.009	1
58	3.86	0	0.694	0	0.689	0
60	5.06	0	0.866	0	0.86	0
63	4.47	0	0.789	0	0.776	0
64	4.44	0	0.774	0	0.761	0
65	5.03	0	0.873	0	0.845	0
66	3.71	0	0.67	0	0.665	0
67	4.77	0	1.177	1	0.899	0
69	6.61	1	1.15	1	1.137	1
70	4.94	0	0.824	0	0.817	0
72	4.72	0	0.809	0	0.803	0
73	3.71	0	0.672	0	0.665	0
74	4.8	0	0.8	0	0.792	0
75	3.69	0	0.668	0	0.663	0
78	4.31	0	0.759	0	0.75	0
80	3.67	0	0.667	0	0.662	0
84	4.42	0	0.754	0	0.748	0
88	4.11	0	0.728	0	0.725	0
91	4.43	0	0.771	0	0.761	0
93	4	0	0.714	0	0.71	0
96	3.91	0	0.701	0	0.697	0
99	3.69	0	0.669	0	0.665	0
104	4	0	0.714	0	0.711	0
105	4.14	0	0.749	0	0.728	0
107	4.83	0	0.829	0	0.826	0
109	4.38	0	0.769	0	0.763	0
110	4.69	0	0.798	0	0.791	0
111	5.19	0	0.867	0	0.859	0
112	2.62	0	0.396	0	0.373	0
113	3.86	0	0.693	0	0.687	0
114	4	0	0.716	0	0.708	0
115	4.03	0	0.718	0	0.714	0
116	3.77	0	0.68	0	0.674	0
117	4.66	0	0.809	0	0.8	0
118	3.7	0	0.67	0	0.666	0
119	4.89	0	0.836	0	0.826	0
120	3.83	0	0.689	0	0.684	0
121	4.14	0	0.731	0	0.729	0
124	3.77	0	0.682	0	0.677	0
130	4.25	0	0.74	0	0.733	0
131	3.57	0	0.653	0	0.649	0
133	3.97	0	0.703	0	0.697	0
134	5.22	0	0.869	0	0.859	0

135	4.22	0	0.746	0	0.74	0
136	6.25	1	1.067	1	1.058	1
137	4.08	0	0.714	0	0.706	0
141	4.53	0	0.786	0	0.78	0
142	3.64	0	0.646	0	0.615	0
143	4.53	0	0.788	0	0.781	0
144	4	0	0.714	0	0.711	0
146	4.03	0	0.701	0	0.696	0
148	3.94	0	0.703	0	0.699	0
151	3.91	0	0.7	0	0.693	0
156	3.94	0	0.703	0	0.695	0
167	5.34	0	0.9	0	0.892	0
170	3.97	0	0.71	0	0.707	0
171	4.11	0	0.722	0	0.713	0
172	5.61	0	1.054	1	0.987	0
174	4.33	0	0.857	0	0.793	0
175	6.47	1	1.162	1	1.15	1
176	4	0	0.714	0	0.708	0
177	4.37	0	0.75	0	0.742	0
178	4.63	0	0.81	0	0.801	0
181	3.89	0	0.666	0	0.639	0
182	4	0	0.711	0	0.705	0
183	5.8	0	0.972	0	0.961	0
184	3.89	0	0.708	0	0.698	0
187	4.42	0	0.775	0	0.766	0
188	5	0	0.849	0	0.841	0
189	5.22	0	0.866	0	0.86	0
190	4.58	0	0.797	0	0.788	0
193	6.37	1	1.126	1	1.109	1
195	4.06	0	0.722	0	0.714	0
196	4.55	0	0.79	0	0.776	0
197	4.61	0	0.796	0	0.79	0
198	4.17	0	0.738	0	0.73	0
200	4.83	0	0.819	0	0.809	0
201	3.63	0	0.661	0	0.655	0
202	4.03	0	0.715	0	0.709	0
205	3.81	0	0.686	0	0.681	0
206	4.56	0	0.793	0	0.786	0
207	3.79	0	0.683	0	0.678	0
208	5.69	0	0.981	0	0.959	0
209	4.69	0	0.799	0	0.789	0
210	4.34	0	0.763	0	0.754	0
213	3.97	0	0.703	0	0.7	0
214	4.47	0	0.79	0	0.766	0
215	6.17	1	1.059	1	1.051	1
219	5.67	0	0.975	0	0.961	0

220	4.61	0	0.798	0	0.791	0
221	4.44	0	0.778	0	0.77	0
224	4	0	0.695	0	0.686	0
225	5.06	0	0.911	0	0.875	0
227	5.36	0	0.91	0	0.906	0
228	4.36	0	0.767	0	0.758	0
230	4.25	0	0.747	0	0.742	0
231	1.03	0	0.242	0	0.234	0
233	4.64	0	0.804	0	0.793	0
234	6	1	1.016	1	1.011	1
237	4.15	0	0.732	0	0.701	0
238	4	0	0.709	0	0.702	0
241	3.53	0	0.635	0	0.596	0
243	6.11	1	1.182	1	1.123	1
244	4.09	0	0.727	0	0.724	0
245	5.81	0	0.985	0	0.974	0
248	4.28	0	0.774	0	0.759	0
249	4.53	0	0.797	0	0.775	0
251	5.77	0	1.048	1	1.003	1
252	5.22	0	0.886	0	0.878	0
253	4.51	0	0.782	0	0.772	0
254	6.09	1	1.03	1	1.025	1
255	3.61	0	0.659	0	0.654	0
256	6.17	1	1.042	1	1.039	1
259	3.62	0	0.655	0	0.65	0
260	5.12	0	0.866	0	0.861	0
261	3.74	0	0.676	0	0.671	0
262	4.76	0	0.95	0	0.864	0
263	2.03	0	0.423	0	0.392	0
264	5.67	0	1.06	1	0.993	0
265	5.06	0	0.862	0	0.849	0
266	4.06	0	0.722	0	0.718	0
268	6	1	1.015	1	1.001	1
270	6.58	1	1.14	1	1.125	1
271	3.58	0	0.651	0	0.597	0
273	5.46	0	0.911	0	0.892	0
275	3.97	0	0.701	0	0.699	0
279	5.81	0	0.969	0	0.961	0
280	3.77	0	0.674	0	0.637	0
281	5.63	0	0.948	0	0.944	0
282	3.69	0	0.659	0	0.649	0
283	6.06	1	1.01	1	1.009	1
284	3.94	0	0.708	0	0.702	0
286	4.06	0	0.72	0	0.716	0
290	5.19	0	0.878	0	0.874	0
291	6	1	1.013	1	1.01	1

293	4.76	0	0.809	0	0.793	0
294	5.91	0	1.012	1	1	0
295	5.81	0	1.035	1	1	1
298	5.86	0	1.003	1	0.993	0
299	3.72	0	0.672	0	0.656	0
301	5.28	0	0.893	0	0.89	0
302	5.44	0	0.919	0	0.916	0
305	3.5	0	0.655	0	0.623	0
306	4.38	0	0.754	0	0.745	0
307	4.17	0	0.723	0	0.713	0
308	4.03	0	0.711	0	0.69	0
309	4.92	0	0.833	0	0.825	0
310	4.94	0	0.804	0	0.784	0
312	5.92	0	1.021	1	1.005	1
320	4.06	0	0.704	0	0.7	0
321	3.81	0	0.681	0	0.678	0
323	6.08	1	1.063	1	1.045	1
324	5.44	0	0.938	0	0.926	0
325	4.78	0	0.821	0	0.816	0
326	3.53	0	0.642	0	0.636	0
327	4.31	0	0.739	0	0.734	0
328	4.97	0	0.859	0	0.855	0
329	3.43	0	0.618	0	0.585	0
330	4.25	0	0.726	0	0.702	0
331	5.89	0	0.984	0	0.978	0
332	5.75	0	0.958	0	0.956	0
333	4.44	0	0.752	0	0.747	0
334	1.57	0	0.36	0	0.34	0
337	5.06	0	0.865	0	0.858	0
338	4.14	0	0.701	0	0.695	0
340	6.28	1	1.187	1	1.107	1
341	5	0	0.864	0	0.849	0
342	5.28	0	0.898	0	0.893	0
343	4.86	0	0.837	0	0.835	0
344	3.42	0	0.618	0	0.597	0
346	3.36	0	0.558	0	0.545	0
348	6.06	1	1.14	1	1.061	1
349	4.97	0	0.903	0	0.854	0
350	5.14	0	0.874	0	0.87	0
351	5.47	0	0.929	0	0.924	0
353	5.53	0	0.972	0	0.953	0
354	3.22	0	0.584	0	0.528	0
357	4.89	0	0.836	0	0.826	0
358	4.62	0	0.785	0	0.775	0
359	4.45	0	0.77	0	0.758	0
360	4.42	0	0.752	0	0.74	0

362	6.24	1	1.05	1	1.047	1
364	5.22	0	0.892	0	0.872	0
365	4.86	0	0.84	0	0.836	0
367	5.5	0	0.965	0	0.933	0
368	6.03	1	1.04	1	1.027	1
369	4.67	0	0.822	0	0.796	0
370	5.94	0	1.022	1	1.006	1
372	2.97	0	0.554	0	0.526	0
373	4.33	0	0.755	0	0.749	0
374	5.31	0	0.906	0	0.898	0
375	6.19	1	1.147	1	1.105	1
376	5.58	0	1.156	1	1.058	1
378	6.11	1	1.019	1	1.018	1
380	5.61	0	0.946	0	0.932	0
383	3.23	0	0.585	0	0.552	0
384	4.53	0	0.79	0	0.771	0
385	5.25	0	0.889	0	0.885	0
387	6.06	1	1.038	1	1.028	1
388	5.94	0	1.007	1	1.001	1
389	5.74	0	0.966	0	0.96	0
390	4.94	0	0.849	0	0.825	0
392	4.75	0	0.904	0	0.803	0
393	5.66	0	1.075	1	0.999	0
395	4.94	0	0.906	0	0.848	0
397	4.64	0	0.92	0	0.776	0
398	5.39	0	0.916	0	0.908	0
399	5.75	0	0.995	0	0.976	0
402	5.69	0	0.957	0	0.953	0
403	4.17	0	0.713	0	0.705	0
405	6.19	1	1.054	1	1.043	1
406	4.03	0	0.649	0	0.609	0
407	3.83	0	0.687	0	0.677	0
409	3.89	0	0.63	0	0.591	0
410	3.89	0	0.63	0	0.591	0
412	5.81	0	0.987	0	0.971	0
413	4.42	0	0.679	0	0.67	0
414	5.89	0	0.99	0	0.985	0
415	5.94	0	1.003	1	0.997	0
416	6	1	1	1	1	1
417	6.31	1	1.238	1	1.167	1
418	4.33	0	0.766	0	0.741	0
420	6.11	1	1.082	1	1.049	1
421	1.94	0	0.409	0	0.397	0
422	5.64	0	1.211	1	1.038	1
423	6.03	1	1.029	1	1.022	1
424	7.12	1	1.379	1	1.282	1

425	6.34	1	1.121	1	1.104	1
426	5.69	0	0.96	0	0.928	0
427	5.83	0	1.061	1	1.011	1
428	5.46	0	0.972	0	0.917	0
429	6.22	1	1.143	1	1.104	1
430	6.72	1	1.433	1	1.329	1
431	5.72	0	1.035	1	0.997	0
432	6.69	1	1.512	1	1.346	1
433	7.11	1	1.403	1	1.321	1
434	3.19	0	0.532	0	0.522	0
435	3.72	0	0.643	0	0.63	0
436	7.03	1	1.486	1	1.35	1
437	6	1	1.005	1	1.003	1
438	6.03	1	1.071	1	1.038	1
439	6.06	1	1.009	1	1.009	1
440	6	1	1.021	1	1.011	1
441	6.22	1	1.048	1	1.043	1
442	6.25	1	1.056	1	1.049	1
443	5.44	0	0.914	0	0.907	0
444	6.03	1	1.09	1	1.055	1
445	6	1	1.028	1	1.021	1
446	5.06	0	0.866	0	0.856	0
447	6.08	1	1.014	1	1.013	1
448	6.08	1	1.021	1	1.018	1
449	6.31	1	1.068	1	1.062	1
450	6.19	1	1.095	1	1.069	1
451	5.92	0	0.997	0	0.992	0
453	6	1	1.005	1	1.003	1
454	6.21	1	1.82	1	1.352	1
455	4.78	0	0.847	0	0.82	0
456	5.69	0	0.958	0	0.945	0
457	4.83	0	0.83	0	0.826	0
458	5.5	0	0.923	0	0.911	0
459	6.08	1	1.025	1	1.021	1
460	5.89	0	0.994	0	0.988	0
462	4.56	0	0.794	0	0.789	0
464	5.42	0	0.891	0	0.887	0
465	6.14	1	1.086	1	1.059	1
466	5.61	0	0.944	0	0.939	0
467	4.36	0	0.862	0	0.786	0
468	6.14	1	1.062	1	1.049	1
470	6.1	1	1.026	1	1.021	1
471	6.35	1	1.142	1	1.107	1
472	4.61	0	0.797	0	0.779	0
476	4.47	0	0.773	0	0.747	0
478	6.06	1	1.031	1	1.019	1

482	6.89	1	1.672	1	1.469	1
484	2.93	0	0.561	0	0.51	0
485	5	0	0.861	0	0.837	0
486	4.58	0	0.934	0	0.794	0
489	4.06	0	0.686	0	0.679	0
490	5.78	0	0.977	0	0.972	0
491	4.42	0	0.765	0	0.758	0
492	5.5	0	0.929	0	0.926	0
493	6.48	1	1.095	1	1.089	1
494	5.4	0	0.919	0	0.897	0
495	6.13	1	1.028	1	1.025	1
497	6.08	1	1.023	1	1.019	1
499	4.31	0	0.716	0	0.701	0
500	6	1	1.13	1	1.082	1
502	6.19	1	1.092	1	1.08	1
503	5.5	0	0.924	0	0.916	0
505	4.79	0	0.839	0	0.818	0
506	5.08	0	0.869	0	0.866	0
507	5.31	0	0.912	0	0.896	0
508	5.78	0	0.976	0	0.972	0
509	5.53	0	0.936	0	0.926	0
510	6.56	1	1.198	1	1.152	1
511	4.61	0	0.777	0	0.768	0
512	5.38	0	0.896	0	0.88	0
513	4.41	0	0.768	0	0.759	0
514	5.6	0	0.954	0	0.945	0
515	3.97	0	0.673	0	0.639	0
516	6.26	1	1.077	1	1.065	1
517	6.17	1	1.051	1	1.04	1
518	5.82	0	0.992	0	0.971	0
519	5.92	0	1.006	1	0.998	0
520	5.47	0	0.967	0	0.937	0
521	4.03	0	0.719	0	0.703	0
522	5.22	0	0.882	0	0.877	0
523	4.08	0	0.727	0	0.703	0
524	6.08	1	1.073	1	1.041	1
525	4.39	0	0.754	0	0.709	0
526	4.86	0	0.832	0	0.806	0
527	6.08	1	1.022	1	1.018	1
528	5.17	0	0.883	0	0.876	0
529	4.39	0	0.85	0	0.78	0
530	4.58	0	0.851	0	0.79	0
531	6	1	1.003	1	1.001	1
532	5.06	0	0.873	0	0.842	0
533	4.9	0	0.837	0	0.827	0
534	5.39	0	0.926	0	0.91	0