INTERNATIONAL STUDENT SATISFACTION WITH UNIVERSITY SERVICES AT VICTORIAN UNIVERSITIES

This thesis is submitted in fulfillment of the requirement for the degree of

DOCTOR OF PHILOSOPHY

By

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ABSTRACT

International student enrolments make a vital economic contribution to the Australian economy. Because of the importance of international students to the economy, a number of studies have emerged examining the subject of international students in Australia in relation to their living experiences, attitudes and behaviour. In spite of this, very few studies have examined international students' overall satisfaction with their university experience.

This study therefore examines international students' satisfaction with six service factors in Victorian universities. This study also examines student satisfaction as an antecedent of behavioural intentions and how different student characteristics moderate the relationship between overall satisfaction and behavioural intentions (e.g. intention to spread positive word of mouth about their university to others, intention to re-enrol with their university and willingness to recommend their university to others).

An online survey was distributed to four participating universities. Structural equation modeling (SEM) and multiple regression were employed to analyse the main research questions, whilst descriptive analysis and inferential analysis were employed to analyse the subsidiary research questions.

The results from the SEM analysis revealed that overall student satisfaction is influenced by the level of satisfaction with academic services, courses offered, access (i.e. the accessibility to campus buildings and facilities, library operating hours and the various clubs and societies for students) and augmented services. In contrast, administrative services and physical evidence were found to have a non-significant impact on overall satisfaction. Analysis also revealed a strong relationship between overall satisfaction and behavioural intentions. The results from the multiple regression analysis show that the various student characteristics under study (e.g. gender, nationality and education level) do not moderate the relationship between students' overall satisfaction and behavioural intentions.

This thesis concludes by discussing the various contributions made by this study to both academics and practitioners. It also details several recommendations for future research and for attracting and retaining international students to Australian universities.

DECLARATION

This thesis contains no material that has been accepted for the award of any other degree or diploma in any university or other institution, and the best of my knowledge, contains no material previously published or written by another person, except where due reference is made in the text of this thesis.

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Signed: ………………………………………………

Siti Falindah Padlee

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For my beloved husband and children

Kamalruzaman Ahmad

Siti Nuha Amni Kamalruzaman

Kafeel Ehan Kamalruzaman

CHAPTER 1
INTRODUCTION

"Superior service delivery to meet students' needs and expectations, and to maintain student satisfaction and loyalty towards study destination, has become a key objective of universities"

Arambewela & Hall (2009, p.556)

1.1 INTRODUCTION

This chapter begins with the research background of the study. It is then followed by a brief discussion of the research problem. The aims, objectives, hypotheses, research questions and research methodology of the study are also discussed in this chapter. The last three sections comprise the scope of the study, research limitations and general outline of the thesis.

1.2 RESEARCH BACKGROUND

The education sector has the capacity to stimulate national economic growth (Becket & Brookes, 2008) through increasing international student enrolments. The international student market plays a very important role for Australian higher educational institutions (HEIs) in generating revenue for the higher education sector (Arambewela, Hall, & Zuhair, 2005). Due to their financial worth to the Australian economy, the Federal Government invests billions of dollars each year to help ensure that the nation's educational providers continue to satisfy the needs of international students (Becket &

Brookes, 2008). In so doing, the goal is for Australian HEIs to gain a competitive advantage over other international HEIs by providing outstanding services to international students and monitoring their educational experiences at Australian universities (Edwards, 2008).

Recognising that international education serves as this nation's largest service-export industry (Department of Foreign Affairs and Trade (DFAT), 2009), the Australian Government declared international education a strategic priority and introduced various strategies to attract and retain international students (Department of Education Employment and Workplace Relations (DEEWR), 2009a). For example, via the campaign 'Study in Australia 2010', the government invested $3.5 million to further develop key feeder markets such as China, India and South Korea, with the intention of ensuring Australia remains a widely recognised and highly regarded 'first choice' destination for international students (Department of Education Employment and Workplace Relations (DEEWR), 2009a).

It has been well documented that international student fees contribute to Commonwealth, State and Territory revenues (Universities Australia (UNIAUST), 2009b). Due to their significant contribution to the Australian economy (Telford & Masson, 2005), Australian universities have taken various actions to ensure they continue to provide high quality services to their international students (Cuthbert, 1996a). Such action is indicative of the recognition on the part of the University sector that in order to attract and retain international students, the satisfaction of their needs must stand as the centre-piece of any marketing strategy. The logic behind such recognition is straightforward: students serve as primary consumers of university services (Hill, 1995) in that students are the direct recipients of the services they provide (Brochado, 2009; Douglas, Douglas, & Barnes, 2006). Developing satisfied 'customers' amongst international students should therefore be a primary goal of higher education (Petruzzellis, D'Uggento, & Romanazzi, 2006; Seymour, 1993). Therefore if Australia is to gain a sustainable competitive advantage in what is a very competitive industry, it is crucial that its HEIs develop a thorough understanding of the university services that have the greatest impact on student satisfaction (Harvey & Green, 1993; Lawson, 1992; Parasuraman, Berry, & Zeithmal, 1988; Yeo, 2008a).

In an industry where services are generally homogenous in nature, it is important for universities to develop strategies to differentiate their services from others (DeShields, Kara, & Kaynak, 2005). One way to do this is to ascertain the key determinants of student satisfaction so as to help universities prioritise the services they offer for the purpose of resource allocation (Douglas, et al., 2006). This approach suggests that there is value in monitoring the importance of services and examining student satisfaction with these services (Garver, 2009). In the context of the competitive Australian higher education sector, further research into identifying the services most important to international students and their levels of satisfaction with these services, would provide indicators that could better guide the efforts of Australian universities in developing their service offerings and differentiating their position in the international market place. Moreover, research must go beyond merely identifying the determinants of student satisfaction to also include how such an attitude impacts upon student behaviours such as positive word-of-mouth, personal recommendations and re-enrolment, because it is this that ultimately determines a university's growth and profitability (Matzler, Würtele, & Renzl, 2006).

1.3 GENERAL RESEARCH STATEMENT AND JUSTIFICATION FOR THE RESEARCH

The general research problem to be addressed in this research is:

What are the key determinants of student satisfaction amongst international students studying at Australian universities?

1.3.1 Research of International Students

Due to its significant contribution to the Australian economy, the international student sector now serves as a strategic priority for the Federal government. Moreover, international students serve as a vital revenue stream for Australian universities. In order to provide the necessary knowledge to allow both government and HEIs to achieve their strategic goals, a number of studies have been undertaken to gain insight into the attitudes and behaviour of international students in an Australian context. Surprisingly however, very few of these have focused specifically on international student satisfaction (Brown & Mazzarol, 2009; IDP Education Australia (IDP), 2009a; Universities Australia (UNIAUST), 2009e). Those studies that have, typically included a focus on international student satisfaction in regards to non-educational services (Arambewela & Hall, 2009; Arambewela, et al., 2005), meaning there is a distinct lack of empirical research relating specifically to international student satisfaction with university services.

1.3.2 Satisfaction of International Students

The measurement of international student satisfaction is a critically important issue. Of the few studies that *have* focused on international student satisfaction, most can be placed into one of two categories:

- Those studies that focused on both expectations and satisfaction (e.g. Appleton-Knapp & Krentler, 2006; Arambewela, et al., 2005; Athiyaman, 1997; Halstead, Hartman, & Schmidt, 1994).
- Those studies that focused on student satisfaction (e.g. Arambewela & Hall, 2009; Douglas, et al., 2006; Elliot & Healy, 2001; Navarro, Iglesias, & Torres, 2005), but did so in the context of local students rather than their international counterparts (Arambewela & Hall, 2009; Arambewela, et al., 2005).

This study seeks to address this research gap by adopting a pure focus on satisfaction and doing so in the context of international students studying in Australia. Moreover, this study not only focuses on the antecedents of satisfaction, but also its outcomes. This approach is important because the positive contribution made by international students is not only dependent on their satisfaction, but their willingness to re-enrol at their institution and recommend it to others (Qin & Prybutok, 2009). For example, students that exhibit a high degree of loyalty, have been found upon graduation to promote their university to others (Ehigie & Taylor, 2009). This study therefore differentiates itself from many of its predecessors via its focus on satisfaction outcomes.

The international student market is characterised by a diversity that naturally stems from its various and differing demographic profiles (Cubillo, Sanchez, & Cervino, 2006). In order to succeed in such a heterogeneous market, universities must naturally consider adopting a highly differentiated and segmented approach (Arambewela & Hall, 2009; Elliot & Shin, 2002). Hence, HEIs may have to customise their services in response to the differing needs that result from the various student characteristics that typify this market (Australian Education International (AEI), 2008; Shank, Walker, & Hayes, 1995).

These issues have guided the development of the current study which seeks to explore the relationship between international students' satisfaction with the various factors of university service and their overall satisfaction with their university. In addition, this study also investigates the relationship between the overall satisfaction of international students and such behavioural intentions as preparedness to spread positive word of mouth, to recommend their university to others, and their own re-enrolment intentions. This study also addresses the moderating effects of student characteristics on the relationship between overall satisfaction and behavioural intentions. The study will provide a valid and reliable model of the relationships between these aspects of the international student experience and their potential impact in the international student marketplace.

1.4 AIM OF THIS STUDY

The aim of this study is to investigate international student satisfaction with the services provided by Australian universities. International student satisfaction is measured in relation to the key factors of university service. This study also aims to investigate how student satisfaction with university services influences their overall satisfaction with their university. Furthermore, this study attempts to investigate the consequences of international student satisfaction in reflecting their behavioural intentions. In addition, the investigation is extended to assess the relationship between international students' overall satisfaction and their behavioural intentions, by examining how different international student characteristics (i.e. nationality, gender and education level) moderate this relationship.

1.5 OBJECTIVES OF THIS STUDY

The main objectives of this study are:

1. To identify how the individual factors of university service influence international students overall satisfaction with their university.
2. To determine the influence of overall satisfaction on international students' behavioural intentions towards their university.
3. To explore the moderating effects of student characteristics on the relationship between overall satisfaction and behavioural intentions.

In addition, this study also attempts to satisfy the following subsidiary objectives:

1. To determine international students' level of satisfaction with the individual factors of university service.
2. To determine international students level of overall satisfaction with their university.
3. To determine the impact of overall satisfaction on:
   - Positive word of mouth,
   - Recommendations, and
   - Re-enrolment.

4. To determine how student characteristics influences their satisfaction with the various factors of university service.

1.6 RESEARCH QUESTIONS

In regards to achieve the objectives of this study, the following research questions were developed and also divided into two categories; the main questions and the subsidiary questions. The research questions were as follows:

1.6.1 The Main Research Questions:

1. To what extent does student satisfaction with the individual factors of university service influence their overall satisfaction with their university?
2. How does international students' overall satisfaction with their university influence their behavioural intentions?
3. Do student characteristics moderate the relationship between overall satisfaction and behavioural intentions?

1.6.2 The Subsidiary Research Questions:

1. How satisfied are international students with each of the individual factors of university service?
2. What is the overall satisfaction level of international students with their university?
3. What is the impact of international students' overall satisfaction on their willingness to re-enrol with their university, spread positive word of mouth about it, and recommend it to others?
4. How does each of the specific elements of student characteristics (i.e. nationality, gender and education level) influence international students' satisfaction with the individual factors of university service?

1.7 HYPOTHESES OF THIS STUDY

The following hypotheses were developed in order to answer the main research questions of this study:

Main Research Question 1

H1*:* International student satisfaction with:

H1a Academic service positively influences overall satisfaction with a university.

H1b Access positively influences overall satisfaction with a university.

H1c Administrative service positively influences overall satisfaction with a university.

H1d Augmented service positively influences overall satisfaction with a university.

H1e Physical evidence positively influences overall satisfaction with a university.

H1f Courses offered positively influence overall satisfaction with a university.

Main Research Question 2

H2: International students' overall satisfaction with their university positively influences their behavioural intentions.

Main Research Question 3

H3: Student characteristics will have a significant moderating effect on the relationship between overall satisfaction and behavioural intentions.

1.8 RESEARCH METHODOLOGY SUMMARY

This section summarises the research methodology adopted in this study. A detailed discussion of the research methodology is provided in Chapter 3.

1.8.1 Theoretical Development

The development of the theoretical framework was based on an extensive review of literature relating to the constructs of satisfaction and behavioural intentions in the context of university students. It was via this review that the six key factors of university service were identified.

1.8.2 Operationalisation of the Constructs

The review of literature also served the purpose of identifying the measures that would ultimately be used to operationalise each construct. Existing scales with high reliability and validity from previous studies were adopted and, where indicated via the results of pre-testing, modified to suit the research objectives of this study.

1.8.3 Unit of Analysis

The unit of analysis for this study was full time international students studying at Victorian universities.

1.8.4 Data Analysis

The methods of analysis employed in this study included descriptive analysis (means and standard deviation), inferential analysis (t-test, ANOVA and correlations), confirmatory factor analysis (CFA), multiple regression and structural equation modeling (SEM). Data was analysed using SPSS PASW 18 and AMOS 18.

1.9 SCOPE OF THE STUDY

International students – both under-graduate and post-graduate – studying at Victorian universities served as the sample for this study. Victoria was chosen as the geographic sampling frame because as a state it is the largest education provider for international students in Australia (IDP Education Australia (IDP), 2009a). Moreover, as the focus of this study is on satisfaction, rather than expectations *and* satisfaction, its scope is limited to the post-enrolment experience rather than the pre-enrolment *and* post-enrolment experience.

1.10 RESEARCH LIMITATIONS

This study focuses on international students studying at Victorian universities. Of the nine universities in Victoria, only four agreed to participate in this study. This therefore has important implications not only for the generalisability of the study as it relates to Australian international students, but Victorian ones as well. Another potential limitation is the inclusion of post-graduate students in the sample. Had any of these students attained their degree with the same university, it could bias the results in relation to the overall satisfaction level reported. Unfortunately, the need to test for any such incidence was overlooked in the questionnaire design. However, while this serves as a limitation, it is not overly significant given that the focus of the study is on identifying the determinants of satisfaction, rather than the level of satisfaction per se. Analysis of the sample also revealed another potential limitation. Whereas the gender split across Australian universities is 51% male and 49% female (Australian Education International (AEI), 2011), the gender split across the sample was 43.5% male and 56.5% female, thereby indicating that males in this sample are slightly under-represented relative to the population.

1.11 OUTLINE OF THE THESIS

The outline for this thesis is organised as follows:

Chapter 1

This chapter serves as an introduction to the thesis, providing both the background and general overview of the study. It includes the problem statement of the study, the research questions, the objectives of the study, and the scope, limitations and framework of the study.

Chapter 2

Chapter two comprises two key sub-sections:

- Section 1 provides a general overview of the international student market in Australia.
- Section 2 outlines the specific criteria necessary for Australian HEI to succeed in the international tertiary market; namely a focus on student satisfaction and the elements of university service that serve as antecedents to it.

Section 1

This section provides an overview of the international student market in Australia. The review begins by discussing the importance of the international student market to the Australian economy. Such economic benefits naturally create intense competition from international HEIs which in turn has encouraged universities to view international students as 'customers' and adopt a marketing orientation. This section concludes by reviewing previous studies of international students in Australia.

Section 2

Section 2 discusses the key constructs of this study, namely satisfaction and behavioural intentions. It begins by reviewing previous studies on satisfaction in the HEI and the factors that contribute to international student satisfaction with university service. This is followed by a review of behavioural intentions in general, and more specifically student intentions as they relate to willingness to re-enrol, spread positive word of mouth about a university, and to recommend it to others. Because satisfaction and behavioural intentions could be influenced by nationality, gender and education level, student characteristics are also covered in this section. The chapter concludes with a theoretical framework and hypotheses depicting the relationships between the key constructs of this study.

Chapter 3

This chapter outlines the research methodology employed in this study. This includes describing the research design and the subjects involved in the study. It also includes a discussion of ethics, data coding, editing and analysis, and a brief description of respondents' profiles.

Chapter 4

Chapter four discusses the operationalisation of the constructs used in this study. It also provides a detailed description of the methods of analysis used to determine the reliability and validity of the measurement instrument.

Chapter 5

Chapter five provides the results and discussion of the main and subsidiary research objectives of the study. Each of the methods used in analysing the data were ultimately determined by the research questions. Such methods included descriptive analysis, inferential analysis and multivariate analysis. Descriptive analyses included mean scores and standard deviations while inferential analysis included T-tests, ANOVA and correlations. Multivariate analyses included SEM and multiple regression.

Chapter 6

Chapter six serves as the conclusion to this thesis. It includes a discussion of the key contributions of this study as well as recommendations for marketing applications and future research.

1.12 CHAPTER CONCLUSION

This chapter presented an overview of the thesis, outlining the background to the research, the research problem, the research questions and their associated hypotheses as well as the theoretical framework. The importance of the research was also discussed as was the scope and structure of the thesis. Chapter two reviews the literature relating to the significance of the international student sector and the university services that potentially serve as the key determinants of student satisfaction.

CHAPTER 2

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 INTRODUCTION

This chapter presents the review of literature for this study. The chapter is divided into two sections: the first provides an overview of international tertiary study in Australia while the second discusses the constructs that serve as the focus of this study. The first section begins by identifying the benefits of international students to a nation such as Australia. This discussion revolves around the economic contribution of international students, the ability of the Australian tertiary sector to compete in such an intense global industry, the notion of international students as customers and the financial contribution they make to Australian higher educational institutions (HEIs). The first section also reviews research undertaken to understand the attitudes and behaviour of international students in Australia.

The second section discusses the key constructs of this study. These key constructs include student satisfaction, student behavioural intentions and student characteristics. This section begins by discussing the main theme of this study - satisfaction - and doing so in the context of higher education. This is then followed by a discussion of those aspects of university service that have the potential to influence international student satisfaction. The next discussion focuses on behavioural intention, specifically on re-enrolment, positive word of mouth and willingness to recommend a university to others. Discussion then switches to student characteristics and the potential influence of nationality, gender and education on satisfaction. This chapter then concludes by summarising the relationship between each of the key constructs employed in this study into a theoretical framework.

SECTION 1: OVERVIEW OF THE NATURE OF INTERNATIONAL TERTIARY STUDY IN AUSTRALIA

2.2 INTERNATIONAL STUDENT MARKET IN AUSTRALIA

The international student market is characterised by its rapid growth and is expected to grow in size to 7 million students by 2025 (Ayoubi & Al-Habaibeh, 2006; Mazzarol & Soutar, 2008). Two of the key reasons why international students choose to study overseas is to obtain internationally recognised qualifications and to experience life overseas (Mazzarol & Soutar, 2008). Since the early 1980, the increased mobility of international students has caused a huge surge in the number of students wanting to enrol with a foreign university. In response, major tertiary education providers such as the US and the UK have proactively sought to benefit from the international student market (Cheung, Yuen, Yuen, & Cheng, 2010). Recognising its vast economic potential, Australian tertiary institutions have also sought to gain a foothold in this market (Mazzarol & Soutar, 2008).

The first significant involvement of Australian HEI in the international student market occurred after the implementation of the Colombo Plan 1949-1957 (Universities Australia (UNIAUST), 2009e). This plan led to the provision of a foreign aid scheme under which international students were sponsored to study in HEI. Under this plan, the Australian Government provided financial aid to international students while at the same time providing the opportunity to experience life and culture in Australia. In 1984, as a result of the Jackson Reports (Kumar, 2005), the strategic focus of HEI shifted from educational aid to educational trade (Universities Australia (UNIAUST), 2009e). With the implementation of the Jackson Reports in 1984, the total number of international students studying in Australia grew from 63,000 in 1993 (Mazzarol & Hosie, 1996) to approximately 190,000 by 2008 (Australian Education International (AEI), 2008).

There were several reasons behind HEI strategic change in focus from *aid to trade*. These include the economic value of the international student market, the ability of Australian HEI to compete effectively against international competitors, and the recognition of international students as customers (Mazzarol & Hosie, 1996; Mazzarol, 1998; Mazzarol & Soutar, 2008). Each of these reasons is discussed in greater detail in the sections that follow.

2.2.1 Economic Benefit

The presence of international students in a country provides both economic and non-economic benefits (Knight, 2004). Non-economic benefits include collaboration between two countries, and a transferring of cultures (Wende, 2001; Woolf, 2002). In other words, the presence of international students can bring “tolerance, respect and an appreciation of diversity” (Woolf, 2002, p.6). However, in spite of their non-economic contributions, it is the economic benefits provided by international students that are widely regarded as their most significant contribution to the host nation (Andrade, 2006; Lee, 2010; Naidoo, 2007). In fact, such is the economic value of the international student market, that it serves as Australia’s third largest source of foreign income behind the export of coal and metal ore (Mazzarol & Soutar, 2008).

The economic contribution from international students is also widespread, providing benefits to Australia at a national level, university level and even to local business. In terms of their economic contribution at a national level, it is estimated that international students contribute more than $11 billion in export earnings to the Australian economy (Australian Bureau of Statistics (ABS), 2007). At the university level, international student fees serve as a major revenue source for Australian universities (as cited in Deumert, Marginson, Nyland, Ramia, & Sawir, 2005). International student spending on food, accommodation, travel and entertainment also makes an important economic contribution to local business (Yao & Bai, 2008), serving as both a vital revenue stream and an important stimulus for employment. As an example of the latter, the international student market is credited with creating 122,000 jobs in Australia (Access Economies (AE), 2009). In summary, due to its potential economic and non-economic benefits, there is a driving need to develop a thorough understanding of the international student market in order to maximise the benefits it offers.

2.2.2 Australia's Strength in this Industry

Due to the potential benefits offered by the international student market, intense competition has emerged between international tertiary service providers, particularly those from the US, Europe and Australia. The intensity of such competition has magnified further still with the recognition and subsequent market entry of new competitors from such countries as New Zealand, Japan, Hong Kong and Singapore (Cheung, et al., 2010; Tan & Simpson, 2008). In order to effectively compete, Australian HEIs have had to develop and/or emphasise certain strengths. These strengths include:

1. An established reputation for providing quality services to international students, in combination with pro-active and aggressive marketing strategies (Binsardi & Ekwulugo, 2003; Marginson, 2007; Mazzarol & Soutar, 2008).
2. Providing such service at a lower relative cost in terms of living costs (Reid & Loxton, 2004).
3. Being a good educational option for English language practice (Reid & Loxton, 2004).
4. Being perceived as offering international students a superior study destination in the context of safety and security issues (Gomes & Murphy, 2003; Marginson, 2007).

2.2.3 International Students are the Customers of Australian HEIs

As competition increased in the international student market, educational institutions increasingly resorted to promotional efforts in order to attract international students. In response, the mindset of international students evolved from that of being a student to that of being a “customer”. Under this mindset, students regard themselves as the sole judge of the educational service they receive (Berry, Zeithmal, & Parasuraman, 1990). Despite the diversity of customers in higher educational institutions (Siu & Wilson, 1998; Yeo, 2008a), there is widespread consensus that students serve as the primary ‘customer’ for a university (Kanji & Tambi, 1999). This in turn has led to another evolution in the relationship between HEI and students – the need for the former to undertake research on the latter: in this case, into student satisfaction levels with the service they receive (Kelley, Donnelly, & Skinner, 1990).

The need to undertake market research into student satisfaction levels is justified by intense competition on a domestic as well as international level. With an ever-growing number of Australian universities recognising that full fee-paying international students serve as a vital revenue stream (Mazzarol & Soutar, 2008), they now compete just as fiercely against domestic competitors as they do against their international counterparts. In order to gain an advantage over their rivals, HEIs are increasingly undertaking market research in order to understand what international students desire from their institution (Joseph, Yakhou, & Stone, 2005).

2.3 RESEARCH INTO INTERNATIONAL STUDENTS IN AUSTRALIA

The importance of the international student market has naturally generated numerous scholarly studies. The vast majority of these have focused on the attitude and behaviour of international students studying in Australia (e.g. Adams, 2007; Arambewela & Hall, 2009; Arambewela, et al., 2005; Edwards, 2008; Mazzarol & Soutar, 2008; Pimpa, 2005; Ross, Heaney, & Cooper, 2007). The focus of these studies can be further sub-divided into the following research themes:

- Identifying international students' criteria in choosing Australia as their study destination (e.g. Pimpa, 2005);
- Identifying international students' perceptions of Australian HEI (e.g. Mazzarol & Hosie, 1996; Mazzarol, 1998; Mazzarol & Soutar, 2008);
- Identifying the various segments that comprise the international student market in Australia (e.g. Adams, 2007);
- Comparing and contrasting international students with their domestic counterparts (e.g. Forbes-Mewett & Nyland, 2008; Sawir, Marginson, Deumert, & Ramia, 2007).

The ongoing research efforts to better understand the international student market will be vital if Australia is to continue to attract and retain international students. It is this latter objective – the need to not only attract students but also retain them – that appears to have been ignored by many existing studies. Linked to the notion of student retention is the notion of student satisfaction with their university. Although there have been several studies on the satisfaction of international students (Arambewela & Hall, 2009; Arambewela, et al., 2005; Athiyaman, 1997; Mavondo, Tsarenko, & Gabbott, 2004), few such studies have undertaken empirical research into the determinants of international student satisfaction with the services provided by a university. Those that have, have often proffered contradictory findings. Therefore, further research into identifying those aspects of a university that influence international student satisfaction is necessary in order to attract and retain international students to Australian HEIs.

2.4 SECTION SUMMARY

In this section, the justification for undertaking further research into the determinants of international student satisfaction was laid out. These justifications include the economic and non-economic contribution of international students and the subsequent need to identify the means by which Australian HEI can succeed in an industry characterised by intense global competition. In recognising that the path to success lies in adopting a marketing orientation and the resulting recognition of students as customers, a focus on determining the sources of student satisfaction is vital. This is because the key to attracting and retaining international students is to satisfy their needs. Although numerous studies of international students have been undertaken, research specifically on international student satisfaction has received far less attention. Given the importance of such research, this study seeks to redress this knowledge gap. The following section therefore takes an in-depth look at satisfaction. Additionally, it also looks at factors that can either influence (e.g. university service factors and international student characteristics) or be influenced by, satisfaction (e.g. behavioural intentions).

SECTION 2: THE KEY THEMES OF THE STUDY

The key determinant of success in the service industry is naturally the delivery of high quality service (Chakraborty & Majumdar, 2011). Service quality is a critical success factor in any service strategy due to its role in attracting new customers and retaining existing ones. It can also enhance the image of an organisation, as well as have a positive impact on word-of-mouth and profit levels (Ladhari, 2009). This naturally raises the question as to what determines satisfaction with service quality in the university sector.

2.5 SATISFACTION IN THE CONTEXT OF HIGHER EDUCATION

In order to succeed in such a competitive market, universities must make international student satisfaction a key priority (Munteanu, Ceobanu, Bobaˆlcaˇ, & Anton, 2010). However, despite its importance, there is a lack of consensus as to how student satisfaction should be defined (Hill, 1995; Navarro, et al., 2005; Owlia & Aspinwall, 1996; Yeo, 2008a) and therefore measured. One of the earliest efforts to define satisfaction in general came via the expectancy-disconfirmation paradigm (Arambewela, et al., 2005; Halstead, et al., 1994). According to this approach, consumer satisfaction is the affective outcome of a cognitive comparison between the service the consumer expected to receive (e.g. expectations) and the service they actually received (e.g. performance). This process then results in either service expectations being met – referred to as confirmation - or the service failing to meet expectations - referred to as disconfirmation (Churchill & Surprenant, 1982; Ennew, Reed, & Binks, 1993; Oliver, 1981; Ruyter, Bloemer, & Peeters, 1997; Tse & Wilton, 1988; Woodruff, Cadotte, & Jenkins, 1983). Hence, according to the expectancy-disconfirmation paradigm, satisfaction is an attitude that derives from a two-part process comprising not the only service experience but also service expectations.

The expectancy-disconfirmation paradigm was first conceived by Oliver (1980) and has been widely used, or adapted for use, in generic studies of customer satisfaction (Ennew, et al., 1993; Halstead, et al., 1994). The most widely used application of this paradigm is the SERVQUAL scale (SERVQUAL being an acronym for service quality) developed by Parasuraman et al. (1988). For many years SERVQUAL served as the predominant means of measuring satisfaction with service quality. According to the SERVQUAL approach, service satisfaction comprises 22 items spread across 5 dimensions – tangibles, reliability, responsiveness, assurance and empathy (Parasuraman, Zeithmal, & Berry, 1991). In line with its roots in disconfirmation theory, SERVQUAL conceptualises perceptions of service quality as deriving from a comparison between expectations and performance (Brady & Cronin, 2001). Under this approach, the more performance exceeds expectations, the greater the perceived service quality (Ladhari, 2009).

However, SERVQUAL has attracted much criticism and in recent years has fallen out of favour. Such criticism is based on a multitude of factors including:

- In a wide variety of industry contexts SERVQUAL has been found to lack generality (Angell, Heffernan, & Megicks, 2008). Hence studies seeking to utilise SERVQUAL in a university context have had to make significant changes to the instrument in order to try and make it relevant. For example, Soutar and McNeil (1996) found it necessary to extend the original 5-factor SERVQUAL model to 8-factors. And yet even when such adaptations have been made, it has still been found to yield poor reliability (Soutar & McNeil, 1996) and serve as a poor predictor of service satisfaction (Banwet & Datta, 2003).
- SERVQUAL has also been criticised for the fact that the 5 hypothesised factors have often failed to emerge in other studies (Chakraborty & Majumdar, 2011; Coulthard, 2004; Dean, 1999). As such, rather than serving as the generic measure of service quality it was designed to be, SERVQUAL instead should only be regarded as an industry specific measure (Dean, 1999). Most

importantly, the fact that the 5 hypothesised factors do not always emerge under empirical analysis creates serious problems in relation to discriminant validity (Coulthard, 2004).

- Furthermore, there are not only problems with the 5 hypothesised factors, but also the individual scale items they comprise. Such scales have also been found to lack relevance across many industries (Curry & Sinclair, 2002; Dean, 1999). For example, by the time Dean (1999) had finished eliminating irrelevant items from the SERVQUAL scale for her specific industry context, it had been reduced from a 22-item scale to a 15-item one. Such problems signal the fact that the SERVQUAL instrument is also plagued with problems relating to convergent validity and poor reliability (Ladhari, 2009).
- There are also problems relating to the double measurement of the same service attribute in the context of both expectations and performance. This leads to a relatively lengthy survey which in turn can lead to boredom and confusion and subsequently, problems with validity and poor response rates (Coulthard, 2004).
- Numerous studies have also found that performance scores alone serve as better predictors of overall service satisfaction than does measuring both performance ***and*** expectations (Coulthard, 2004). Ladhari (2009) highlighted the flawed assumptions upon which SERVQUAL is based by pointing out that its gap scores (i.e. E-P) do not provide any additional information beyond that already contained in the perceptions component of the SERVQUAL scale. As such, not only does the measurement of expectations create problems with validity and poor response rates, it is also largely redundant.
- Studies have also found it to be a poor predictor of satisfaction with service quality: the very purpose it was designed for (Jain & Gupta, 2004; Ladhari, 2009). Moreover, there are also problems with how to interpret SERVQUAL's gap scores. For example, a performance (P) minus expectations (E) score of -1 when measured on a 7-point scale can be produced in 6 different ways (e.g. P=1

and E=2, P=2 and E=3, P=3 and E=4 etc) with each one implying something different in regards to perceived service quality (Jain & Gupta, 2004).

- Most importantly in the context of this study, SERVQUAL's focus on expectations means that is particularly ill-suited to measuring service quality in a university context. SERVQUAL's performance minus expectations approach rests on the belief that the perceptions students enter a university with continue to influence their assessment of service quality over the duration of their studies. Such an assumption is flawed on two grounds. Firstly, it ignores the fact that consumer perceptions will continue to evolve each time they interact with the service. Secondly, such an assumption is only suited to intermittent service encounters, not the ongoing, longer-term service encounters that characterise a student's service experience with their university (Angell, et al., 2008).
- Linked to the previous point, because a student's expectations continue to evolve each time they utilise a service, such expectations can change without affecting their overall evaluation of the university's performance. As such, expectation serves as a weak predictor of overall satisfaction (Churchill & Surprenant, 1982). This is particularly true in the HEI (Joseph & Joseph, 1997) because students' pre-enrolment expectations have little or no direct effect on their post-enrolment experience (Athiyaman, 1997; Mavondo, et al., 2004).

In an attempt to address these problems Cronin and Taylor (1992) developed SERVPERF. SERVPERF is similar to SERVQUAL in that it comprises the same factors and same scale items. The difference is that whereas SERVQUAL measures performance ***and*** expectations, SERVPERF focuses on just performance so that a higher perceived performance rating implies higher service quality. There is logic to this approach because performance perceptions are already the result of customers' comparison of the expected and actual service, thereby making expectancy measures redundant (Carrillat, Jaramillo, & Mulki, 2007). It is therefore not surprising that studies comparing SERVQUAL and SERVPERF have found the latter to be superior in regards to validity, reliability, methodological soundness and most importantly, its ability to predict the determinants of service satisfaction (Cronin & Taylor 1992; Jain & Gupta, 2004). Subsequently, SERVPERF took over from SERVQUAL as the preferred framework for measuring service quality (Angell et al., 2008).

However, in spite of its advantages relative to SERVQUAL, SERVPERF still suffers from some of the same inherent problems. Its key problem is the lack of relevance of its generic factors and scale items when applied in an industry-specific context. To address this problem in a university context, Abdullah (2006) developed HEdPERF, a scale based on the performance-only premise of SERVPERF, but with scale items developed specifically for a university context. When compared to SERVPERF, HEdPERF has been found to serve as a superior determinant of university service quality (Abdullah, 2006). However, HEdPERF is not without two significant shortcomings of its own.

The first of these stems from the fact that Abdullah (2006) only measured HEdPERF in the context of service quality, and failed to measure its subsequent impact on student satisfaction and behaviour. Via empirical analysis Cronin and Taylor (1992) established that service quality and satisfaction are two different constructs. This is a logical finding given that the former relates to providing the maximum level of perceived service quality while the latter relates to the goal of satisfying consumers via the service itself. As such, customer satisfaction must be measured separately from customer perceptions of service quality. They also found that customer satisfaction mediated the influence of service quality on behavioural intentions and that customer satisfaction is a better predictor of behavioural intentions than service quality. This too is a logical outcome because emotion-based measures (e.g. satisfaction) are often found to serve as better predictors of behavior than cognitive-based measures such as attitudes towards service quality (Cronin & Taylor, 1992).

The second shortcoming associated with the HEdPERF instrument relates to its individual scale items. Empirical analysis revealed significant problems with discriminant validity, with 15 of the 41 university attributes employed loading on two or more factors. As such, neither SERVQUAL, SERVPERF nor HEdPERF serve as an ideal means of measuring service quality in a university context or its subsequent impact on student satisfaction and behaviour. This naturally raises the question, "What are the determinants of student satisfaction with their university"?

2.6 THE DETERMINANTS OF STUDENT SATISFACTION IN A UNIVERSITY CONTEXT

A wide variety of university attributes have been found to influence student satisfaction (Arambewela & Hall, 2009; DeShields, et al., 2005; Gruber, Fuβ, Voss, & Gläser-Zikuda, 2010; Navarro, et al., 2005). Although the influence of these attributes has been well researched, the unique combination of attributes to be utilised in this study has not yet been investigated in the context of international students studying at Australian HEIs.

Before identifying the various attributes that influence student satisfaction, it is first necessary to identify the criteria against which potential attributes were selected for inclusion in this study. Given that a university can essentially be regarded as a service-provider, it naturally stands that in order to be included, attributes must be consistent in nature with a defining characteristic of a service: intangibility. However, there are several scholars that take an alternative view, arguing that the service provided by a university comprises both tangible and intangible elements.

One view holds that a university essentially comprises intangible characteristics thereby qualifying as a pure service provider (Brochado, 2009; Petruzzellis, et al., 2006; Shank, et al., 1995). It does so on the basis that:

- No tangible good is exchanged between university and student;

- The service is produced and consumed simultaneously for each student;
- The service is not storable;
- The student plays an important role in the delivery process (Woodside, Frey, & Daly, 1989).

As such, this view regards higher education as intangible because students cannot 'see' or 'touch' the service they receive. Moreover, service elements are also typically intangible in that they revolve around interaction with humans. Scholars that portray university services in this way do so on the basis that the value students receive is essentially intangible, their satisfaction being dependent upon the following (Banwet & Datta, 2003; Parasuraman, Zeithmal, & Berry, 1994):

- The university's ability to perform dependably and accurately;
- University staff's willingness to help students and provide prompt service;
- The knowledge and courtesy of staff;
- Their ability to inspire trust, confidence and caring;
- The level of individualised attention given to students.

The alternative view holds that while the service provided by a university is essentially intangible (hence the inclusion of *people* and *processes* in the extended marketing mix) tangible elements (e.g. physical evidence) are also required to provide such a service (Kotler, Kotler, & Armstrong, 2010; Oldfield & Baron, 2000). The tangible elements of a service comprise those aspects that are associated with the physical environment where the service is produced and consumed (Parasuraman, Berry, Penney, & Zeithmal, 1993). Focusing on the contribution such elements make to student satisfaction is important because the intangible elements of a service can be difficult for students to evaluate relative to their tangible counterparts (Mavondo & Zaman, 2000). However in spite of this, the need to include tangible attributes as potential determinants of student satisfaction has often been overlooked (Oldfield & Baron, 2000). Such an oversight has potentially serious ramifications because students spend a significant proportion of their service experience utilising the tangible elements of a university (e.g. libraries, IT laboratories, lecture theatres) and so are likely to serve as key influences of satisfaction (Clark & Ramsay, 1990). As such, the list of potential attributes to be included in this study includes both intangible and tangible elements. These elements will be discussed in the sections that follow.

2.6.1 Academic Services

As the title suggests, this factor refers to the academic service provided by a university. In this sense, the responsibility for the provision of such services lies with the interaction with people which include teaching staff and as such it typically refers to such attributes as teaching methods, learning materials, lecturers' interaction with students and consultation opportunities (Abdullah, 2006c; Banwet & Datta, 2003; Doughlas, McClelland, & Davies, 2008; Gatfield, Barker, & Graham, 1999; Koilias, 2005; Navarro, et al., 2005; Telford & Masson, 2005). The important contribution academic service makes to student satisfaction has been confirmed by numerous studies (Abdullah, 2006c; Angell, et al., 2008; Arambewela, et al., 2005; Gamage, Suwanabroma, Ueyama, Hada, & Sekikawa, 2008; Gruber, et al., 2010; Joseph & Joseph, 1997; Leblanc & Nguyen, 1997; Navarro, et al., 2005). A key reason for this is the importance students assign to the academic aspects of their service experience, and the resulting impact that academic attributes have on the image and reputation of a university (Gamage, et al., 2008; Mavondo & Zaman, 2000). This therefore leads to the hypothesis:

H1: International student satisfaction with:

> **H1 (a): Academic service positively influences overall satisfaction with a university.**

2.6.2 Access

Access refers to the extent to which the services provided by a university are conveniently available to students in terms of time and/or place (Arambewela, et al., 2005; Athiyaman, 1997; Telford & Masson, 2005). As such it includes such attributes as the operating hours of a university library (Arambewela, et al., 2005; Petruzzellis, et al., 2006) and ease of access to university buildings and facilities (Sahney & Karunes, 2004). Access should have a potentially significant influence over satisfaction (Diamantis & Benos, 2007; Telford & Masson, 2005) because it directly or indirectly influences the criteria by which a service is typically evaluated by its users (e.g. responsiveness, timeliness etc). In fact one study found that of the various service elements tested, it was access that had the greatest impact on student satisfaction with a university (i.e. Abdullah, 2005). This therefore leads to the following hypothesis:

H1: International student satisfaction with:

H1 (b): Access positively influences overall satisfaction towards a university.

2.6.3 Administrative Services

Administrative services play a vital role in the service provision of a university. In this study, administrative service is defined as the service provided by non-academic staff to students (Abdullah, 2005). As such, it includes such attributes as the attitude of administrative staff towards students (Abdullah, 2006c; Leblanc & Nguyen, 1997; Price, Matzdorf, Smith, & Agahi, 2003), the operating hours of student administration offices (Abdullah, 2006c; Koilias, 2005; Sahney & Karunes, 2004), the speed and precision with which administrative staff responds to student matters (Gamage, et al., 2008; Koilias, 2005; Oldfield & Baron, 2000) and the treatment students of different religions and race receive from administrative staff (Abdullah, 2006c; Leblanc & Nguyen, 1997).

Previous studies have empirically demonstrated that administrative services exert a significant influence over student satisfaction (Gamage, et al., 2008; Mavondo & Zaman, 2000). Such findings lead to the following hypothesis:

H1: International student satisfaction with:

H1(c): Administrative service positively influences overall satisfaction with a university.

2.6.4 Augmented Services

Augmented services refer to those services that serve as potential determinants of student satisfaction but without falling within the scope of a university's core business. Specific examples of attributes used to conceptualise augmented services include the range of food on offer in University cafeterias, the price of that food (Alridge & Rowley, 1998; Joseph & Joseph, 1997; Price, et al., 2003) and the public transport services available to students (Price, et al., 2003). Given that such services are regarded as having a salient influence over the success and competitiveness of a university (Parasuraman, Berry, & Zeithmal, 1985), they are also likely to impact upon student satisfaction (García-Aracil, 2008; Gatfield, et al., 1999; Joseph & Joseph, 1997; Koilias, 2005; Kwan & Ng, 1999; Lagrosen, Seyyed-Hashemi, & Leitner, 2004; Telford & Masson, 2005). This therefore leads to the following hypothesis:

H1: International student satisfaction with:

H1 (d): Augmented service positively influences overall satisfaction with a university.

2.6.5 Physical Evidence

Physical evidence refers to those tangible elements of university service that can be 'seen' and 'touched' by students (Saginova & Belyansky, 2008). It therefore includes such physical elements as the aesthetic design of university buildings (Abdullah, 2006c; Gamage, et al., 2008; Leblanc & Nguyen, 1997) and the extent to which university buildings and grounds are clean (Gamage, et al., 2008; Kwan & Ng, 1999). Physical evidence is important because as the one tangible element of an otherwise intangible offering, it is very influential in shaping the attitudes that students ultimately form towards their university (Gamage, et al., 2008). It has also been empirically identified as an important determinant of student satisfaction (Arambewela & Hall, 2009; Gamage, et al., 2008; Koilias, 2005), particularly in light of the notion that its tangible nature makes it easier for students to evaluate their service experience in this regard (Mavondo & Zaman, 2000). This therefore leads to the following hypothesis:

H1: International student satisfaction with:

H1 (e): Physical evidence positively influences overall satisfaction with a university.

2.6.6 Courses Offered

Courses offered refers to the courses and degrees offered by a university. Given that students typically compare the courses offered by a university against their desired graduate outcomes (e.g. employment in their desired field) it is no surprise that the perceived relevance of these courses serve as a major influence over student satisfaction (Mavondo & Zaman, 2000). For this reason, many universities offer a comprehensive list of courses that are not only interesting but are also directly relevant to the current employment market (Abdullah, 2006c; Browne, Kaldenberg, Browne, & Brown, 1998; Chua, 2004; Joseph, et al., 2005; Koilias, 2005; Soutar & McNeil, 1996). Other attributes that fall within the theme of *courses offered* include courses with specialisation (Ford, Joseph, & Joseph, 1999; Joseph, et al., 2005) and courses offering employable skills (Gamage, et al., 2008; Kwan & Ng, 1999; Soutar & McNeil, 1996). With all of these attributes having been found to affect student satisfaction (Arambewela, et al., 2005; Diamantis & Benos, 2007; Gamage, et al., 2008; Telford & Masson, 2005), it naturally leads to the following hypothesis:

H1: International student satisfaction with:

> **H1(f): Courses offered positively influence overall satisfaction with a university.**

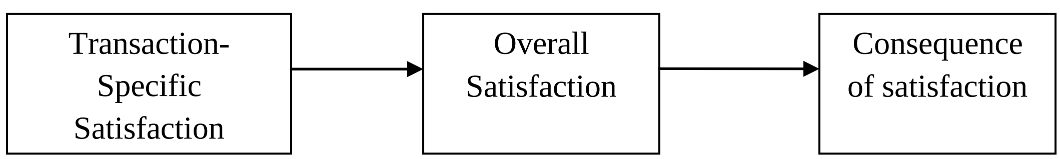
2.7 SERVICE SATISFACTION

Given the afore-mentioned problems with conceptualising and operationalising service satisfaction using the disconfirmation paradigm, this study will adopt the alternative approach - the transaction-specific and overall satisfaction approach to satisfaction (Bitner & Hubbert, 1994; Jones & Suh, 2000; Olsen & Johnson, 2003; Shankar, Smith, & Rangaswamy, 2003). Under this approach service satisfaction is defined in a generic sense as an emotional feeling after consuming a service, which then evolves into an overall attitude toward utilising the service (Hau & Thuy, 2012). This definition can then be extended to a university context so that student satisfaction is defined as a cognitive attitude and emotional feeling resulting from a student's overall evaluation of their experience with the education service they received (Athiyaman, 1997; Elliot & Healy, 2001; Fečiková, 2004; Oliver, 1981, 1996; Woodside, et al., 1989).

Transaction-specific satisfaction refers to a customer's satisfaction based on their post-choice evaluation of a service after a specific consumption experience (Guolla, 1999) and/or a customer's post-choice evaluation of a service based on its specific service attributes (Shankar, et al., 2003). Because this study focuses on on-campus students and such students should be expected to frequently utilise the various services offered by a university, transaction-specific satisfaction is defined in this study in terms of specific service attributes rather than a specific service encounter.

Overall satisfaction is defined as a customer's overall satisfaction with an organisation based on their total encounters and experiences with that organisation (Bitner & Hubbert, 1994; Jones & Suh, 2000; Sureshchandar, Rajendran, & Anantharaman, 2002). The advantage in measuring overall satisfaction is that it offers the ability to predict student intentions and behaviour (Olsen & Johnson, 2003). Overall satisfaction differs from transaction-specific satisfaction in that a student may have a dissatisfying experience with the latter (e.g. waiting in long queues to enrol) and yet still be satisfied with their overall service experience due to satisfying encounters with other specific services. The two constructs also differ in that transaction-specific satisfaction serves as an antecedent of overall satisfaction (Jones & Suh, 2000). This relationship, portrayed in Figure 2.1, serves as the model of satisfaction to be utilised in this study.

Figure 2.1: Model of Two Levels of Satisfaction and its Consequence



Source: Adapted from Jones and Suh (2000)

In accordance with this model, the measurement of satisfaction begins with a focus on *transaction-specific satisfaction*. In the case of this study, these transaction-specific attributes refer to the individual service elements of a university. At the second stage, *overall satisfaction* is postulated as an overall service evaluation based on students' composite attitude towards the various individual service elements. At the third and final stage is the *consequence of satisfaction* – students' behavioural intentions in response to their overall satisfaction. The focus of the literature review will now move to the first of these three stages: *transaction-specific satisfaction* and the factors that comprise university service.

2.8 BEHAVIOURAL INTENTION (CONSEQUENCES OF SATISFACTION)

The behavioural intentions of its customers should be a primary concern to an organisation (Ibrahim & Najjar, 2008; Malhotra & McCort, 2001). Behavioural intentions refer to an individual's conscious decision to exert effort to carry out a particular behaviour (Eagly & Chaiken, 1993 in Goode & Harris, 2007, p.513 ; Hsu, Huang, & Swanson, 2010). In order to properly define this construct, it is also necessary to identify whether behavioural intention refers to an attitude or behaviour. When a person holds a positive attitude toward an attitude object, they will also possess the intention to behave in a way towards that object that is consistent with their positive attitude (Fishbein & Ajzen, 1975). Furthermore, the more favorable a person's attitude is toward a behaviour, the more likely they are to perform that behaviour (Ajzen & Fishbein, 1980). Hence, attitude and intention compliment and correspond with each other (Ajzen & Fishbein, 1980) in a way that ultimately leads to behavioural intention (Sheth & Mittal, 2004). In line with this view, this study conceptualises intention as behaviour rather than an attitude.

The importance of gaining insight into students behavioural intentions lies in their direct link to retaining and attracting prospective students (Navarro, et al., 2005) and ultimately ensuring survival in an ever increasingly competitive market place (Bontis, Booker, & Serenko, 2007). In the specific case of a university, key behavioral outcomes of satisfaction would be expected to include positive word of mouth (Alves & Raposo, 2007; Arambewela, et al., 2005; Athiyaman, 1997), the intention to re-enrol (Alves & Raposo, 2007; Arambewela, et al., 2005) and willingness to recommend their university to others (Appleton-Knapp & Krentler, 2006; Browne, et al., 1998; Mavondo, et al., 2004). However, in spite of this recognition, academic interest has often ignored the need to include positive word of mouth. This study, therefore makes an additional contribution to new knowledge by operationalising the behavioral consequences of student satisfaction as a single dimension (Landhari, 2009) comprising all three potential behavioural outcomes of student satisfaction. Each of these intentions is discussed in greater detail in the sections that follow.

2.8.1 Positive Word of Mouth

Word of mouth refers to the process of personal influence, in which interpersonal communications between a sender and a receiver serve to influence the receiver's attitude or behaviour (Merton, 1968 as cited in Sweeney et al., 2008). It has also been described as an informal type of communication between private parties concerning the evaluation of services (Dicter, 1966 as cited in Saha & Theingi, 2009). While there are others factors capable of generating positive word of mouth – such as advertising for example (Bansal & Voyer, 2000; Gremler, Gwinner, & Brown, 2001) – there is little doubt that a major determinant of such positivity is the creation of satisfied customers. As such, a university should be concerned with all those aspects of its service provision that influence student satisfaction, as this in turn is likely to determine the extent to which students spread positive word of mouth about their experience to other potential students.

Positive word of mouth is an important form of communication for any organisation. This is especially true in the case of a service provider because their intangible nature makes it difficult to assess quality prior to consumption, thereby creating an element of risk (Molinari, Abratt, & Dion, 2008). However such risk can be reduced if the service is recommended by a trusted friend, colleague or family member (Gremler, et al., 2001; Molinari, et al., 2008) who in already having consumed the service, serves as an experienced source of information (Bansal & Voyer, 2000). The importance of positive word of mouth also stems from its ability to reduce the cost of attracting new customers, in enhancing the firm's overall reputation (Anderson, Fornell, & Rust, 1997) and in helping generate higher revenues (Molinari, et al., 2008). For these reasons, positive word of mouth is regarded as one of the most important determinants of organizational success (Bansal & Voyer, 2000).

Given its importance, it naturally follows that universities must also strive to generate positive of word of mouth from current and past students to prospective students (Navarro, et al., 2005). Students who are satisfied with the service they receive from their university do in fact relay their positive experiences with their university to prospective students (Russell, 2005). Due to the largely intangible nature of university services, prospective students are likely to utilise word of mouth as a major information source when choosing their educational institution (Elliot & Healy, 2001).

2.8.2 Recommendation Intention

The willingness to recommend refers to the readiness of an existing customer to communicate their endorsement of the service provider to others for reasons that are not linked to monetary gain (Høst & Knie-Anderson, 2004; p.31). Willingness to recommend a service provider differs from positive word of mouth, in that the former involves going one step further and being prepared to act as an 'ambassador' for that organisation (Heskett, Jones, Loveman, Sasser, & Schlesinger, 1994; Høst & Knie-Anderson, 2004). Willingness to recommend is not only considered to be an outcome of satisfaction; it is also considered an indicator of customers attraction towards an organisation (Parasuraman, et al., 1988; Zeithmal, Berry, & Parasuraman, 1996).

Due to the nature of the service provided by a university, recommendation plays an important role in guiding students' ultimate choice of university. Students that are satisfied with their university experience have in fact been found to recommend their university to friends and family (Appleton-Knapp & Krentler, 2006; Banwet & Datta, 2003; Browne, et al., 1998). Hence, because recommendations made by past and current students serve as such an important communication and information source for prospective students, it serves as an important variable of interest to this study.

2.8.3 Re-enrolment Intention

Studies have shown that when a customer is satisfied with the service they have received, they are likely to continue using that service in the future (Casaló, Flavián, & Guinalíu, 2008; Nilsson & Olsen, 1995). As such, the re-patronage of a service can be regarded as customer loyalty commitment (Oliver, 1996; Selnes, 1993) while satisfaction can be regarded as an antecedent to loyalty (Bennet & Thiele, 2004). In the context of the HEI, re-patronage is referred to as re-enrolment. In this context, re-enrolment intention refers to the ability of an institution to retain its existing students (Helgesen & Nesset, 2007) and upon graduating, for existing students to return and take other courses offered by the same university (Banwet & Datta, 2003; Navarro, et al., 2005). The underlying objective of any university should be to both attract *and* retain students. Re-enrolment intention therefore serves as an essential means for operationalising student retention.

2.8.4 The Relationship between Behavioural Intention and Overall Satisfaction

Numerous empirical studies have identified a positive link between overall satisfaction and behavioural intentions across a wide variety of service industries (Anderson & Mittal, 2000; Ibrahim & Najjar, 2008; Szymanski & Henard, 2001). Satisfaction is therefore regarded as a significant determinant of behavioural intentions (Bearden & Teel, 1983; Ibrahim & Najjar, 2008). This positive relationship also exists between overall satisfaction and the individual measures of behavioral intention. For example, overall satisfaction has been found to be positively correlated with re-patronage intention (Anderson & Sullivan, 1993; Cronin & Taylor, 1992; Mittal & Kamakura, 2001; Molinari, et al., 2008; Patterson, Johnson, & Spreng, 1997). Similarly, studies have identified a strong correlation between overall satisfaction and positive word of mouth behaviour (Casaló, et al., 2008; Makarem, Mudambi, & Podoshen, 2009). There is also empirical support for the notion that as overall customer satisfaction increases, so too does customers' willingness to recommend the service provider to others (Namkung & Jang, 2007; Zeithmal, et al., 1996).

These generic findings have also been replicated in the specific context of HEIs. For example, several studies have confirmed that overall student satisfaction and behavioural intentions are closely linked (see Alves & Raposo, 2007; Athiyaman, 1997; Navarro, et al., 2005). Yet in spite of this, no study has yet to investigate this relationship in the context of international students studying at Australian HEIs. Therefore, it is vital to determine the nature of the relationship between international students' overall satisfaction and their behavioural intentions. On the basis of the preceding discussion, the following hypothesis is proposed:

H2: International students' overall satisfaction with their university positively influences their behavioural intentions.

2.9 STUDENT CHARACTERISTICS

International students cannot be regarded as a homogenous segment. In addition to differences due to nationality (Hanassab, 2006), the attitudes and behavior of international students may also vary according to gender and level of education. This diversity of backgrounds may have the potential to influence both their level of satisfaction with their university and their behavioural intentions. Hence it is important that any measure of student satisfaction take into account the possible effects of these moderating variables.

The findings from this area of the research will allow universities to better segment their market and to provide services better meeting international students' specific needs, thereby facilitating more effective student retention strategies (Walsh, Evanschitzky, & Wunderlich, 2008). This study therefore examines the moderating effects of student characteristics on satisfaction levels and behavioral outcomes. In so doing, it addresses an important research gap so often overlooked in previous studies (Walsh, et al., 2008). The following discussion provides deeper insight into the potential influence of each of the variables used to operationalise student characteristics.

2.9.1 Nationality

Within the context of higher educational institutions, the effect of nationality on student satisfaction has not been adequately addressed (Einarson & Matier, 2005; Umbach & Porter, 2002). This is ironic given that those few studies that have included a focus on country of origin have found that students of different nationalities evaluate university services differently (Ford, et al., 1999; Lagrosen, et al., 2004). For example, students from China have been found to assign greater importance to study-related matters, and are therefore more concerned with academic factors than other nationalities. Conversely, students from the United States are more interested in campus life, and therefore assign greater importance to student support services (Kwan & Ng, 1999). In another study, Japanese and Thai students reported differing levels of satisfaction with all three factors under investigation - academic services, non-academic services and facilities (Gamage, et al., 2008).

As such, nationality has the potential to influence international students' level of satisfaction with their university (Jayawardena, 2001). By including this variable in this study, the resulting research will help universities to better customise their service offerings to the various nationalities of the students they serve, thereby creating the potential for higher satisfaction and retention levels.

2.9.2 Gender

For the purposes of this study, gender refers to the biological sex of an individual (Hoyer & MacInnis, 2010). Researchers consider it necessary to include gender in most studies involving demographic variables because males and females are widely regarded as possessing unique personalities and characteristics (Testa & Mueller, 2009). However the inclusion of gender has not always been the case with most studies relating to student satisfaction with their university. Again this is ironic given that those studies that have included a focus on gender have reported gender-based differences. For example, female students have been found to place greater emphasis than their male counterparts on the physical and location aspects of a university (Joseph, et al., 2005). Given the potential for satisfaction to differ according to gender and the fact that this demographic variable has been often overlooked, this study seeks to remedy this oversight by investigating the impact of gender on the satisfaction levels of international students.

2.9.3 Education Level

Education has the potential to influence several aspects of human life (Baker, Al-Gahtani, & Hubona, 2007) including our attitude and behaviour (Metle, 2003). As the term suggests, education level refers to the level of education of a university student (e.g. bachelor, masters or doctorate degree). Studies that have investigated the impact of this variable have found that education level does influence student attitudes in that postgraduate students differ from their undergraduate counterparts in terms of satisfaction with their university experience (Taylor, 2002). This study therefore investigates how different levels of education impact upon international students satisfaction with their university experience.

2.9.4 The Moderating Effect

While there is empirical support for the notion that student characteristics such as nationality, gender and education level influence student satisfaction (Baker, et al., 2007;

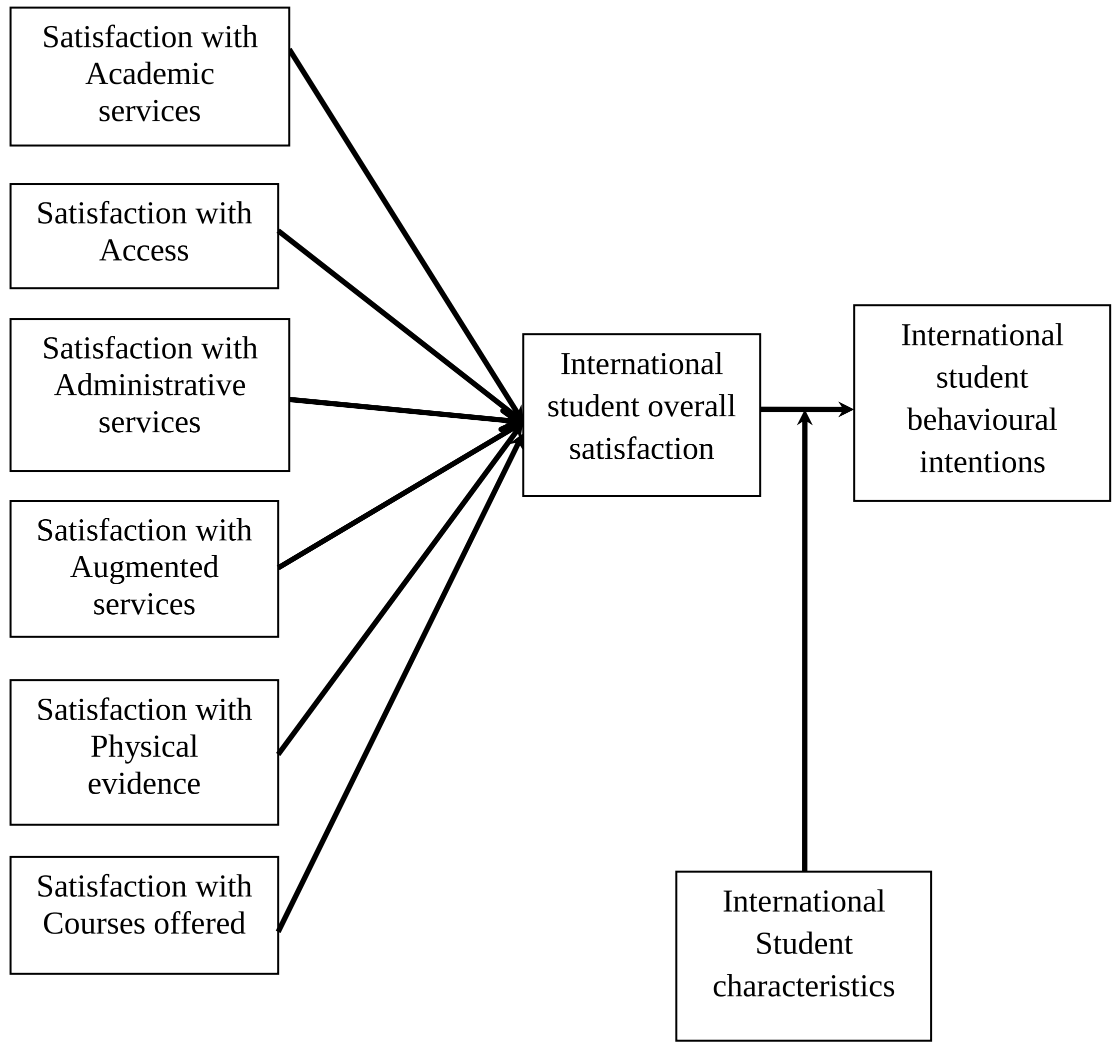
Dash, Bruning, & Guin, 2009; Narayan & Krosnick, 1996; Sawyerr, Strauss, & Yan, 2005; Walsh, et al., 2008), the need to investigate the link between student characteristics and the relationship between overall satisfaction and behavioural intentions has been largely ignored (Walsh, et al., 2008). The few studies that have focused on this relationship reported that gender and education level have a strong moderating effect on the relationship between satisfaction and behavioural intentions (Homburg & Giering, 2001; Mittal & Kamakura, 2001). However, no study has yet to focus on the link between nationality and the relationship between overall satisfaction and behavioural intentions. Therefore, this study proposes the following hypothesis:

H3: Student characteristics (i.e. nationality, gender and education level) will have a significant moderating effect on the relationship between overall satisfaction and behavioural intentions.

2.10 THEORETICAL FRAMEWORK OF THIS STUDY

On the basis of the preceding discussion it is possible to construct a theoretical framework depicting the relationship between each of the key constructs under investigation in this study (Figure 2.2). As per this framework, two levels of satisfaction are investigated: transaction-specific satisfaction and overall satisfaction. It is proposed that satisfaction with university service is determined by six service elements – academic, administrative, courses offered, access, physical evidence and augmented. The individual satisfaction levels with each of these six elements of university service determine overall satisfaction. It is proposed that overall satisfaction in turn then influences behavioural intentions. Finally, the effect of international student characteristics serves to moderate the relationship between overall satisfaction and behavioural intentions.

Figure 2.2: Proposed Theoretical Framework for this Study



As per the theoretical framework, there are three key relationships of interest that will dominate the focus of this study. The first of these relationships is between transaction-specific satisfaction and overall satisfaction, whereby the six elements of university service serve as independent variables and overall satisfaction as the dependent variable. The second relationship is between overall satisfaction and behavioural intention. In this case, overall satisfaction serves as the independent variable and behavioural intention as the dependent variable. The third relationship of interest is the moderating influence of international student characteristics (i.e. nationality, gender and education level) on the relationship between overall satisfaction and behavioural intentions. The purpose of this phase of the study is to examine to what extent student characteristic moderate the third relationship of interest – that between overall satisfaction and behavioural intentions.

2.11 CHAPTER CONCLUSION

This chapter has discussed the nature of international tertiary study in Australia, its importance and the various approaches taken to gain greater insight into the unique peculiarities of the HEI. One such approach involves seeking to attract (via word of mouth and willingness to recommend) and retain (via re-enrolment intention) students via a focus on satisfaction. The six individual elements of university service that influence satisfaction - academic, administrative, courses offered, access, augmented and physical evidence – were then identified and discussed. Based on the notion of transaction-specific satisfaction, student satisfaction ratings of each of these six elements combine to determine students' overall satisfaction. This construct in turn then influences a student's behavioural propensity to re-enrol with their university, to say positive things about their university to others and to recommend it to others. Hypotheses were then developed for the various relationships between each of these identified constructs, and a visual depiction provided via the construction of a theoretical framework. The next chapter discusses the methodology used in this study to analyse each of these hypotheses.

CHAPTER 3
RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter provides an overall view of how this study was implemented and outlines the research process utilised to achieve its objectives. The research process for this study was divided into three stages: stage I, stage II and stage III.

Stage I outlines the role and importance played by preliminary data in this study. For the purpose of this study, a comprehensive preliminary data collection was carried out via a review of literature.

Stage II discusses the research design of the study. Discussion at this stage focuses on the sampling process, questionnaire design, the response rate and ethical issues.

Stage III discusses the implementation of the study, encompassing the topics of pre-testing, survey administration and data analysis.

The overall purpose of this chapter is to outline each stage of the research process undertaken to ensure that the objectives of the study were properly satisfied.

3.2 THE RESEARCH PROCESS OF THIS STUDY

The research process utilised for this study (see Figure 3.1) utilised a three-stage process (Aaker, Kumar, & Day, 2007; Hair, Babin, Money, & Samouel, 2003). The three steps in this three-stage process are as follows:

1. Preliminary planning stage (**Stage 1**)
2. Research design (**Stage II**)
3. Implementation (**Stage III**)

Figure 3.1: The Research Process of this Study

Stage I: Preliminary planning stage

(1) Preliminary data collection
Literature survey - Review of related studies and identification of key variables
(2) Development of research objectives, conceptual framework and hypotheses

Stage II: Research Design: The quantitative research design

(1) Sampling Process
(2) Questionnaire Design
(3) Scaling
(4) Ethical issues
(5) Response Rate

Stage III: Implementation

(1) Pre-testing
(2) Data Collection
(3) Data Analysis

3.3 STAGE I: PRELIMINARY DATA COLLECTION

Stage 1 involved gathering secondary data via a review of literature. The literature review served as a key form of data collection for this study because it provided preliminary insight into the perceptions, attitudes and behaviours of students (Sekaran, 2003). It also assisted in the identification and development of relevant constructs and hypotheses – all of which are essential to a quantitative study.

3.3.1 Literature Review

Secondary data is data that already exists and has been previously collected and reported (Quee, 1999). There are many advantages in utilising secondary data (Aaker, et al., 2007) such as the ease with which it can be collected and the resource-savings that come via avoiding the duplication of existing studies. One of the foremost methods for collecting secondary data is the literature review (Sekaran, 2003).

For the purpose of this study, the review of literature included a wide variety of sources including books, journals, conference proceedings, doctoral dissertations and government publications. These various sources provided important insight into relevant research variables, potential research designs, and the reliability and validity of existing measures for operationalising the key constructs of this study. The review of literature also identified the knowledge gaps that serve as the research objectives for this study. As this study employed a quantitative approach, it was also essential that the review provide the necessary secondary data that would ultimately shape its theoretical framework and hypotheses (Creswell, 2005, p.46).

3.4 STAGE II: RESEARCH DESIGN

A quantitative research design was adopted for this study. Whilst there were several reasons for this, all revolved around the notion that the objectives of this study were consistent with the defining characteristics of the quantitative method. For example, the quantitative method is characterised by the conceptualisation and operationalisation of constructs, and their subsequent use to measure, collect and analyse data via the use of hypotheses, larger samples and statistical analysis (Creswell, 2005, 2008; Hair, et al., 2003); all of which are characteristics that align with the objectives of this study.

In order to satisfy the research objectives, it was necessary to collect and analyse primary data. However, it was first necessary to undertake a review of literature in order to identify the variables of interest to this study (Malhotra, Hall, Shaw, & Oppenheim, 2002; Sekaran, 2003). As such, both secondary and primary data were vital to this study. This is reflected in Figure 3.1, where secondary data serves as the focus of stage 1 and primary data as the focus of stage 2.

The research design provides a detailed blueprint for guiding a research study toward its objectives (Aaker, et al., 2007, p.77). There are three primary research designs: exploratory, descriptive and causal (Quee, 1999). The optimum choice of these three research options should be based on the purpose of the research (Stevens, Wrenn, Sherwood, & Ruddick, 2006). In this context, the descriptive design is clearly the best option for accomplishing the research objectives of this study. There are several reasons for this:

- The descriptive design is ideally suited to studies where the objective is to describe the attitudes and behaviours of the population (Ocloo & Subbey, 2008) and the relationship between these variables (Malhotra, et al., 2002). Both of these characteristics are closely aligned with this study’s objective of measuring student satisfaction and its subsequent impact on student behaviour.

- As the research problem has been clearly defined, and the research is structured, it is well-suited to a descriptive design (Malhotra, et al., 2002).
- This study used a large sample and the survey method both of which are ideally suited to a descriptive design (Quee, 1999).

The research design also covers the sampling process, the questionnaire design, ethics issues and the response rate. These key components are discussed in greater detail below.

3.4.1 The Sampling Process

The sampling process involves identifying the survey population, sampling frame, sample size and sampling method. The process of identifying the sample for a study is crucial in order to determine *who* should be included in the study and from *where* they should be drawn. It is also a crucial process in collecting the data for a survey. The following sections discuss how each of these sampling processes was utilised in this study.

3.4.1.1 The Survey Population

The population of interest for this study was defined as all fulltime international undergraduate and postgraduate students that are currently enrolled, and have been enrolled for at least one year, with a Victorian university. This criterion was utilised to ensure all respondents had sufficient exposure to the attitude object – their university (Mavondo, et al., 2004; Mavondo & Zaman, 2000). The selection of this group of students is also related to the notion that customer experience is vital for satisfaction assessment (Mai & Ness, 1999). Based on this definition, it is estimated that the total population for this study was approximately 60,000 students (AEI, 2008; see appendix A).

3.4.1.2 The Sampling Frame

The sampling frame defines the list from which a sample is drawn to represent the survey population (Dillman, Smyth, & Christian, 2009). Victorian universities were selected as the sampling frame for this study due to the fact that international student enrolments in Victoria account for around two thirds of all international student enrolments in Australia (Australian Education International (AEI), 2008). Thus, the potential sampling frame for this study comprises all Victorian universities with international student enrolments. More specifically, this list comprises:

- Australian Catholic University
- Deakin University
- La Trobe University
- Monash University
- RMIT University
- Swinburne University of Technology
- University of Melbourne
- University of Ballarat
- Victoria University

However, of the nine universities listed, only four universities agreed to participate in the study. The universities which agreed to participate were:

- Australian Catholic University
- Monash University
- University of Ballarat
- University of Melbourne

As such, these 4 universities represent the sampling frame for this study.

3.4.1.3 The Sample Size

The larger a sample, the more likely it will replicate its population (Jacobsen, 1976). Even if all aspects of the questionnaire are executed properly, the results are still subject to random error or random sampling error because of chance variation. This error can only be reduced via a large sample size (McColl-Kennedy & Gates, 1999). Accordingly, a potential sample of 1200 international students was chosen. A sample size of 1200 offers a sampling error of just 2.5% at 95% confidence levels (de Vaus, 1991). Moreover, it is consistent with sample sizes utilised in similar studies thereby facilitating generalisation. A larger sample also offers improved statistical power in that the ability of a statistical test to detect significant associations or differences is related to sample size (Loewenthal, 1996).

3.4.1.4 The Sampling Method

Probability sampling was adopted as the sampling method for this study. Under such a sampling method, each sampling element has an equal and known chance of being selected (Aaker, et al., 2007). Moreover, it is the method most likely to result in a sample that will most accurately reflect the properties of its population. This in turn can result in less response bias and greater generalisability (Sekaran, 2003). Of the various forms probability sampling method can take, the simple random sampling technique was selected. Under such a technique, respondents were selected by chance to be invited to participate in the study (Aaker, et al., 2007; Sekaran, 2003).

It should be noted that the random selection of international students to be invited to participate in this study was beyond the researcher's direct control. This was because, as per the ethics requirement for this study, potential respondents had to be selected by the participating universities (see section 3.4.4, *ethics issues*). In fact, all communication between the researcher and the four participating universities was only possible via the PhD supervisor. Before the survey was distributed to potential respondents, a brief justification of the study and list of instructions were given to the nominated officer in-charge at each of the four participating universities. These instructions included the participant selection criteria (e.g. second year international students) and the requirement that the invitation to participate must be based on random selection.

3.4.2 Questionnaire Design

A self-administered questionnaire was used for the purposes of data collection. In line with Dillman's notion of exchange theory as it applies to survey design, such a method of administration is convenient to the respondent in that it allows them to choose the time during which they will complete the survey. Moreover, it also allows them to take their time while doing so (Dillman, 2007). Such a method was also ideal given the Ethics requirement that the researcher have no direct contact with potential respondents.

In order to reduce non-response error, avoid measurement errors and compensate for the potential short-comings of a self-administered survey (Dillman, 2007, p.81), deliberate attention was given to the following design considerations:

- Wording
- The length of the questionnaire / duration of completion time
- The sequence of questions
- The visual appeal of the survey

For the wording of the questions, the vocabulary utilised was deliberately chosen to be as easy to understand as possible (Sekaran, 2003). There were three reasons for this:

1. International students – most of whom originated from countries where English was not the primary language - served as the sample for this study.

2. As a self-administered survey there would be no opportunity for respondents to clarify the meaning of any confusing terms.
3. In combination, points 1 and 2 had potential ramifications for the validity of the study.

In order to comply with these three considerations, the questionnaire was proof-read by a professional editing service and extensively pre-tested using a smaller sample of international students. This process resulted in changes to the wording where necessary (Malhotra, et al., 2002; 2003).

The question structure for the questionnaire was intentionally designed so that respondents would be provided with a question sequence that was easy to understand. Such a design cannot only reduce the incidence of non-response; it can also lead to more accurate responses (Dillman, 2007). For this reason, the questionnaire began with the battery of scales designed to measure satisfaction with the 6 individual dimensions of university service quality (Part A of the survey instrument), before proceeding to overall satisfaction (Part B) and behavioural intentions (Part C). Those questions that could be perceived as being the most intrusive (i.e. nationality, education level etc) were placed last in the question sequence (Part D), so that should a respondent refuse to answer such questions and submit the survey at that point, it would only result in item non-response to a subsidiary research question.

In terms of survey length, in line with Dillman's Total Design Method (2007), the survey was deliberately designed to minimise the burden placed on respondents' by limiting the time it would take to complete the questionnaire to no more than 15 minutes. In addition to helping maximise response rates, such an approach can also reduce response error by avoiding respondent fatigue (Manfreda & Vehovar, 2008; Wiley, Han, Albaum, & Thirkell, 2009). To ensure the survey fell within the sort of completion time necessary to ensure participation, the focus of pre-testing also included measuring participants' attitudes to the time taken to complete the survey.

The questionnaire should also adopt a respondent-friendly design so as to encourage respondents to read and complete it (Dillman, 2007). Since this study employed an online survey, it was possible to utilise several respondent-friendly applications. For example, graphics and multimedia features such as drop-down boxes were employed to minimise the time and effort required to complete the survey (Dillman, 2007; Manfreda & Vehovar, 2008).

3.4.3 Scale selection

Ideally this study would have been able to utilise existing scales for the purpose of measurement. The advantages of using existing scales include (Loewenthal, 2001):

- They have established reliability and validity;
- It allows the results of the current study to be compared with other studies, creating a cumulative body of knowledge;
- They can save the researcher time and effort.

However, the potential benefits of using existing scales should not take priority over their actual relevance to the specific study at hand (Churchill & Peter, 1984). A key task in measuring satisfaction with service quality in the university sector is to determine the precise set of scales to be used. For reasons discussed previously in chapter 2, the generic scales of SERVQUAL and SERVPERF are not well suited to measuring service quality in the specific context of a university. Recognising this, numerous studies have sought to identify the determinants of satisfaction in the university sector. Unfortunately such studies are characterised by an inconsistency in both the dimensions and individual scale items used to conceptualise and operationalise university service quality. A review of dozens of studies revealed that no two sets of dimensions emerged across multiple studies. Such a finding is not entirely unexpected as there are a variety of contextual factors that often set each study's circumstances aside from its counterparts. Such contextual factors include:

- Differing countries. For example, Kwan and Ng (1999) found it necessary to include “instruction medium” as a dimension of student satisfaction; a dimension that focused on the provision of Cantonese language-based learning materials for their Hong Kong University under study. Conversely, some studies set in a European context have included lecturers’ research output (i.e. Lagrosen, et al., 2004) or their ability to act as ‘agents of change’ (Leblanc & Nguyen, 1997) as a measure of the ‘academic’ dimension.
- Differing faculties. Some studies limited their focus to a specific faculty rather than adopting a university-wide focus (i.e. Joseph, et al., 2005; Kwan & Ng, 1999; Lagrosen, et al., 2004; Leblanc & Nguyen, 1997). As would be expected, such studies generated a list of service quality dimensions that were somewhat limited in their generalisability.
- Differing universities. Given that differentiation is a key element of any successful service strategy, it stands to reason that studies measuring service satisfaction across different universities would need to incorporate different service attributes. The inclusion of unique service attributes has naturally led to the emergence of different service dimensions.
- Differing number of universities under study. Relatively few studies have sought to measure student satisfaction across multiple universities. This has led to scales that while suited to the specific research task at hand, lack generalisability when applied in another university context.
- Differing research questions. Some studies have sought to identify the determinants of university choice ***and*** satisfaction (i.e. Joseph, et al., 2005; Petruzzellis, et al., 2006). This has naturally led to the use and emergence of different scale items and therefore by extension, different dimensions.
- Differing measurement scales. Some studies have measured responses on a satisfaction rating scale, while others have utilised Likert scales (e.g. 1 = strongly disagree, 7 = strongly agree). In the case of the latter, such scales were worded in such a way as to make them incompatible with a study designed to measure satisfaction per se.

There have also been problems with the validity and reliability of scales used in previous studies. For example, as discussed previously, concerns have been raised over the discriminant validity of Abdullah's HEdPERF scale (Abdullah, 2006c) given the high number of attributes that loaded on multiple factors. In addition to discriminant validity, there have also been problems with content validity. For example, '*academic'* service quality is typically conceptualised and operationalised via attributes relating to lecturers and their teaching methods, and yet Angell et al., (2008) included attributes relating to the library in their academic scale.

Finally, there are also problems relating to existing scales and the method of analysis to be utilised in this study - structural equation modelling. For reasons of both parsimony and methodology, the ideal number of attributes when operationalising a construct for structural equation modelling is 3 to 4 (Schumacker & Lomax, 2004). However, numerous studies have utilised scales well in excess of this of this number. For example, Gamage et al., (2008) used 8, 10 and 11 attributes to operationalise *academic*, *physical evidence* and *library & computer facilities* respectively. Similarly, Abdullah (2006c) used 14 attributes to operationalise *administrative services*.

In summary, due to the combined limitations associated with existing scales, it was necessary to employ a new battery of scales for each of the 6 independent constructs under study. However it should be noted that no new scale items were employed in this study; only a new combination of existing scales. The source for each of these scales is listed in table 4.1. This approach effectively meant that the combined scale for each of the 6 constructs was new and must therefore be pre-tested and then analysed in terms of its validity and reliability. The process by which this was achieved is discussed in detail in sections 3.5.1, and 4.4.1 through to 4.5.

3.4.4 The Scaling

With the exception of respondent characteristics, all key constructs were measured using interval scales. Such scales were deliberately utilised due to the fact that they serve as a prerequisite for the primary methods of analysis to be employed in this study (e.g. multiple regression, structural equation modeling etc). Respondent attitudes' were measured using 7-point ratings-scales (1 = 'very dissatisfied' and 7 = 'very satisfied'). Seven-point scales were utilised for several reasons:

- Because a key quality of a scale is its' variability, its utility is limited when it fails to discriminate differences in the underlying construct. There are two ways to increase variability; increase the number of items or increase the number of scale points. To avoid respondent fatigue, the second option is preferable (DeVellis, 1991).
- Because respondents have a greater propensity to use the neutral scale point when fewer categories are used, ratings scales should contain <u>at least</u> seven scale points (Foddy, 1993).
- Conversely, the scale should contain no more than seven scale points because the increase in reliability that comes with increasing the number of points tends to level off at about seven (Nunnally, 1978). This coincides with respondents limited capacity to utilise more than eight cues (Hughes, 1971) and the diminishing improvement in reliability that occurs once the number of scale points reaches six (Green & Rao, 1970).

A seven-point scale was therefore used to measure respondent attitudes.

3.4.5 Ethics Issues

Prior to the survey being distributed to respondents, it was first necessary to apply for ethics approval. Ethics approval was sought and obtained for two separate stages of this study. The first of these sought approval to pre-test the survey on a smaller sub-sample of international students from Monash University's Gippsland Campus. Under this approval, the survey could only be distributed to international students enrolled at the Gippsland campus. The second ethics approval was for the main survey and applicable for the four participating universities (see appendix B). The necessary ethics approval was received from Monash Ethics Committee subject to each university agreeing to take responsibility for distributing the survey to students.

3.4.6 The Response Rate

The potential for non-response bias is a critical issue in survey-based research. The greater the response rate, the more accurately survey data will represent population parameters (Lynn, 2008). In order to reduce the incidence of non-response, the following strategies were undertaken:

- The time taken to complete the questionnaire was kept to a minimum.
- Potentially intrusive questions that were not essential to the study (e.g. income) were avoided.
- A philanthropic incentive was offered to respondents in the form of a monetary contribution (Churchill, Brown, & Suter, 2010; Evans & Mathur, 2005; Malhotra, 2007; Manfreda & Vehovar, 2008) to the International Red Cross. This specific incentive was offered for several reasons:
    - It allowed an incentive to be offered that would protect the anonymity of respondents.
    - Pre-testing had revealed it was the one incentive most likely to encourage response.

  Efforts were made to encourage respondents to answer **<u>all</u>** questions by making payment of the incentive conditional upon the questionnaire being **completed** and returned (Alridge & Rowley, 1998; Churchill, et al., 2010; Evans & Mathur, 2005).

- The survey package was sent directly to potential participants via their student email address in order to create awareness of the study (Aaker, et al., 2007; Churchill, et al., 2010; Malhotra, 2007; Sue & Ritter, 2007). In order to comply with the conditions set down by the ethics approval, a nominated representative from each of the four participating universities took responsibility for emailing the survey package to international students.
- Two follow-up emails were sent out reminding potential participants about the significance of the study, the incentive for completing the survey and the closing date for survey return (Sue & Ritter, 2007). All such notifications were sent by the nominated representative from each of the four participating universities.

Online surveys were emailed to a random sample of 1200 international students enrolled in four Victorian universities. Of these 43 were ineligible due to factors such as missing data and late return. In all 363 useable questionnaires were received, representing a response rate of 31.4%.

3.4.7 Sample Characteristics

Gender, age, education level and nationality served as the sample characteristics measured in this study (refer tables 3.1 and 3.2). Of these four characteristics, only gender and nationality could be used to compare the sample against the population. This is because there is no comparative data available for international university students by either age or education level (Australian Education International (AEI), 2011). In terms of the former, the gender split amongst the sample of 43.5% male and 56.5% female, when compared to the population's gender split of 51% male and 49% female (Australian Education International (AEI), 2011), indicates that males are slightly under-represented in this study. This serves as a potential limitation in this study.

In terms of nationality, the three countries that account for the greatest sample representation are Malaysia (accounting for 26.4% of all respondents), China (12.9%) and India (11.6%). This finding suggests that the sample provides a good representation of the international student population given that these same three countries serve as the three largest markets for international students enrolled at Victorian Universities (Australian Education International (AEI), 2008).

Table 3.1: Characteristics of Sample Respondents

Characteristics	**Number of respondents**
Gender	
Female	205
Male	158
Total number of respondents	***363***
Age Group	
18 to 25 years	226
26 to 30 years	66
31 to 40 years	58
41 to above	5
Missing	13
Total number of respondents	***363***
Education level	
Bachelor degree	177
Master degree	103
PhD	72
Other degree (diploma, advanced etc)	11
Total number of respondents	***363***

Table 3.2: Nationality of International Students

Nationality	No. of Respondents	Percentage
Malaysia	96	26.4%
China	47	12.9%
India	42	11.6%
Singapore	26	7.2%
Indonesia	15	4.1%
Vietnam	11	3.0%
Bangladesh	8	2.2%
Iran	7	1.9%
Thailand	7	1.9%
Canada	6	1.7%
Hong Kong	6	1.7%
Saudi Arabia	6	1.7%
USA	6	1.7%
France	5	1.4%
Taiwan	5	1.4%
Afghanistan	4	1.1%
Sri Lanka	4	1.1%
Chile	3	0.8%
Japan	3	0.8%
Brunei	2	0.6%
Colombia	2	0.6%
Norway	2	0.6%
Pakistan	2	0.6%
South Korea	2	0.6%
UAE	2	0.6%
Belgium	1	0.3%
Botswana	1	0.3%
Brazil	1	0.3%
Burma	1	0.3%
Fiji	1	0.3%
Greece	1	0.3%
Ireland	1	0.3%
Korea	1	0.3%
Macau	1	0.3%
Mauritius	1	0.3%
Namibia	1	0.3%
Nepal	1	0.3%
Netherlands	1	0.3%
Philippines	1	0.3%
Poland	1	0.3%
Puerto Rico	1	0.3%
South Africa	1	0.3%
Sweden	1	0.3%
Turkey	1	0.3%
UK	1	0.3%
Venezuela	1	0.3%
Missing	23	6.3%
Total	**363**	**100.00**

3.5 STAGE III: IMPLEMENTATION

Stage three focused on pre-testing, survey administration and data analysis.

3.5.1 Pre-testing

Pre-testing was conducted using a test-sample of 30 international students that were deemed to serve as a good representation of the target population (Malhotra, et al., 2002). One of the primary purposes of the pre-testing was to have the test-sample complete the questionnaire so that the reliability of the resulting data could be measured (Sekaran, 2003). The results of this analysis indicated the data to be reliable with all key constructs recording Cronbach alpha scores of 0.65 or higher (Hair, Babin, Anderson, & Black, 2010) (Table 3.3). While the *physical evidence* scale only just met the 0.65 benchmark in order to be considered reliable, such a score is acceptable given that the factor comprises just 3 scale items (Loewenthal, 2001).

Table 3.3 Summary of Reliability Obtained from Pre-testing (N=30)

Constructs	Number of items	Cronbach's α
Academic services	4	0.84
Access	3	0.68
Administrative services	4	0.86
Augmented services	3	0.91
Physical evidence	3	0.65
Courses Offered	3	0.89
Overall Satisfaction	3	0.95
Behavioural Intentions	3	0.92

Pre-testing also involved having participants answer the following open-ended questions:

- *Were there any questions or answer options that you did not understand? If so, please indicate which questions or answers and why*. This was an important aspect of pre-testing given that the sample comprised international students and that any misinterpretation of question wording had ramifications for validity and reliability (Angell, et al., 2008; Oldfield & Baron, 2000; Sekaran, 2003).
- *Can you think of any other qualities of a university that impact upon your university experience and/or satisfaction?* The purpose of this question was to ensure the questionnaire collected all relevant data (Malhotra, et al., 2002).
- *Did you encounter any problems with the general structure and appearance of the questionnaire* (*e.g. font size, layout etc*)?
- *How long did it take you to complete the questionnaire*?
- *If you received this questionnaire via email would you complete it? If not, why*?
- *Would a $1 contribution to International Red Cross for every questionnaire completed and returned motivate you to participate in this study*?

While some minor modifications were made to the original questionnaire as the result of pre-testing - specifically the wording of some questions - the overall response from the test-sample was very positive.

3.5.2 Survey Administration

There are many potential methods by which a survey can be administered including face-to-face interviews, telephone interviews, mail questionnaires and online surveys. Each of these modes of data collection has its own advantages and disadvantages and the choice of mode depends on the nature and objectives of the study (Manfreda & Vehovar, 2008). Of these various options, the online survey method was adopted for the following reasons:

1. People have become accustomed to checking their e-mail messages on a regular basis, thereby creating a greater likelihood that the survey would not go un-noticed (see Al-Omiri, 2007; Malhotra, et al., 2002; Wiley, et al., 2009).
2. It is the ideal option when dealing with a large and geographically dispersed population (Al-Omiri, 2007; Dillman, 2007; Sekaran, 2003; Sue & Ritter, 2007).
3. It is ideal when administering surveys to a specific population such as students (Dillman, 2007; Dillman, et al., 2009; Sue & Ritter, 2007) all of whom, as indicated by the four participating universities, have access to computers and a personal email account.
4. It is the most cost-effective of the 4 options (Al-Omiri, 2007): an important consideration in light of the financial limitations of this study.
5. It complied with the ethics conditions of ensuring anonymity and no direct contact between the researcher and participants.
6. It eliminated the need for manual data entry and the potential for error that can occur as a result of this process (Al-Omiri, 2007).

To design and distribute the survey for this study, the software system *Qualtrics* was employed. *Qualtrics* offers the researcher several advantages, amongst the most important of which is its ability to serve as reliable and secure means for storing and transferring data, and its compatibility with the method of survey administration (e.g. a combination of email and online).

3.5.3 Data Analysis

The statistical methods employed to analyse the survey data comprised descriptive, inferential and multivariate techniques. Each of these methods is discussed in the following sections and the results of the analysis presented in Chapter 5. Before proceeding to analysis, the data was first screened and edited; a task made simpler by the use of Qualtrics software. The following discussion outlines the data processing and data analysis procedures utilised in this study.

3.5.3.1 Data Processing

The data processing stage includes the coding and editing of data to eliminate or at least reduce the incidence of invalid or missing data. This process also involves checking the data for respondent eligibility and consistency in classification. Because data analysis was to be performed by the *Statistical Package for the Social Sciences* (SPSS), all responses were deliberately coded in numerical form. After the data was edited it was then transferred from its original Excel format into SPSS format. The most recent version of SPSS and AMOS was used to perform descriptive, inferential and multivariate statistical analysis of the data in order to address all the research questions and hypotheses. The following sections provide insight into how the various methods of statistical analysis were implemented.

3.5.3.2 Structural Equation Modeling

Structural Equation Modeling (SEM) refers to "a collection of statistical techniques that allow a set of relationships between one or more independent variables, either continuous or discrete, and one or more dependent variables, either continuous or discrete, to be examined" (Tabachnick & Fidell, 2007, p.676). The following research questions were addressed using structural equation modeling (SEM):

1. To what extent does student satisfaction with the individual factors of university service influence their overall satisfaction with their university?
2. How does overall satisfaction with their university influence the behavioural intentions of international students?

These research questions were addressed via the following hypotheses:

H1: International student satisfaction with:

H1a Academic service positively influences overall satisfaction with a university.
H1b Access positively influences overall satisfaction with a university.
H1c Administrative service positively influences overall satisfaction with a university.
H1d Augmented service positively influences overall satisfaction with a university.
H1e Physical evidence positively influences overall satisfaction with a university.
H1f Courses offered positively influence overall satisfaction with a university.

H2: The overall satisfaction of international students with their university positively influences their behavioural intentions.

There were several reasons as to why SEM was the method best suited to this study:

- The theoretical framework comprised multiple dependent variables, one of which served as both an independent and dependent variable (overall satisfaction). In this situation SEM is an ideal method of analysis (Schumacker & Lomax, 2004; Tabachnick & Fidell, 2007).
- It is ideally suited to quantitative studies employing interval scaled data and involving complicated variable relationships (Qin & Prybutok, 2009; Raykov & Marcoulides, 2006; Schumacker & Lomax, 2004).
- It is recognised for its ability to test hypotheses (Hafeez, Keoy, & Hanneman, 2006; Hui & Zheng, 2010) – a key focus of this study.

SEM actually comprises two categories of model - the measurement model and the structural model (Anderson & Gerbing, 1988; Schumacker & Lomax, 2004). The purpose of the measurement model is to measure the relationship between observed variables and latent variables, and in so doing, determine whether the theoretical model is consistent with the observed data (Raykov & Marcoulides, 2006). The structural model on the other hand, tests the hypothesised relationships between the constructs (Ullman, 2007, p.678).

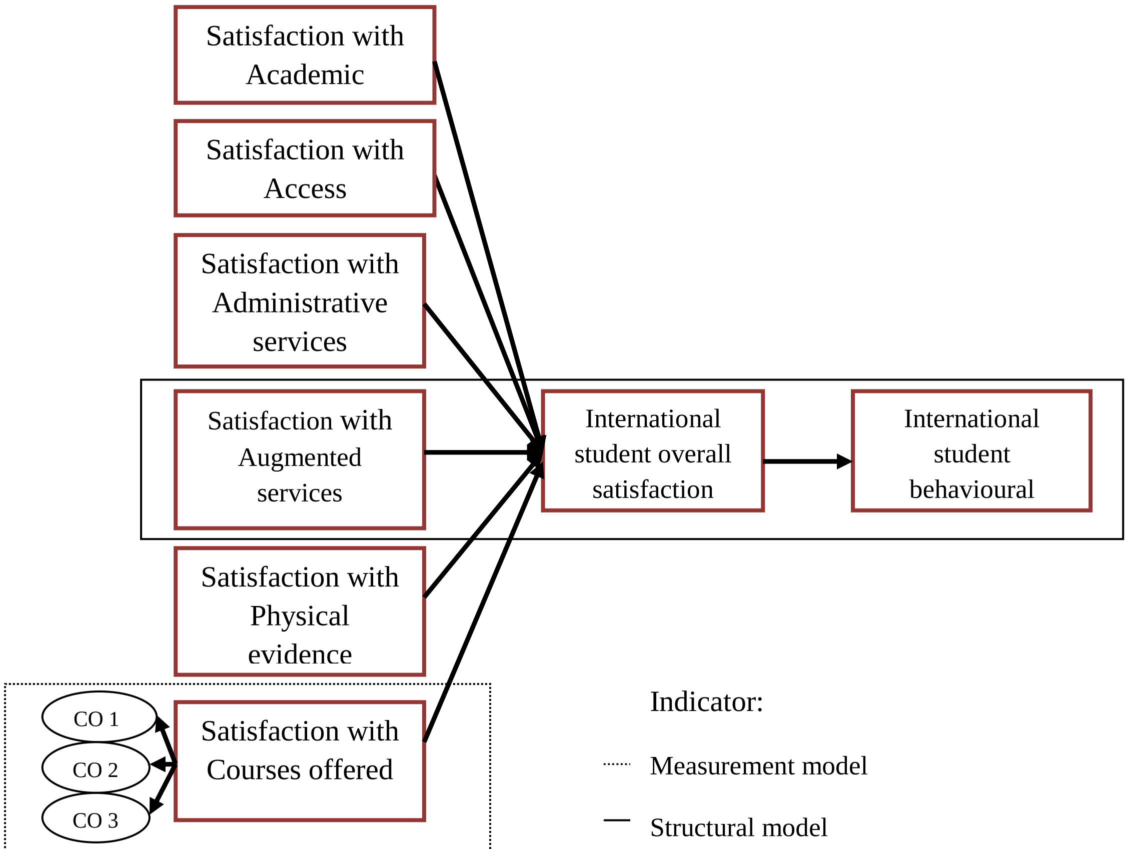
For the purposes of this study, the measurement model was first analysed using confirmatory factor analysis to determine the adequacy of model fit. This process was performed using AMOS version 18 and was repeated several times until satisfactory fit was obtained (Raykov & Marcoulides, 2006). In determining the adequacy of fit for both the measurement model and the structural model, the following fit indices were applied: chi-square, degrees of freedom, GFI, RMSEA, Normed chi-square, NFI, CFI, TLI, AGFI and PNFI (see Table 3.4). Such an approach is consistent with the notion that when testing the goodness-of-fit of the structural model, such tests should include at least one absolute fit index, one incremental fit index and the normed chi-square (Hair et al., 2010).

Table 3.4: Model Fit Criteria and Acceptable Fit Interpretation

Model fit criterion	*Acceptable level*	*Interpretation*
Chi-square	Tabled χ^2	Compares obtained χ^2 value with tabled value for given df
Goodness-of-fit (GFI)	0 (no fit) to 1 (perfect fit)	Higher values indicate better fit.
Adjusted GFI (AGFI)	0 (no fit) to 1 (perfect fit)	Value greater than 0.90 is considered a good fit
Comparative fit index (CFI)	0 (no fit) to 1 (perfect fit)	Value greater than 0.90 is considered a good fit
Root-mean-square error of approximation (RMSEA)	0.05 or 0.08	Cutoff value of 0.05 or 0.08 indicates a good model fit
Tucker-Lewis index (TLI)	0 (no fit) to 1 (perfect fit)	Value close to 1 reflects a good fit
Normed fit index (NFI)	0 (no fit) to 1 (perfect fit)	Value greater than 0.90 reflects a good fit
Normed chi-square	1.0 – 5.0	Less than 1.0 is a poor model fit; more than 5.0 reflects a need for improvement
Parsimony Normed Fit Index (PNFI)	0 (no fit) to 1 (perfect fit)	Value greater than 0.90 reflects a good fit

Source: Adapted from Schumacker and Lomax (2004, p.82); Hair, et al.(2010)

Figure 3.2: The Proposed SEM for this Study



3.5.3.3 Multiple Regression

The third research question involved determining the moderating effects of student characteristics on the relationship between overall satisfaction and behavioural intention. The moderating effect refers to a third variable influencing the relationship between two variables (Cohen, Cohen, West, & Aiken, 2003). The research question and the hypothesis are:

3. To what extent do student characteristics moderate the relationship between overall satisfaction and behavioural intentions?

H3: International student characteristics moderate the relationship between overall satisfaction and behavioural intentions.

Multiple linear regression was used to analyse the moderating effect of student characteristics. This method of multiple regression was employed because it was impossible to predict with any degree of confidence whether any single student characteristic would exert a greater influence over the relationship between overall satisfaction and behavioural intentions than its two other counterparts (Hair et al., 2010). Dummy variables were also created for each demographic characteristic and coded as either 0 or 1. The function of dummy variables is to represent an attribute with two or more distinct categories/levels. These dummy variables were then entered into the equation model as potential moderators. Dummy variables were set for gender M_1 (1 for male and 0 for female), education level (1 for bachelor students and 0 for postgraduate students) and nationality M_2 (1 for Asia and 0 for Non-Asia). In the case of the latter, due to the large proportion of Asian students in the sample, all other students (i.e. those emanating from Europe, Africa, North America and South America) were categorized into the one category (i.e. Non-Asia) in order to provide a comparative sub-sample of a meaningful size.

The moderating effect of student characteristics on the relationship between overall satisfaction and behavioural intention was then assessed using the following regression equation:

$$Y = b_0 + b_1X + b_2M_1 + b_3M_2 + b_4M_3 + b_5XM_1 + b_6XM_2 + b_7XM_3$$

Where:

Y = behavioural intention

b_0 = intercept

b_1X = linear effect of overall satisfaction

b_2M_1, b_3M_2, b_4M_3 = linear effect of gender, nationality and education level

b_5XM_1, b_6XM_2, b_7XM_3 = moderating effect of gender, nationality and education level

In order to ensure the data satisfied all the necessary assumptions for multiple regression it was checked for outliers, multicollinearity, normality, linearity and homoscedasticity of residuals. The results of this analysis revealed that the data satisfied all the assumptions necessary to perform multiple regression analysis (Allen & Bennet, 2010).

3.5.3.4 Descriptive and Inferential Analyses

Descriptive and inferential analysis was used to address the three subsidiary research questions. Descriptive analyses such as mean scores and standard deviations were used to address subsidiary research questions 1 and 2, while correlation tests were employed to analyse subsidiary research question 3. For the fourth subsidiary question, inferential analysis in the form of T-tests and Analysis of Variance (ANOVA) was employed.

- Subsidiary research question 1: What is the overall satisfaction level of international students with each of the individual factors of university service?
- Subsidiary research question 2: What is the overall satisfaction level of international students with their university?
- Subsidiary research question 3: How does international students' overall satisfaction impact on their willingness to re-enrol with their university, spread positive word of mouth about it, and recommend it to others?

In the context of the third subsidiary research question, Pearson's correlation analysis was used to measure the association between overall satisfaction and the three behavioural intentions. The correlation results are discussed in Chapter 5.

The fourth subsidiary research question was answered using Independent-Samples T-test and One-Way ANOVA. Independent-Samples T-testing was used to test for mean differences between males and females, while ANOVA was used to test for significant mean differences by nationality and education level. Before performing the ANOVA analyses, the data was first tested for normality, homogeneity and outliers in order to ensure all necessary assumptions were met (Tabachnick & Fidell, 2007). The subsequent analysis indicated that all necessary assumptions were satisfied. For the purposes of *post hoc* testing, Tukey HSD was utilised due to its more conservative approach to detecting significant differences (Gaur & Gaur, 2006).

- Subsidiary research question 4: How does nationality, gender and education level influence international students' satisfaction with the factors of university service?

3.6 CHAPTER CONCLUSION

This chapter has provided details on the three-stage research process utilised in this study. The first of these stages - the preliminary planning stage – highlighted the important contribution secondary data made to this study. In the second stage, the quantitative research design of the study was discussed. This stage highlighted the sampling process utilised in this study and the key issues in questionnaire design.

The implementation stage serves as the third and final stage of the research process. This section focused on pre-testing, data collection and data analysis. In the case of the latter, structural equation modeling and multiple regression were employed as the primary means for testing the hypotheses of this study. The resulting findings from this analysis will be discussed in Chapters 4 and 5.

CHAPTER 4
CONSTRUCT MEASUREMENT

4.1 INTRODUCTION

This chapter discusses how the key constructs in this study were measured and does so across three sections. The first section discusses how the antecedents of satisfaction, overall satisfaction and behavioural intentions were operationalised. It also discusses the measurement of student characteristics. The second section focuses on the results from the confirmatory factor analysis used to establish model fit. The third section discusses the validity and reliability of the constructs utilised in this study.

SECTION 1: OPERATIONALISATION

This section discusses the process by which the key constructs of this study were operationalised.

4.2 OPERATIONALISATION OF THE THEORETICAL CONSTRUCTS

A fundamental purpose of the questionnaire is to operationalise the key constructs of a study. The process of operationalising a construct refers to the delineation of its observable characteristics in a way that will allow it to be measured. Operational definitions are necessary in order to measure abstract concepts such as satisfaction, overall satisfaction and behavioural intentions (Sekaran, 2003). The following section discusses the operationalisation of the key constructs in greater detail (refer to appendix C for a copy of the questionnaire).

4.2.1 Satisfaction and Overall Satisfaction Measures

Satisfaction was operationalised on two levels: student satisfaction with each of the six individual service elements, and overall satisfaction with the university. For both these constructs, multi-item scales were employed for the purpose of operationalisation. There were several reasons why it was necessary to adopt such an approach:

- Satisfaction is a multi-dimensional construct, and therefore must be operationalised using multi-item scales.
- Services-based research often requires multiple measures in order to operationalise more 'complex' constructs that result from the intangible nature of the attitude object (Grapentine, 2001, p.155).
- Multi-item scales capture more information than single-item measures (Bergkvist & Rossiter, 2007).
- Multiple-item measures allow the survey instrument to be tested for its validity and reliability (Churchill, 1979; Peter, 1979).

Six separate constructs, each comprising multi-item scales, were used to conceptualise and operationalise the service offering of a university. These six service elements were conceptualised and operationalised on the basis of a thorough review of the literature. Pre-testing was then conducted to determine whether the scales used to operationalise each of these constructs should be removed, modified or re-worded. A seven-point rating scale was used to measure satisfaction (1 = Very Dissatisfied, 7 = Very Satisfied). The measurement items for the six factors of university service and their sources are presented in Table 4.1.

Table 4.1: Measurement Items for the Six Factors of University Service

Construct	Source	Items Used in This Study
Academic Services	Adapted from Angell et al.(2008), Gamage et al., (2008), Abdullah (2006c)	The teaching methods used in the classroom
		The learning materials used in the classroom
		The assistance from lecturers to solve students' study problems
		The lecturers' interaction with students
Access	Adapted from Leblanc and Nguyen (1997), Abdullah (2006c)	The accessibility to campus buildings and facilities
		Library operating hours
		The various clubs and societies for students
Administrative Services	Adapted from Leblanc and Nguyen (1997), Petruzzellis, D'Uggento, & Romanazzi, (2006)	Administrative staff solve students' complaints
		The operating hours of the administration office
		The administrative staff's attitude when dealing with students
		The way administrative staff treat students from different religions and races
Augmented Services	Adapted from Kwan & Ng (1999), Joseph et al.(2005)	Transport services
		The range of foods in the university café
		The food prices at the café
Physical Evidence	Adapted from Leblanc and Nguyen (1997)	The university location
		The design of university buildings
		The university environment
Courses Offered	Adapted from Lagrosen, Seyyed-Hashemi, & Leitner (2004), Gruber et al.,(2010)	The subjects offered in the courses
		The course specializations in the degree programs offered by the university
		The relevance of the courses to future jobs

4.2.2 Overall Satisfaction Measures

Overall satisfaction was measured on a three-item scale (1 = Very Dissatisfied, 7 = Very Satisfied). The scale items used to operationalise this construct were adapted from similar studies (refer Table 4.2). This scale was chosen because it could be easily adapted to the context of this study and because in past applications and pre-testing, it had yielded valid and reliable results (Bitner & Hubbert, 1994; Huddleston, Whipple, Mattick & Lee, 2009).

Table 4.2: Measurement Items for Overall Satisfaction

Authors	Items used to operationalise satisfaction
Bitner and Hubbert (1994) and Huddleston, Whipple, Mattick, & Lee (2009)	OS1: In general, how satisfied are you with your university? OS2: Based on all your experiences with this university, to what extent are you satisfied? OS3: Overall, how would you rate your level of satisfaction with your university?

4.2.3 Behavioural Intention Measures

Behavioural intention was conceptualised as comprising the student intention to re-enrol with their current university, to spread positive word of mouth about it, and to recommend it to others. The scale used to operationalise the construct was adapted from Landhari (2009) and comprised the following multi-item scales:

(i) Loyalty: “I would re-enrol in this university in the future”

(ii) Positive word of mouth: “I say positive things about my university to others”.

(iii) Recommendation: “I would recommend my university to others”.

Each of these three items was measured using a 7-point rating scale (1= Strongly disagree, 7= Strongly agree).

4.2.4 Student Characteristics Measures

The final section of the questionnaire dealt with the demographic characteristics of respondents (international students). More specifically, these included:

- Gender
- Age
- Education level
- Nationality

The purpose of this section was twofold. Firstly, it provided a means for determining whether the sample accurately represented the population it was designed to reflect. Secondly, it provided the necessary data to measure the moderating effects of student characteristics on the relationship between overall satisfaction and behavioural intentions. An ordinal scale was used to collect data for education level, nominal scales were used for gender and nationality, while a ratio scale was employed for age.

This section was placed towards the end of the questionnaire due to its potential to be perceived as intrusive. In this way, should respondents opt not to answer any further questions, its impact on item non-response would be minimal.

SECTION 2: CONFIRMATORY FACTOR ANALYSIS

This section presents the confirmatory factor analysis (CFA) for the measurement model. The results of convergent validity, discriminant validity and reliability are presented in this section.

4.3 CONFIRMATORY FACTOR ANALYSIS

Factor analysis is categorised as a multivariate statistical method (Hair, Anderson, Tatham, & Black, 1992). The most commonly employed methods of factor analysis are exploratory factor analysis and confirmatory factor analysis (Thompson, 2004). Because structural equation modeling (SEM) served as the primary means of analysis for hypothesis testing in this study, it automatically dictated that confirmatory factor analysis (CFA) should be employed (Schumacker & Lomax, 2004; Thompson, 2004). Through assessing CFA, the relationships between the construct and its indicators can be established. Further discussion about the measurement model (also referred to as the confirmatory factor model) is provided in the following section.

4.3.1 Measurement Model

The proposed measurement model in this study involved eight multi-item constructs. This includes the six factors of university service, overall satisfaction and behavioural intentions. AMOS version 18 was used to assess the measurement model. The result of the first test revealed poor model fit. The model was therefore re-examined and re-specified by removing those items that had factor loadings below 0.5 (Byrne, 2010). For factor loadings, the deletion of items was made one item at a time. This procedure was repeated until all the factor loadings for each item exceeded 0.5. The final results show that all factor loadings are significant and at an acceptable level and with Cronbach alpha scores all above 0.7 (Hair, et al., 2010, p.709). The final measurement model is presented in Figure 4.1.

4.3.2 Model Fit Indices

Several fit indices were utilised in determining the fit of the measurement model. As discussed previously in chapter 3, when determining the fit of a measurement model at least one absolute fit index, one incremental fit index and the normed chi-square should be utilised (Hair, et al., 2010). The subsequent results of these analyses (see Table 4.3) are as follows:

- The normed chi-square of 2.474 indicates good model fit as this score falls within the accepted range of a value between 1 and 5 (Hair, et al., 2010).
- The results of CFI and AGFI were also acceptable with both values approaching 1 – the benchmark for good model fit (Bentler, 1990; Schumacker & Lomax, 2004).

It should also be noted from the positive results for the degrees of freedom that the model is over-identified (Byrne, 2010). To achieve identification, one of the factor loadings was fixed to one. Moreover, the criterion of indicators per variable - at least three indicators per variable – was also satisfied. Overall, the CFA results indicate the measurement model possesses good fit, thereby demonstrating that analysis can proceed to the structural model (Hair et al., 2010; Schumacker & Lomax, 2004).

Figure 4.1: Measurement Model of Confirmatory Factor Analysis

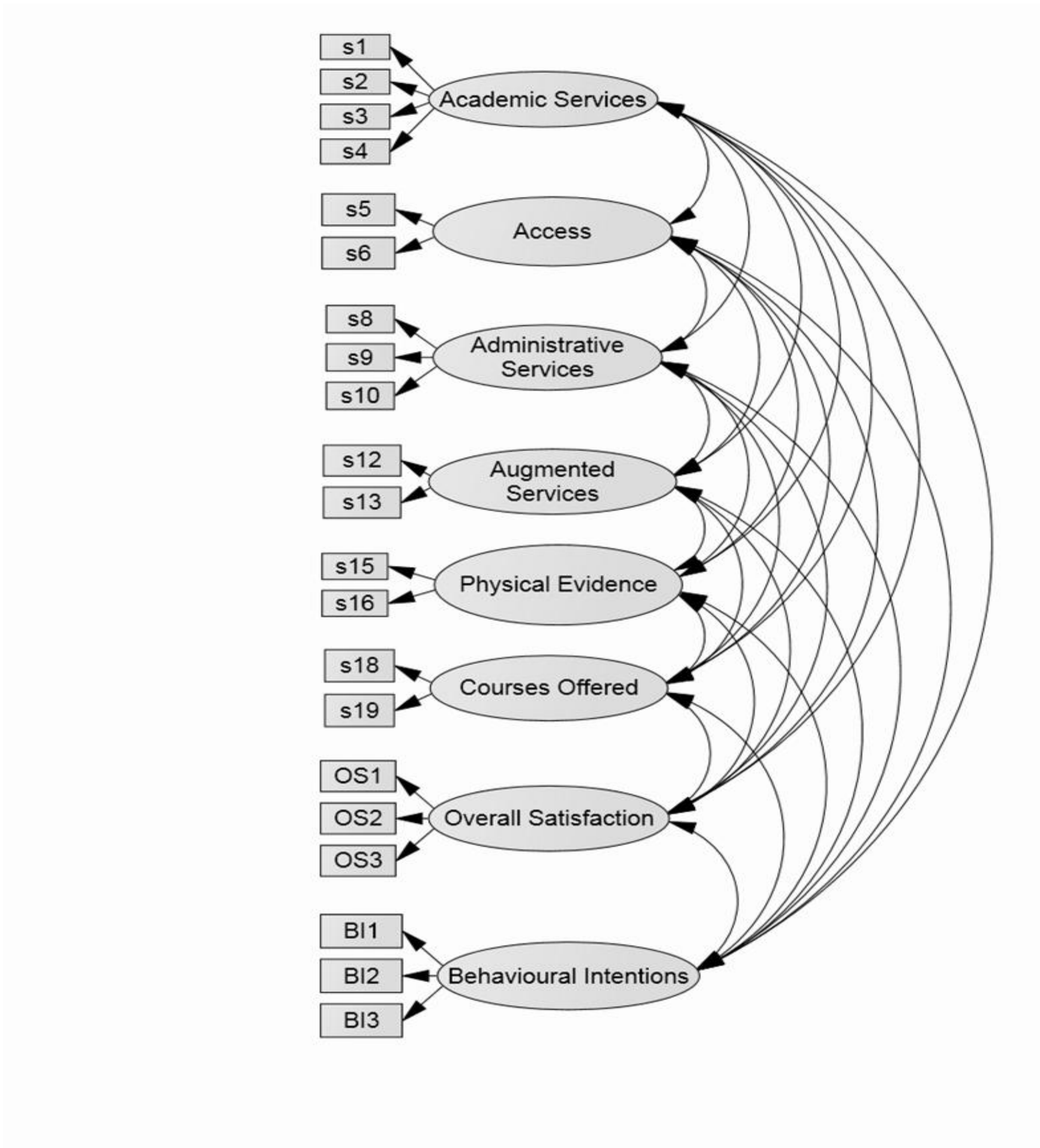


Table 4.3: Results of Measurement Model

Construct and Items		Factor loading	T-value	P	Cronbach Alpha
s1 ←	Academic services	0.812	16.188	***	0.881
s2 ←	Academic services	0.837	16.768	***	
s3 ←	Academic services	0.796	15.834	***	
s4 ←	Academic services	0.780	-		
s5 ←	Access	0.656	10.207	***	0.723
s6 ←	Access	0.862	-		
s7 ←	Access	Deleted			
s8 ←	Administrative services	0.858	18.427	***	0.852
s9 ←	Administrative services	0.711	14.759	***	
s10 ←	Administrative services	0.873	-		
s11 ←	Administrative services	Deleted			
s12 ←	Augmented Services	0.859	13.286	***	0.876
s13 ←	Augmented Services	0.907	-		
s14 ←	Augmented Services	Deleted			
s15 ←	Physical Evidence	0.760	11.441	***	0.755
s16 ←	Physical Evidence	0.815	-		
s17 ←	Physical Evidence	Deleted			
s18 ←	Courses Offered	0.855	13.982	***	0.811
s19 ←	Courses Offered	0.799	-		
s20 ←	Courses Offered	Deleted			
OS1 ←	Overall Satisfaction	0.923	33.211	***	0.960
OS2 ←	Overall Satisfaction	0.973	41.038	***	
OS3 ←	Overall Satisfaction	0.937	-		
BI1 ←	Behavioural Intention	0.920	19.714	***	0.895
BI2 ←	Behavioural Intention	0.942	20.227	***	
BI3 ←	Behavioural Intention	0.772	-		

χ^2 = 398.55; df = 161; χ^2/df= 2.474; CFI=0.958; TLI=0.946; AGFI= 0.864; RMSEA=0.064; GFI=0.905

Note: '-'denotes there are no t-values because these were constrained items.

SECTION 3: VALIDITY AND RELIABILITY

This section discusses the results of validity and reliability analysis of the measurement model.

4.4 VALIDITY

Validity analysis is used to determine whether the constructs of the study actually measure the intended concept (Hair, et al., 1992; Sekaran, 2003). It also ensures that the scale is free from any statistical or non-random errors (Fishbein & Ajzen, 1975; Hair, et al., 1992). Content validity and construct validity were employed to determine the validity of the survey instrument used in this study.

4.4.1 Content Validity

A scale has content validity to the extent that its items represent a chosen subset of the universe of appropriate items (DeVellis, 1991). It is attained by defining precisely what must be measured via literature reviews, expert panels and pre-testing, to ensure that all possible attributes are included in the scale (McDaniel & Gates, 1999). In accordance with this process, a review of literature was used to generate potential scale items. The subsequent survey draft was then submitted to a panel of academics from the School of Business and Economics, Monash University Gippsland and then to a pre-test sample. This results of this process indicated that each of the constructs possessed content validity.

4.4.2 Construct Validity

Construct validity is another validity test that is important when discussing the validity of theory applied in a study. Although construct validity is claimed to be the most difficult type of validity to establish (Malhotra, 2007), it is also the most 'powerful' when it comes to measuring the correlations between variables and how well these correlations 'fit' with theory (Cavana, Delahaye, & Sekaran, 2001). Construct validity is established through the determination of both convergent validity and discriminant validity.

4.4.2.1 Convergent Validity

Convergent validity refers to the extent to which each of the construct's items measure the same construct. For it to occur, items measuring the same construct should all have a high level of correlation (Churchill, 1999; Hair, et al., 1992). Convergent validity was measured using confirmatory factor analysis (Kline, 2005), through determination of the significance of the factor loadings (Anderson & Gerbing, 1988). According to Hair, Babin, Anderson and Black (2010, p.709), there are three ways to determine convergent validity:

1. Via the analysis of factor loadings
2. Via the analysis of average variance extracted (AVE)
3. Via the analysis of reliability.

Subsequent analysis using each of these measures revealed (see Tables 4.3 and 4.4):

1. Satisfactory factor loadings, with each item's factor loading ranging between 0.6 and 0.9 (Bagozzi & Yi, 1988).
2. Satisfactory AVE values with each exceeding the 0.5 benchmark.

3. Satisfactory composite reliability (C_{REL}) with all values exceeding the 0.7 benchmark (Fornell & Larcker, 1981).

4.4.2.2 Discriminant Validity

Discriminant validity refers to the degree to which measures of conceptually distinct constructs differ (Churchill, 1979; Sin, Tse, Yau, Lee, & Chow, 2002, p.666). It requires that a measure not correlate too highly with measures from which it is supposed to differ, otherwise the measure may have captured an isolated trait or is simply reflecting method variance (Churchill, 1979). Discriminant validity is established when the variance extracted from two constructs is greater than the square of the correlation between those two constructs (Fornell & Larcker, 1981). The results of the discriminant validity analysis are presented in Table 4.4. As per these results, the average variance extracted for each pairing of constructs always exceeded their squared path coefficient thereby establishing discriminant validity. In summary, validity analysis provides strong support for the notion that the measurement model possesses both convergent and discriminant validity.

4.5 RELIABILITY

Cronbach's coefficient alpha is regarded as the most important test of reliability (Loewenthal, 2001). It indicates the proportion of variance in scale scores attributable to the true score of the latent variable (DeVellis, 1991). As such, it determines the quality of a measure by taking into account all the inter-associations between all items in the scale (Loewenthal, 2001). Reliability is measured on a scale of 0.00 to 1.00, where 1.00 indicates perfect reliability (Burns & Bush, 2000). Alpha scores above 0.65 are regarded as acceptable (DeVellis, 1991) particularly when there are fewer than ten items per construct (Loewenthal, 2001). As per the results of the reliability analysis shown in

Table 4.3, each of the eight constructs recorded reliability scores ranging between 0.73 and 0.96 and can therefore be regarded as reliable.

Table 4.4 Convergent Validity and Discriminant Validity of the Constructs

	Academic Services	Access	Administrative Services	Augmented Services	Physical Evidence	Courses Offered	Overall Satisfaction	Behavioural Intentions
Academic Services	**0.6504**	0.2745	0.3025	0.1108	0.2361	0.4610	0.4199	0.3856
Access		**0.5866**	0.21437	0.2401	0.3340	0.2970	0.3492	0.2460
Administrative Services			**0.6679**	0.1296	0.2284	0.2530	0.3317	0.28623
Augmented Services				**0.7802**	0.1521	0.1156	0.2237	0.1814
Physical Evidence					**0.6209**	0.1840	0.3881	0.3080
Courses Offered						**0.6847**	0.3624	0.3102
Overall Satisfaction							**0.8922**	0.7447
Behavioural Intentions								**0.7765**

Note1: The figures on the diagonal in bold are AVE.

Note2: Cell entries can be read as an example of:

i) the square structural path coefficient between access and academic services is 0.2745

ii) the average variance extracted for Academic Services = 0.6504 and Access = 0.5866

iii) the average variance extracted for these two constructs (0.6504, 0.5866) was greater than the squared path coefficient (0.2745), hence discriminant validity is established.

4.6 CHAPTER CONCLUSION

This chapter has discussed the operationalisation and measurement of the constructs utilised in this study. The analysis of construct validity (i.e. convergent validity and discriminant validity) and reliability confirm that the model developed in this study is appropriate to continue to the next test of analysis. The next chapter provides the necessary analysis to address the research objectives and questions of this study.

CHAPTER 5
RESULTS AND DISCUSSION

5.1 INTRODUCTION

This chapter addresses the results and discussion from the analysis of research questions and hypotheses. This chapter is presented in three sections. The first section presents the results of the main research questions (**MRQ**) and hypotheses. The second section presents the results of the subsidiary research questions (**SRQ**) and the final section presents a discussion based on the results.

The main research questions and hypotheses were addressed using multivariate statistical methods. SEM was employed to analyse the first and second main research questions and associated hypotheses. Multiple regression was employed to analyse the third research question and hypothesis. The subsidiary research questions were addressed using descriptive and inferential statistical analyses. Descriptive analysis involved the use of means and standard deviations, while inferential analysis involved the use of ANOVA, t-tests and correlations.

SECTION 1: ANALYSIS AND RESULTS OF MAIN RESEARCH QUESTIONS

This section provides the results of the analysis addressing the main research questions and hypotheses.

5.2 MAIN RESEARCH QUESTION 1 AND 2

MRQ1: To what extent does student satisfaction with the individual factors of university service influence their overall satisfaction with their university?

MRQ2: How does overall satisfaction with their university influence the behavioural intentions of international students?

The previous chapter utilised CFA to determine the validity and reliability of the eight constructs that served as the basis for the first two main research questions. Based on the results of CFA, the measurement model was found to have good fit and to possess both convergent validity and discriminant validity. The focus of analysis therefore proceeded to SEM analysis in order to answer the following hypotheses: H1(a), H1(b), H1(c), H1(d), H1(e), H1(f) and H2 (refer Figure 5.1).

Model Fit

The same fit indices used to assess model fit for the measurement model can also be used to assess the fit of the structural model. Thus an absolute fit index, an incremental fit index and the normed chi-square were used to determine the fit of the structural model (Hair, et al., 2010). Based on the results (Table 5.1), the normed chi-square score of 3.555 (Malhotra, et al., 2002), and CFI and AGFI values of 0.928 and 0.815 respectively (Bentler, 1990; Schumacker & Lomax, 2004) indicate a good acceptable model fit between the data and theoretical model of the study (Hair, et al., 2010; Schumacker & Lomax, 2004).

Figure 5.1: SEM Structural Model Showing Hypotheses

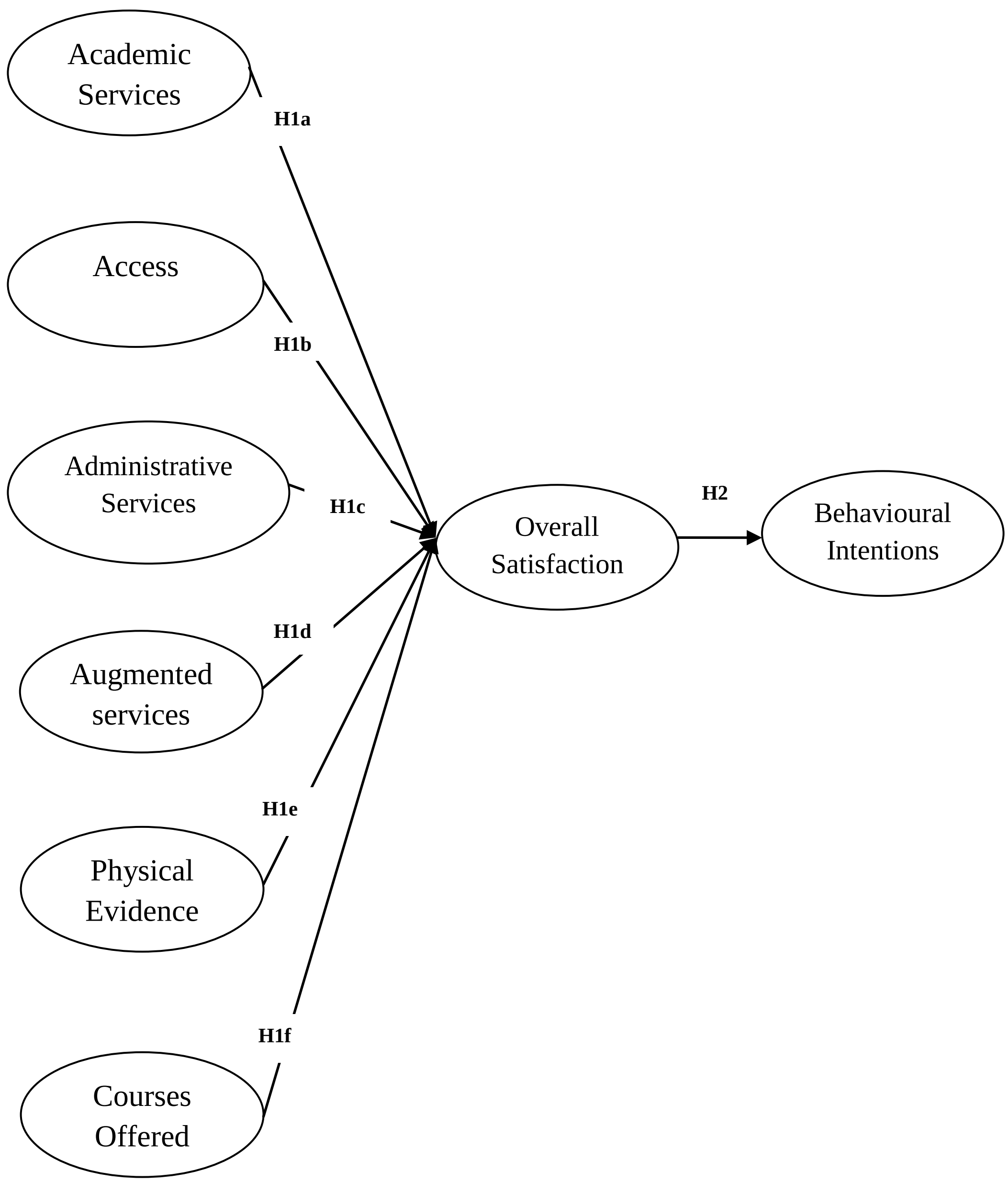


Table 5.1: Goodness-of-fit Measures for Structural Model

Absolute measures	**Structural Model**
χ^2 (chi-square)	533.307
Degrees of freedom	150
Probability	0.000
GFI	0.868
RMSEA	0.084
Normed chi-square	3.555
Incremental Fit Measures	
NFI	0.904
CFI	0.928
TLI	0.909
Parsimony Measures	
AGFI	0.815
PNFI	0.714

Model Analysis

SEM analysis was used to test hypotheses H1a to H1f as well as H2. The resulting analysis provided support for hypotheses H1a, H1b, H1d, H1f and H2. Two hypotheses however – H1c ($p = 0.50$) and H1e ($p = 0.32$) - showed non-significant results and can therefore be rejected. The path between overall satisfaction and behavioural intentions recorded the most significant effect ($\beta = 1.00$; $t = 18.531$; $p = 0.05$) while the path between administrative services and overall satisfaction served as the weakest significant path ($\beta = 0.19$; $t = 0.664$; $p = 0.50$). Further discussion of these results is given in section 3. Table 5.2 provides a summary of the hypotheses analysed by SEM.

H1*:* International student satisfaction with:

H1a Academic service positively influences overall satisfaction with a university.

H1b Access positively influences overall satisfaction with a university.

H1c Administrative service positively influences overall satisfaction with a university.

H1d Augmented service positively influences overall satisfaction with a university.

H1e Physical evidence positively influences overall satisfaction with a university.

H1f Courses offered positively influence overall satisfaction with a university.

H2: International student overall satisfaction toward university positively influences their behavioural intentions.

Table 5.2: Summary of the Seven Hypotheses

Hypothesis	Standardised beta	*t*-values	*P*	Supported
H1a	0.836	2.469	0.01	Yes
H1b	2.608	2.313	0.02	Yes
H1c	0.187	0.664	0.50	No
H1d	2.694	3.996	0.00	Yes
H1e	0.205	0.798	0.32	No
H1f	0.617	2.097	0.03	Yes
H2	1.000	18.531	0.00	Yes

5.3 MAIN RESEARCH QUESTION 3

MRQ3: Do student characteristics moderate the relationship between overall satisfaction and behavioural intentions?

Multiple regression analysis was employed to answer the third question and hypothesis. The analysis was broken down into two stages. In the first stage, the dependent variable (i.e. behavioural intentions) and the independent variable (i.e. overall satisfaction) were regressed. In the second step, the hypothesised moderating characteristics of gender (female and male), nationality (students from Asia and Non-Asia) and education level (Bachelor students and Postgraduate students) were added to the regression. The relationship was regressed using the following regression equation:

$$Y = b_0 + b_1X + b_2M_1 + b_3M_2 + b_4M_3 + b_5XM_1 + b_6XM_2 + b_7XM_3$$

Where:

Y = behavioural intention

b_0 = intercept

b_1X = linear effect of overall satisfaction

b_2M_1, b_3M_2, b_4M_3 = linear effect of gender, nationality and education level

b_5XM_1, b_6XM_2, b_7XM_3 = moderating effect of gender, nationality and education level

H3: Student characteristics will have a significant moderating effect on the relationship between overall satisfaction and behavioural intentions.

The results of the regression model fit and hierarchical regression are shown in Tables 5.3 and 5.4. The main effect of overall satisfaction accounts for 66.8% (adj. R^2=0.664) of the variance in the dependent variable, behavioural intentions. The moderating variables of gender, education level and nationality account for 67.1% (adj. R^2=0.664) of the variance in behavioural intentions (Table 5.3). As per the results in Table 5.4, student characteristics have no significant impact as a moderator (gender, $\beta = 0.123$; $p = 0.458$; education level, $\beta = 0.203$; $p = 0.256$; nationality, $\beta = 0.362$, $p = 0.333$) of the relationship between overall satisfaction and behavioural intention. These results therefore indicate that H3 is rejected.

Since, there was no moderating effect of student characteristics on the relationship between overall satisfaction and behavioural intentions; further analysis was undertaken to determine whether these student characteristics (i.e. gender, education level and nationality) when treated individually, moderate the relationship between overall satisfaction and behavioural intentions. This follow-up analysis was carried out using independent sample t-tests.

Table 5.3: Regression Model Fit

					Change Statistics				
Model	*R*	R^2	Adj.R^2	SE Est.	ΔR^2	*F* Change	df1	df2	Sig.*F* Change
1	0.817	0.668	0.664	0.795	0.668	162.916	4	324	0.000*
2	0.819	0.671	0.664	0.764	0.003	1.086	3	321	0.355

*Notes: Dependent variable = Behavioural Intention, Independent variable = Overall Satisfaction; * significant at 0.05 level.*

Table 5.4: Hierarchical Regression

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	.409	.269		1.520	.129
	Overall satisfaction	.914	.036	.813	25.155	.000*
	Gender	-.054	.089	-.020	-.608	.544
	Education level	.090	.088	.033	1.022	.307
	Nationality	-.020	.028	-.023	-.709	.479
2	(Constant)	1.777	.851		2.088	.038
	Overall Satisfaction	.651	.162	.579	4.023	.000*
	Gender	-.316	.377	-.114	-.839	.402
	Education Level	-.336	.387	-.123	-.868	.386
	Nationality	-.331	.324	-.374	-1.023	.307
	Overall Satisfaction x Gender	.054	.072	.123	.744	.458
	Overall Satisfaction x Education level	.084	.074	.203	1.137	.256
	Overall Satisfaction x Nationality	.052	.053	.362	.969	.333

*Notes: Model 1: The regression only involves the independent variable, dependent variable and student characteristics; Model 2: The moderating effects were added to the regression; * = multiple; significant at 0.05 level.*

The findings from the t-tests indicate mixed results (refer Tables 5.5 and 5.6). On the one hand education level was found to significantly differentiate bachelor-degree students from post-graduate students for both overall satisfaction (p=0.014; Mean = 4.87 and 5.19; Standard Deviation = 1.300 and 1.139) and behavioural intentions (p=0.006; Mean = 4.83 and 5.23; Standard Deviation = 1.376 and 1.334). In both these cases, post-graduate students were found to report higher overall satisfaction levels and more positive intentions than their under-graduate counterparts. Conversely, neither gender nor nationality was found to have any significant impact on overall satisfaction or behavioural intentions.

Table 5.5: Student Characteristics and t-test for Overall Satisfaction

Characteristic		*n*	Mean	Standard Deviation	F	Sig
Gender	Male	363	5.10	1.294	3.361	0.068
	Female		4.99	1.159		
Education level	Bachelor	352	4.87	1.300	0.521	0.014*
	Post-graduate		5.19	1.139		
	Asian		5.07	1.200	0.007	0.524
Nationality	Non-Asian	337	4.95	1.262		

** Significant at p <0.05.*

Table 5.6: Student Characteristics and t-test for Behavioural Intentions

Characteristic		*n*	Mean	Standard Deviation	F	Sig
Gender	Male	363	5.13	1.377	0.458	0.260
	Female		4.97	1.335		
Education level	Bachelor	352	4.83	1.376	0.000	0.006*
	Post-graduate		5.23	1.334		
	Asian		5.11	1.338	0.691	0.092
Nationality	Non-Asian	337	4.74	1.459		

** Significant at p <0.05.*

SECTION 2: ANALYSIS AND RESULTS OF SUBSIDIARY RESEARCH QUESTIONS

This section provides the results of the analyses on the subsidiary research questions.

5.4 SUBSIDIARY RESEARCH QUESTION 1

SRQ1: What is the satisfaction level of international students with each of the individual factors of university service?

Descriptive analysis was employed to determine the satisfaction level of international students with each of the six factors of university service. Table 5.7 shows the rank ordered mean scores for each of these factors. The results show that international students are satisfied with all six factors, with courses offered (M= 5.49; SD=1.297), physical evidence (M=5.40; SD=1.130) and academic services (M=5.41; SD=1.262) recording the highest satisfaction ratings.

Table 5.7: International Student Level of Satisfaction with Key Factors

Factor	Mean* (M)	Standard Deviation (SD)
Courses offered	5.49	1.297
Physical evidence	5.40	1.130
Academic services	5.41	1.262
Access	5.17	1.284
Administrative services	5.04	1.341
Augmented services	4.33	1.599

** Scale ranges from 1= Very Dissatisfied to 7 = Very Satisfied.*

5.5 SUBSIDIARY RESEARCH QUESTION 2

SRQ2: What is the overall satisfaction level of international students with their university?

The second subsidiary research question was analysed through a combination of mean scores and frequency analysis. Analysis of the mean score indicates that international students are satisfied with their overall university experience ($\underline{M}$=5.01, $\underline{SD}$=1.23). The results from the frequency analysis (refer Table 5.8) portray a similar finding, with the majority of international students (65.8%) indicating that they are satisfied with their university. Of the remaining 34.2% of students, 21.5% possess a neutral level of satisfaction with their university, while 12.7% indicate some level of dissatisfaction.

Table 5.8: Students' Overall Satisfaction With Their University

Level of Overall Satisfaction	Number of respondents	Percentage
1 (Very Dissatisfied)	6	1.7%
2	10	2.8%
3	30	8.2%
4	78	21.5%
5	118	32.4%
6	96	26.5%
7 (Very Satisfied)	25	6.9%
Total number of respondents	**363**	**100%**
Mean	**5.04**	
Standard Deviation	**1.219**	

5.6 SUBSIDIARY RESEARCH QUESTION 3

SRQ3: What is the impact of students' overall satisfaction on positive word of mouth, re-enrolment and willingness to recommend?

The third subsidiary research question was analysed using Pearson's correlation. The correlation coefficient is an index that ranges from -1 through to +1, where a correlation of 0.0 indicates no relationship. Two variables are regarded as being 'slightly' correlated if they record a correlation score between 0.21-0.35, 'moderately' correlated with a correlation between 0.36 and 0.55, 'highly' correlated with a correlation between 0.56 and 0.75, and extremely highly correlated with a correlation between 0.76 and 0.99 (Stevens, Wrenn, Ruddick, & Sherwood, 1997). As per the results in Table 5.9, overall satisfaction highly correlates with all three behavioural intentions - positive word of mouth, and willingness to recommend and re-enrol – all of which were significant at the $p < 0.01$ level.

Table 5.9: Overall Satisfaction and Behavioural Intentions Correlations

	Overall Satisfaction	Positive Word of Mouth	Recommendation	Re-enrolment
Overall Satisfaction	-			
Positive Word of Mouth	0.668**	-		
Recommendation	0.663**	0.872**	-	
Re-enrolment	0.582**	0.665**	0.743**	-

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

Overall satisfaction produced the strongest correlation with positive word of mouth ($r=0.668$, $p < 0.01$), followed by recommendation ($r=0.663$, $p < 0.01$) and then re-enrolment ($r=0.582$, $p < 0.01$). Interestingly, the analysis also revealed a strong and logical link between the propensity to spread positive word of mouth and willingness to recommend the university to others ($r=0.872$, $p < 0.01$).

5.7 SUBSIDIARY RESEARCH QUESTION 4

SRQ4: How does nationality, gender and education level influence international students' satisfaction with the six factors of university service?

Independent-Samples T-tests and One-Way ANOVA analyses were employed in order to address this research question. T-tests were used to identify significant differences based on gender, while ANOVA was used to test for significant differences based on nationality and education level.

Nationality

As per the respondent profile discussed in section 3.5.6, the sample comprised students from 46 different countries. Hence, in order to prepare the data for more in depth analysis by ANOVA it was first necessary to condense the original number of responses into a smaller set of categories. For this purpose, each student's country of origin was re-classified into one of five categories - East Asia, South Asia, Middle East, Europe & North America and Other (Africa and Latin America). Subsequent analysis revealed no significant difference in satisfaction ($p > 0.05$) with any of the six factors of university service on the basis of nationality (see Table 5.10).

Gender

Independent sample t-tests of the impact of gender on each of the 6 factors of university service indicated no significant differences ($p > 0.05$) (refer Table 5.11). Hence with the various mean scores for both male and female students all falling above the scale mid-point ($M > 4$), it can be concluded that international students are satisfied with each of the antecedents of overall satisfaction, irrespective of gender.

Table 5.10: ANOVA Results of Nationality on Factors of University Service

Factor	Country	Mean	Standard Deviation	F	Sig.
Academic Services	East Asia	5.47	1.037	.602	.661
	South Asia	5.23	1.401		
	Middle East	5.44	1.468		
	Europe and North America	5.26	1.227		
	Other	5.61	1.027		
Access	East Asia	5.16	1.127	1.670	.156
	South Asia	5.40	1.150		
	Middle East	5.44	1.308		
	Europe and North America	4.65	1.093		
	Other	5.15	1.324		
Administrative Services	East Asia	5.07	1.278	.244	.913
	South Asia	4.92	1.516		
	Middle East	5.13	1.414		
	Europe and North America	5.11	1.325		
	Other	4.84	1.793		
Augmented Services	East Asia	4.31	1.094	.987	.415
	South Asia	4.43	1.198		
	Middle East	3.90	1.413		
	Europe and North America	4.29	0.896		
	Other	5.09	1.388		
Physical Evidence	East Asia	5.42	1.027	1.403	.233
	South Asia	5.54	1.007		
	Middle East	5.58	1.442		
	Europe and North America	4.93	0.819		
	Other	5.48	1.055		
Courses Offered	East Asia	5.51	1.294	.290	.885
	South Asia	5.47	1.266		
	Middle East	5.63	1.121		
	Europe and North America	5.28	1.527		
	Other	5.70	1.329		

Note: N = 340 (East Asia=229; South Asia=59; Middle East=16; Other=11), missing values = 23.

Table 5.11: T-test Results of Gender on Factors of University Service

Factor	Gender	Mean	Standard Deviation	F	Sig
Academic Services	Male	5.37	1.318	3.245	0.072
	Female	5.44	1.220		
Access	Male	5.22	1.278	0.109	0.742
	Female	5.14	1.297		
Administrative Services	Male	5.14	1.247	1.807	0.180
	Female	4.96	1.408		
Augmented Services	Male	4.27	1.690	3.208	0.074
	Female	4.37	1.529		
Physical Evidence	Male	5.33	1.174	0.632	0.548
	Female	5.45	1.094		
Courses Offered	Male	5.51	1.313	0.014	0.904
	Female	5.47	1.286		

Note: N = 363 (Male=158; Female=205).

Education Level

In order to measure the impact of education level on each of the 6 factors of university service, education level was divided into four categories - Bachelor Degree, Masters Degree, PhD and other. Table 5.12 provides the results from the ANOVA analyses used to test for this. The ANOVA results show that education level has a significant influence on student attitudes towards academic services, access and courses offered. Subsequent post hoc Tukey tests indicated that in each instance where there was a significant difference in satisfaction, it could be attributed to PhD students reporting a higher level of satisfaction than other students.

Table 5.12: ANOVA Results of Education Level on Factors of University Service

Factor	Education Level	Mean	Standard Deviation	F
Academic Services	Bachelor degree	5.09*	1.116	17.464***
	Master degree	5.31*	1.250	
	PhD	6.27*	1.288	
	Other	5.70	0.835	
Access	Bachelor degree	4.86*	1.325	9.165***
	Master degree	5.27*	1.290	
	PhD	5.74*	0.968	
	Other	5.55	0.942	
Administrative Services	Bachelor degree	4.89*	1.403	2.348
	Master degree	5.05	1.434	
	PhD	5.38*	1.010	
	Other	4.91	1.020	
Augmented Services	Bachelor degree	4.16	1.609	1.312
	Master degree	4.48	1.580	
	PhD	4.51	1.536	
	Other	4.42	1.956	
Physical Evidence	Bachelor degree	5.26	1.135	2.510
	Master degree	5.44	1.125	
	PhD	5.61	1.051	
	Other	5.91	1.342	
Courses Offered	Bachelor degree	5.25	1.232	11.473***
	Master degree	5.45*	1.268	
	PhD	6.23*	1.248	
	Other	4.97*	1.159	

*Note 1: ANOVA results = ***p < 0.05; N=363 (Bachelor=177; Master=103; PhD=72; Other =11).*

*Note 2: Post Hoc Tukey Test results = * the mean difference is significant at the 0.05 level.*

SECTION 3: DISCUSSION OF THE RESULTS ANALYSIS

The aim of this study is to investigate international student satisfaction with the services provided by Australian universities. International student satisfaction was measured in relation to six factors identified via a review of literature as exerting the greatest degree of influence over satisfaction with university service. This study also aims to investigate how students' overall satisfaction with their university influences their behavioural intentions. In addition, the investigation is extended to assess how different international student characteristics (i.e. nationality, gender and education level) moderate the relationship between international students' overall satisfaction and their behavioural intentions.

5.8 MAIN RESEARCH QUESTIONS DISCUSSION

The following is the discussion on main research Question 1 and 2.

5.8.1 Main Research Question 1 and 2

In combination these two questions sought to identify how the individual factors of university service influence international students' overall satisfaction with their university (MRQ1) and how overall satisfaction in turn influences international students' behavioural intentions towards their university (MRQ2). Subsequent analysis revealed that five of the seven hypotheses were supported. More specifically, international students' satisfaction with academic services (H1a, $\beta = 0.83$; $p = 0.01$), access (H1b, $\beta = 2.6$; $p = 0.02$), augmented services (H1d, $\beta = 2.69$; $p = 0.00$) and courses offered (H1f, $\beta = 0.61$; $p = 0.03$) exert a significant influence over overall satisfaction with a university. In contrast, satisfaction with administrative services (H1c, $\beta = 0.18$; not significant) and physical evidence (H1e, $\beta = 0.21$; not significant) do not share a significant relationship with overall satisfaction. The results also show that overall satisfaction has a significant relationship with behavioural intention (H2, $\beta = 1.00$; $p = 0.00$).

As discussed in the review of literature, the hypotheses developed in this study were based on the model of *transaction-specific satisfaction*, *overall satisfaction* and the *consequences of satisfaction* (Jones & Suh, 2000). The findings from this study suggest that four *transaction-specific* factors of university service influence overall satisfaction with a university. The notion that academic services, courses offered, access and augmented services exert a strong influence over student satisfaction is consistent with findings stemming from previous studies (Arambewela & Hall, 2009; DeShields, et al., 2005; Gruber, et al., 2010; Navarro, et al., 2005).

Conversely, the results show administrative services and physical evidence share no significant relationship with overall satisfaction. This is an interesting finding in the sense that subsequent inferential analysis indicated that students were satisfied with both administrative services ($\underline{M}$=5.04) and physical evidence ($\underline{M}$=5.40). In the case of administrative services, its non-significant impact on overall satisfaction could stem from the notion that relative to other elements of the service mix, it serves as a non-core element of university service. In the case of physical evidence, and in light of the debate as to whether service should be conceptualised in a way that includes tangible elements, it is interesting that it should be identified as having a non-significant impact on overall satisfaction. Similar to administrative services, the answer could lie in the notion that students assign greater significance to the core service offering rather than those elements that are designed to help deliver it.

The results also indicate that overall satisfaction shares a strong relationship with behavioural intention. This is consistent with the results from a number of previous studies (Alves & Raposo, 2007; Athiyaman, 1997; Navarro, et al., 2005). The implication here is that in order to improve overall satisfaction, university management should focus their resources on academic services, courses offered, access and augmented services. In doing so, they also enhance the prospect of students re-enrolling with the university, spreading positive word of mouth about it, and recommending the university to others.

5.8.2 Main Research Question 3

Multiple regression was utilised for the purpose of exploring the moderating effects of student characteristics on the relationship between overall satisfaction and behavioural intentions. The subsequent analysis revealed that student characteristics have no significant impact as a moderator (gender, $\beta = 0.123$; $p = 0.458$; education level, $\beta = 0.203$; $p=0.256$; nationality, $\beta = 0.362$, $p = 0.333$) of the relationship between overall satisfaction and behavioural intention. Thus, H3 was not supported.

While other studies have also explored the moderating effect of customer characteristics on this relationship, these were conducted in the context of non-educational industries (Walsh, et al., 2008). To the author's best knowledge no other study conducted in a tertiary context has conducted this same analysis. As such, this serves as one of the contributions made by this study. It should also be noted that despite the different industry contexts, the results of this analysis were similar to those of Walsh et al. (2008) and Baker et al. (2007).

Further analysis was undertaken to determine the individual impact of student characteristics on overall satisfaction and behavioural intentions. T-tests were employed for this purpose. The results show that respondents' education level was the only student characteristic to influence overall satisfaction and behavioural intentions. In this sense, post-graduate students report a higher level of overall satisfaction and more positive behavioural intentions then their under-graduate counterparts. One potential explanation for this is that post-graduate students may receive a higher-level of service due to the priority that many universities assign to attracting and retaining such students. Or alternatively, such higher levels of overall satisfaction could have resulted from the situation whereby some post-graduate students were also undergraduate students of the same university, and elected to re-enrol for post-graduate studies as a result of their satisfaction. Unfortunately, the survey instrument did not test for this potential scenario, and as such it serves as a limitation of this study (refer section 6.4).

5.9 SUBSIDIARY RESEARCH QUESTIONS DISCUSSION

This section discusses the results for the subsidiary research questions as follows:

5.9.1 Subsidiary Research Question 1

The objective of the first subsidiary research question was to determine international students' satisfaction with the six factors of university service. While the findings from the Main Research Question 1 indicated that only four of the six factors influenced overall satisfaction, students were found to be satisfied with all six factors. More specifically, all 6 factors recorded satisfaction scores of 4.33 or higher (on a 7-point scale). The three factors to which international students assign the greatest level of satisfaction are courses offered, physical evidence and academic services. Ironically, physical evidence was found to exert a non-significant influence over overall satisfaction.

It is quite significant that international students are highly satisfied with courses offered because this factor serves as a key influence over students' initial decision as to which university they will study at (Brennan, 2001; Price, et al., 2003; Soutar & Turner, 2002). Moreover, the results from this study support those proffered by previous studies that courses offered by a university serve as an important determinant of student satisfaction (Ford, et al., 1999; Joseph & Joseph, 1997; Kwan & Ng, 1999).

In the few studies that included it, physical evidence was found to exert a significant influence over student satisfaction (Ford, et al., 1999; Joseph & Joseph, 1997; Sahney & Karunes, 2004). In contrast, while this study found that students were satisfied with the tangible elements of a university specifically, they have no significant impact upon overall satisfaction. As such, the findings of this study in relation to physical evidence contradict that of preceding studies.

In regards to academic services, students not only report a high level of satisfaction with this factor; it also shares a significant relationship with overall satisfaction. Such a finding is consistent with numerous previous studies (Ford, et al., 1999; Hill, 1995; Joseph & Joseph, 1997; Joseph, et al., 2005; Mavondo & Zaman, 2000) thereby emphasising the need for universities to maximise their performance in this area in order to project a professional image and to build and maintain brand image (Abdullah, 2006a; Gamage, et al., 2008). As such, the findings in relation to academic services are very similar to that of courses offered, and for similar reasons. Academic service is also likely to share a strong relationship with overall satisfaction because it serves as a salient attribute in students original choice of university (Brennan, 2001; Price, et al., 2003; Soutar & Turner, 2002).

5.9.2 Subsidiary Research Question 2

The objective of this question was to determine international students' level of overall satisfaction with their university. Frequency analysis was employed for this purpose. The results show that a clear majority of international students are satisfied with services provided by their university.

5.9.3 Subsidiary Research Question 3

The objective of this question was to determine the impact of overall satisfaction on the individual components of behavioural intention: re-enrolment, positive word of mouth and willingness to recommend. Pearson's correlation was used to address this question. Subsequent analysis revealed that overall satisfaction has a significant impact on each of the three behavioural intention components. Thus, the higher the level of student satisfaction with a university, the more likely students' are to spread positive word of mouth to other people, recommend their university to others and to re-enrol with their current university.

Such a finding is consistent with that of numerous other studies (Alves & Raposo, 2007; Arambewela, et al., 2005; Athiyaman, 1997; Banwet & Datta, 2003; Navarro, et al., 2005). As such there exists a significant body of evidence that in order for a university to effectively attract and retain international students, it should strive to attain high levels of student satisfaction. In doing so, it not only increases the likelihood that students will re-enrol with their university; it can also help create student ambassadors for the university (Arambewela & Hall, 2009).

5.9.4 Subsidiary Research Question 4

The purpose of the fourth subsidiary research question is to determine how three student characteristics - gender, nationality and education level - influence student satisfaction with the six factors of university services. The answers to such a question are important because they can assist in the development of different segmentation strategies based on different student characteristics. T-tests and ANOVA served as the methods of analysis for answering this research question.

Nationality

ANOVA results show no significant difference in satisfaction ratings with any of the six factors on the basis of nationality. This result contradicts the findings from previous studies showing that students from different countries experience different levels of satisfaction with the elements that comprise the university service offering (Gamage, et al., 2008; Kwan & Ng, 1999). There are two possible implications stemming from this finding. From an academic perspective one might interpret this finding as suggesting that all six groupings recorded consistent satisfaction ratings irrespective of nationality. From a methodological perspective one might conclude that some significant variations may have been lost in the process of combining so many nationalities into a smaller set of regional groupings (e.g. East Asia, South Asia etc).

Gender

It is important to determine whether gender influences satisfaction ratings because male and female students in exhibiting different learning styles and different study approaches may potentially rate university services differently (Fogarty, 1996). In order to test for this, T-tests were employed. Consistent with previous studies (Joseph & Joseph, 2000; Joseph & Joseph, 1997), the results revealed no significant difference between males and females for any of the six factors.

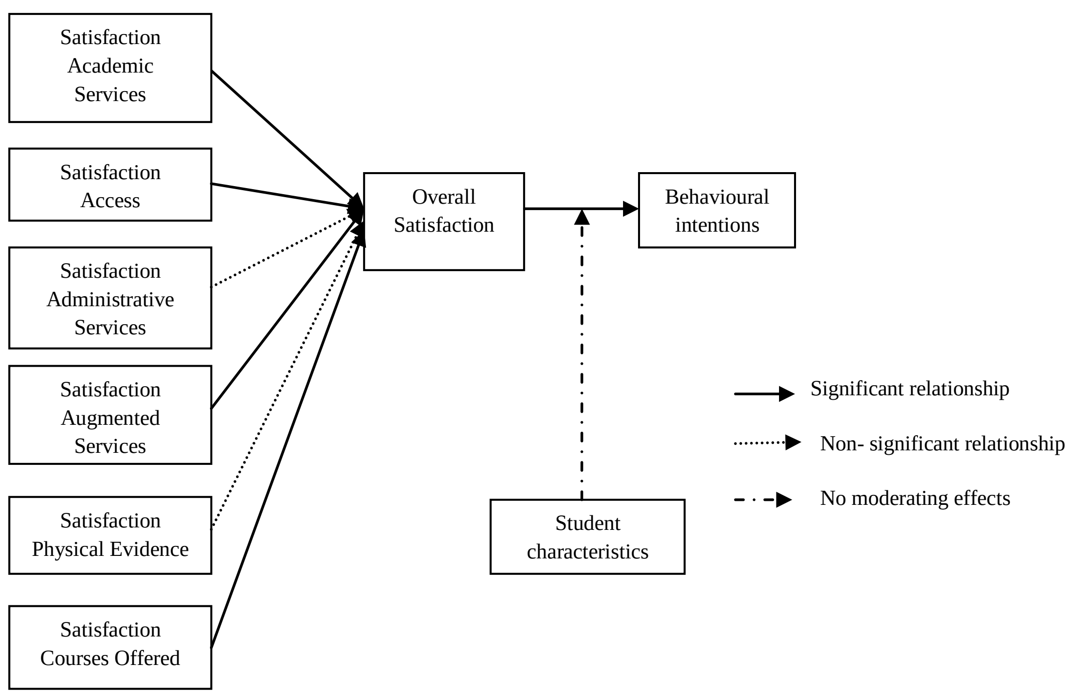
Education level

ANOVA analysis was also employed to determine whether education level influenced the satisfaction ratings of each of the six factors of university services. For the purpose of this analysis, education level comprised four categories: Bachelor Degree, Masters Degree, PhD and Other degree. The results of the ANOVA analysis indicated that the satisfaction ratings of academic services, access and courses offered all varied according to education level. In all three cases, post hoc testing utilising the Tukey test revealed that the difference was due to PhD students assigning a higher level of satisfaction than their other students. Such a finding is consistent with the proposition that PhD students often differ from other students in their satisfaction ratings because their greater experience with the attitude object influences their judgments (Nasser, Khoury, & Abouchedid, 2008; Taylor, 2002).

5.10 CHAPTER CONCLUSION

This chapter analysed and discussed the main and subsidiary research questions. The key findings stemming from this chapter are that academic services, access, augmented services and courses offered serve as determinants of overall student satisfaction. Overall satisfaction in turn influences behavioural intentions, while student characteristics do not moderate the relationship between these two constructs. A visual summary of the key findings from this study are shown in Figure 5.2. The next chapter discusses the contributions and recommendations made by this study.

Figure 5.2: Overall Research Findings of Theoretical Framework of the Study



CHAPTER 6

CONTRIBUTION, RECOMMENDATIONS AND CONCLUSION

6.1 INTRODUCTION

This final chapter builds upon the discussion of results, identifies the key contributions made by this study, and provides recommendations for further research. Since the study focuses on international students at Victorian Universities, the predominant focus of the recommendations is the Victorian education market. However it is likely that there are also many useful insights for universities, Australia-wide.

6.2 CONTRIBUTION OF THE STUDY

This study addresses or expands upon a number of gaps in the literature in the area of international student satisfaction with university services.

6.2.1 Application of the Adapted Model of Customer Satisfaction (Figure 2.1)

From an academic perspective, this study builds upon the model of customer satisfaction proposed by (Jones & Suh, 2000). According to this model, satisfaction comprises two levels; transaction-specific satisfaction and overall satisfaction. The results of this study add support to this model, with four factors of university service being found to influence overall satisfaction, which in turn, influences the behavioural intentions of international students enrolled in Victorian universities.

6.2.2 Factors of University Service

Via an extensive review of literature, all factors of university service previously reported as being important to international students were included in this study. One of the contributions to new knowledge made by this study was the unique combination that the resulting list of 6 factors represented. This meant that the importance of these factors could not only be measured in an absolute sense, but a relative one as well.

6.2.3 The Unidimensional Construct of Behavioural Intentions

While numerous studies of higher education have examined the impact of satisfaction on behavioural intentions, many have operationalised the latter as either a single-item scale or conceptualised and operationalised it as three separate constructs – re-enrolment intention, positive word of mouth and willingness to recommend (Navarro, et al., 2005; Zeithmal, et al., 1996). This study, however, conceptualised and operationalised behavioural intentions as a unidimensional construct comprising the three afore-mentioned dimensions. Subsequent analysis revealed the unidimensional construct to possess good validity and reliability, and to share a strong relationship with overall satisfaction. While this same approach has been utilised before (i.e. Landhari, 2009), it had yet to be applied in a tertiary context. As such, the approach of operationalising behavioural intentions as a unidimensional construct in the context of satisfaction with a university, serves as another important contribution made by this study.

6.2.4 The Moderating Effects of Student Characteristics

A further design element of this study was to determine the moderating effects of demographic characteristics on the relationship between overall satisfaction and behavioural intentions. While other studies have investigated this relationship (see Walsh, et al., 2008), it has yet to be explored in the context of higher education. In considering and determining the impact of moderating effects, this study has investigated the phenomenon in a higher education context.

In addition to these contributions, a number of recommendations for marketing practice have been considered in light of the outcomes derived from the data.

6.3 RECOMMENDATIONS FOR MARKETING APPLICATIONS

In recognition of the importance of international students to the Australian economy, the following recommendations may enhance the ability of the Australian higher education industry in general and Victorian universities specifically, to consolidate this location as an education hub for international students. The recommendations include:

1. Every organisation must deal with the reality of finite resources and the university sector is no exception. In order to maximise efficiency, universities should focus their resources on four key aspects of university service - academic services, courses offered, access and augmented services – as these share the strongest relationship with overall satisfaction. Such a focus need not be further segmented as student attitudes towards these areas are consistent across gender and nationality, with education level serving as the only exception.

It is recommended that Victorian universities promote these services to international students at marketing events overseas. This can be done through educational fairs held overseas and by providing detailed testimonials from international students who are satisfied with these particular services. By emphasising these services as being exceptional, Victorian universities could place themselves in a stronger position and differentiate their service offering from that of their competitors.

It is also recommended that Australian universities monitor international student satisfaction with these key service factors via regular surveying techniques.

2. According to Srikatanyoo (2002), if a university is to succeed in the long term, it must develop the capacity for identifying the variables of most importance to students. This study has identified these factors as being (in descending order of importance):

I. Augmented services
II. Academic services
III. Access
IV. Courses offered

At first glance, this finding may appear somewhat surprising. With previous studies showing that academic services and courses offered serve as salient determinants over international students' choice of university (Joseph & Joseph, 2000; Kwan & Ng, 1999), one might expect that they would also serve as the primary determinants of overall satisfaction. However it is augmented services that serve as the factor sharing the strongest relationship with overall satisfaction. One possible explanation for this is that the food and transport options on offer hold unique importance to international students. Peoples' taste in food is likely to be closely linked to their differing cultures; a defining characteristic of international students. Similarly, for various reasons international students often opt not to obtain an Australian Driver's License, making them dependent upon transport services serving their Campus. For these reasons, augmented services such as food and transport must serve as key elements of any marketing strategy targeted towards international students.

The notion that academic services and courses offered could also considered as salient determinants of overall satisfaction is far less surprising. There are two key reasons for this. Firstly, such a result has been a common theme in numerous preceding studies (i.e. Arambewela, et al., 2005; Diamantis & Benos, 2007; Gamage, et al., 2008; Telford &

Masson, 2005). Secondly, both factors serve as key determinants in students' initial choice of university (Brennan, 2001; Price, et al., 2003; Soutar & Turner, 2002) and are therefore likely to serve as key determinants of satisfaction as well.

As such, the results of this study reaffirm that in order to attract and retain international students, universities should continue to recruit academics with a strong background in teaching, and to train and motivate them to ensure they continue to provide the high quality teaching service that international students seek. Moreover, universities must continue to monitor the employment market to ensure their courses are properly aligned with the labor market – both domestic and international – to ensure that the courses they offer maximise the likelihood of employment in desired fields upon graduation.

Student access to buildings and facilities, the library and recreational clubs is the fourth and final factor that shares a relationship with overall satisfaction. International students obviously require accommodation and for a variety of reasons (e.g. economic, proximity, campus life) many opt to reside on-campus. This creates the potential for international students to utilise certain university services beyond the usual 9-to-5 timeframe, provided such services are made available via extended opening hours. International students will also be away from their usual support networks (e.g. family and friends) and therefore logically assign value to the sort of social and recreational opportunities that university clubs and societies can offer. For this reason, access must also serve as a key component of any marketing strategy aimed at international students.

3. It is clear that the internationalisation of education has created an extremely competitive market place that is very different from the local market. It is recommended that the types of marketing strategies used in creating and supporting the demand for international education should be considered more carefully. Victorian universities need to streamline their strategies for internationalisation. To achieve this mission, the recommendation is that Victorian universities promote their high performing factors aggressively to potential international students by explaining the high levels of

satisfaction and quality offered. A key aspect of this strategy would be the use of international student 'ambassadors', whose role would be the dissemination of credible student testimonials about the positive aspects of Victorian universities. Hence in effect, they would be serving as *product endorsers*. This communication channel could prove a very valuable line of distribution of information, which could influence the opinion of potential students and their families. This idea is consistent with the finding of this study, that overall satisfaction shares a positive relationship with behavioural intentions. Therefore, implementing deliberate strategies designed to encourage word of mouth activity and working with student ambassadors could provide a valuable outcome to Victorian universities.

4. The main objective of the study was to identify the key determinants of overall satisfaction and the subsequent impact on behavioural intentions. While inferential analysis reveals that students were satisfied with all six service elements, only four of these - *academic services, courses offered, access, and augmented services* – were found to influence international students' overall satisfaction. Given the reality of finite resources, it is recommended that Victorian universities' focus their resources on these four factors. Such strategic action is likely to result in a more direct impact on overall satisfaction, which in turn is likely to result in student attraction (via recommendations and positive word of mouth communications from present students) and retention (via re-enrolment).

It is important for Victorian universities to expand their role in managing international students, not only by providing good quality services but also by evaluating more closely the extent to which international students are satisfied. This study has provided an evidence-based analysis of the service elements of Victorian universities, upon which a more informed approach to marketing using the strongest features of current service provision should be emphasised to international students. By targeting marketing messages towards these features, a positive image for Victorian universities providing excellent service to international students can be created and sustained.

6.4 LIMITATIONS OF THIS STUDY

There are five key limitations associated with this study:

1. An over-riding goal of this study was to gain insight into the attitudes of international students based on a sampling frame comprising 9 Victorian universities. The fact that only 4 of these universities agreed to participate in the study should be taken into account when looking to generalize its findings.
2. The gender split of males and females in this study was 43.5% and 56.5% respectively. When compared to the population's gender split of 51% male and 49% female (Australian Education International (AEI), 2011), it indicates that males are slightly under-represented in this study.
3. Nationality served as a key variable in this study for measuring the moderating impact of student characteristics on attitudes. In order to meet the necessary assumptions for conducting ANOVA tests, it was necessary to reduce the original number of different nationalities (46) into a more manageable number of categories (5). In combining individual nationalities into regional groupings it is possible that some nationality-specific differences went undetected.
4. Another potential limitation is the inclusion of post-graduate students in the sample. Had any of these students attained their degree with the same university, it could bias the results in relation to the overall satisfaction level reported. Unfortunately, the need to test for any such incidence was overlooked in the questionnaire design. However, while this serves as a limitation, it is not overly significant given that the focus of the study is on identifying the determinants of satisfaction, rather than the level of satisfaction per se.
5. Each of the scale items utilised in this study was drawn from a previous study. For several items, this resulted in the use of what may appear to be scales that were operationalised via double-barreled examples. For example, to ensure consistent interpretation of what was meant by the term "teaching methods used

in the classroom" it was followed by the following example "(e.g. group projects, class discussion)". While subsequent analysis of model fit indicated no adverse effect on validity, the potential limitation in using such scales should be taken into account.

6.5 RECOMMENDATIONS FOR FUTURE RESEARCH

This study has provided a range of insights into international students' experience with Victorian universities. The following notes provide indicators for further research to extend upon the findings reported here.

1. The effective sampling frame for this study was limited to four Victorian universities. While the total number of respondents was 363 - an acceptable sample size - the limitation of drawing the sample from just four of the nine Victorian universities limits the generalisability of the research. A larger sample representative of all Victorian universities could extend upon the current results.

2. Further analysis of the moderating effects of student characteristics could be undertaken in future research. It would be advisable to continue this line of research by looking deeper into how student characteristics may influence the relationship between overall satisfaction and behavioural intentions. There are a variety of student characteristics that could moderate this relationship and this study measured just three of these – gender, nationality and education level. Other characteristics that could be tested in future research could include age and faculty (e.g. business, arts, science etc).

3. While this study tested for the impact of nationality on satisfaction, the analysis was limited by the sheer number of different countries from which the respondents originated. This created the need to categorise individual nationalities into a smaller set

of regional groupings. This methodological process may have masked actual differences in satisfaction between individual nationalities. Future research might instead focus on a smaller number of nationalities so that a more valid comparison of country-of-origin effects could be undertaken. On the basis of the findings from this study, such a comparison might be limited to just those students from key Asian countries such as China, Indonesia and Malaysia.

4. A further suggestion to extend upon this research is to focus on those factors that were found to share no direct relationship with overall satisfaction: *administrative services* and *physical evidence*. While such a finding has significant implications for the way in which universities should allocate their resources, the fact that it contradicts so many preceding studies (i.e. Arambewela & Hall, 2009; Gamage, et al., 2008; Koilias, 2005; Mavondo & Zaman, 2000), indicates the need for further research.

6.6 CONCLUSION

The contributions of this study have been discussed in this chapter and a number of recommendations for marketing applications have been provided, based on the results. Such recommendations can be used as a guide in developing an approach to promoting the high performing and most relevant university services to international students. Universities and other higher education institutions around the world are competing aggressively to attract international students. A more strategic approach to international student recruitment should be taken to ensure universities have an evidence base upon which to confirm the services that are performing well from the students' perspective, and then emphasise these in promotional efforts. It is those universities that are informed about the needs and expectations of international students that are most likely to retain more sustainable student recruitment outcomes in this competitive environment.

A list of recommendations for future research has been provided that can extend upon these results. To conclude, for universities in Victoria, developing a more effective and sustainable approach to international student recruitment is an arduous task. Universities should keep abreast of international students' expectations and their levels of satisfaction. Universities must accept the notion that the central theme underpinning international students' behavioural intentions is their satisfaction with the service they receive. In the same way that the international tertiary market is financially significant, the international student experience is a financially expensive one. International students therefore seek value-exchange from their university, and so it is the responsibility of the latter to ensure that the services it provides are delivered in a way that ensures students' are satisfied and that they feel their investment (both time and money) has been honoured (De Wit & Verhoeven, 2000).

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APPENDIX A

Australian Government

Australian Education International

AEI International Student Enrolment Data 2008

Table 9a: Higher Education Year To Date Enrolments by Top 10 Nationalities by State/Territory for October 2008

Nationality	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Total
China	22,340	14,832	5,230	4,184	2,310	830	37	1,342	51,085
India	7,868	11,842	3,054	1,858	1,212	151	66	337	26,386
Malaysia	2,301	6,087	1,715	1,775	2,843	635	9	421	15,586
Hong Kong	3,074	2,571	1,247	642	894	68	3	235	8,734
Singapore	1,339	2,443	1,146	472	1,614	160	2	324	7,500
Indonesia	2,397	3,283	468	201	876	18	34	129	7,406
Korea, Republic of (South)	3,073	1,083	1,338	383	231	68	1	199	6,376
Thailand	1,616	1,487	461	167	259	82	10	136	4,218
Viet Nam	1,170	1,642	387	277	185	64	7	132	3,864
Taiwan	949	684	1,402	170	104	32	2	85	3,438
Other nationalities	15,746	11,379	9,735	2,005	5,148	423	161	1,161	45,758
Total	61,871	57,343	26,183	12,114	15,476	2,531	332	4,501	180,351

APPENDIX B

MONASH University

Monash University Human Research Ethics Committee (MUHREC)
Research Office

Human Ethics Certificate of Approval

Date:	**1 March 2010**	
Project Number:	**CF10/0305 - 2010000123**	
Project Title:	**International students' satisfaction on important attributes of university services and their behavioural intentions: Victorian universities**	
Chief Investigator:	**Prof Valerie Clulow**	
Approved:	**From: 1 March 2010**	**To: 1 March 2015**

Terms of approval

1. The Chief investigator is responsible for ensuring that permission letters are obtained, if relevant, and a copy forwarded to MUHREC before any data collection can occur at the specified organisation. **Failure to provide permission letters to MUHREC before data collection commences is in breach of the National Statement on Ethical Conduct in Human Research and the Australian Code for the Responsible Conduct of Research.**
2. Approval is only valid whilst you hold a position at Monash University.
3. It is the responsibility of the Chief Investigator to ensure that all investigators are aware of the terms of approval and to ensure the project is conducted as approved by MUHREC.
4. You should notify MUHREC immediately of any serious or unexpected adverse effects on participants or unforeseen events affecting the ethical acceptability of the project.
5. The Explanatory Statement must be on Monash University letterhead and the Monash University complaints clause must contain your project number.
6. **Amendments to the approved project (including changes in personnel):** Requires the submission of a Request for Amendment form to MUHREC and must not begin without written approval from MUHREC. Substantial variations may require a new application.
7. **Future correspondence:** Please quote the project number and project title above in any further correspondence.
8. **Annual reports:** Continued approval of this project is dependent on the submission of an Annual Report. This is determined by the date of your letter of approval.
9. **Final report:** A Final Report should be provided at the conclusion of the project. MUHREC should be notified if the project is discontinued before the expected date of completion.
10. **Monitoring:** Projects may be subject to an audit or any other form of monitoring by MUHREC at any time.
11. **Retention and storage of data:** The Chief Investigator is responsible for the storage and retention of original data pertaining to a project for a minimum period of five years.

[redacted]

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APPENDIX C

Part A: Satisfaction

The following are the attributes of university services that you have experienced during your study at your university. Based on the scale below, please indicate your level of satisfaction with these attributes. If an attribute is not relevant to you, please choose "N/A" (not applicable). As you read these attributes, please begin with "To what extent are you satisfied with…..(e.g. the expertise of the lecturer to teach the subjects)".

Very dissatisfied	1	2	3	4	5	6	7	Very satisfied

To what extent are you satisfied with….

	Satisfaction rating							
1. The teaching methods used in the classroom (e.g. group projects, class discussion)	1	2	3	4	5	6	7	N/A
2. The learning materials used in the classroom (e.g. handouts, lecturer's notes)	1	2	3	4	5	6	7	N/A
3. The assistance from lecturers to solve students' study problems	1	2	3	4	5	6	7	N/A
4. The lecturers' interaction with students (e.g. friendly)	1	2	3	4	5	6	7	N/A
5. The accessibility to campus buildings and facilities (24/7 access)	1	2	3	4	5	6	7	N/A
6. Library operating hours	1	2	3	4	5	6	7	N/A
7. The various clubs and societies for students	1	2	3	4	5	6	7	N/A
8. The way administrative staff solve students' complaints	1	2	3	4	5	6	7	N/A
9. The operating hours of the administration office	1	2	3	4	5	6	7	N/A
10. The administrative staff's attitude when dealing with students	1	2	3	4	5	6	7	N/A
11. The way administrative staff treat students from different religions and races	1	2	3	4	5	6	7	N/A
12. The transport services for students (e.g. bus, taxi)	1	2	3	4	5	6	7	N/A
13. The range of foods in the university café	1	2	3	4	5	6	7	N/A
14. The food prices at the café	1	2	3	4	5	6	7	N/A
15. The university location (e.g. near shopping mall and public amenities)	1	2	3	4	5	6	7	N/A
16. The design of university buildings	1	2	3	4	5	6	7	N/A
17. The university environment (e.g. cleanliness)	1	2	3	4	5	6	7	N/A
18. The subjects offered in the courses (e.g. subjects in marketing such as research methodology)	1	2	3	4	5	6	7	N/A
19. The course specialisations in the degree programs offered by the university	1	2	3	4	5	6	7	N/A

20. The relevance of the courses to future jobs	1	2	3	4	5	6	7	N/A

Part B: Overall satisfaction

The previous section was about your rating of services provided at your university. This section requires you to rate your overall satisfaction with your university. Please click on the number that best reflects your overall satisfaction with your university.

1 2 3 4 5 6 7
Very dissatisfied **Very satisfied**

1. In general, how satisfied are you with your university?	1	2	3	4	5	6	7
2. Based on all your experiences with this university, to what extent are you satisfied?	1	2	3	4	5	6	7
3. Overall, how would you rate your level of satisfaction with your university experience?	1	2	3	4	5	6	7

Part C: Student behavioural intentions

This section enables the research project to gauge your intentions based on your overall level of satisfaction with your university. Please click on the number to indicate to what extent you agree or not disagree with the statements.

1 2 3 4 5 6 7
Strongly disagree **Strongly agree**

1. I say positive things about my university to others.	1	2	3	4	5	6	7
2. I would recommend my university to others.	1	2	3	4	5	6	7
3. I would re-enrol (e.g. upgrade to next level of study) in this university in the future.	1	2	3	4	5	6	7

Part D: Demographic profile

This section seeks information about student characteristics (e.g. gender, level of education) that might influence levels of satisfaction. Please complete the following details about yourself.

1. Gender:

(   ) Female
(   ) Male

2. Age in years:

____

3: Current level of study?

(   ) Bachelor degree
(   ) Master degree
(   ) PhD
(   ) Other (Please specify): _________________

4: How many years have you been studying at your current university?

____

5: Country of origin:

____

General comments:
Do you have any other thoughts or comments you would like to share about your university experiences?

____
____
____
____
____