International Student Involvement in
Australian Universities

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List of Acronyms

AACUHO – Australasian Association of College and University Housing Officers
ACT – Australian Capital Territory
AEI – Australian Education International
ANOVA – Analysis of Variance
AUSSE – Australasian Survey of Student Engagement
BOOT – Build, Own, Operate, Transfer
CDU – Charles Darwin University
DET – Department of Education and Training
DFAT – Department of Foreign Affairs and Trade
DIBP – Department of Immigration and Border Protection
DIICCSRTE – Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education
FYEQ – First Year Experience Questionnaire
GLOBE – Global Leadership and Organisational Behaviour Effectiveness
HECS-HELP – Higher Education Contribution Scheme – Loan Program
HREC – Human Research Ethics Committee
IBM – International Business Machines
IDV – Individualism
I-E-O – Input – Environment – Output
IHWW – International Houses Worldwide Inc.
IIE – Institute for International Education
LLC – Living Learning Community
MAS – Masculinity
MBI-SS – Maslach Burnout Inventory – Student Survey
NEAF – National Ethics Application Form
NSSE – National Survey of Student Engagement
NSW – New South Wales
NT – Northern Territory
OECD – Organisation for Economic Co-operation and Development
PDI – Power Distance Index
QIS – Quality of Involvement Scale
QLD – Queensland
RLC – Residential Learning Community
RMIT – Royal Melbourne Institute of Technology
SA – South Australia
SAR – Special Administrative Region
SCEQ – Student Course Engagement Questionnaire
SD – Standard Deviation
SERU – Student Experience in the Research University
SIS – Student Involvement Score
SPSS – Statistical Package for the Social Sciences
SRC – Student Residential Community
SSE – Error Sum of Squares
SSR – Regression Sum of Squares
SST – Total Sum of Squares
TRH – Traditional Residential Hall
TV – Television
UAI – Uncertainty Avoidance Index
UCA – University Colleges Australia
UK – United Kingdom
URL – Uniform Resource Locator
USA – United States of America
UWES-SS – Utrecht Work Engagement Scale – Student Survey
WA – Western Australia
Abstract

International education is the fourth largest export industry in the Australian economy contributing over $19 billion per year. In 2009, the much-publicised spate of attacks on international students in Sydney and Melbourne led to a rapid decline in student numbers, particularly Indian students. The main aim of this research was to provide practical strategies for Australian universities to reduce the rate of international student attrition in order to maximise their contribution to the economy.

To achieve this aim, three objectives were identified. Firstly, to explain the differences in international students' level of involvement in out-of-class activities by using Hofstede's original cultural dimensions model. Secondly, to identify background information and characteristics that contribute to, or impact upon, international students' level of involvement. Finally, to identify the impact different residential living environments have on the level of involvement of international students. These objectives led to the three research questions that guided this project. They were: (1) How do cultural dimensions influence international student involvement?; (2) Can we predict international student involvement in out-of-class activities using background information?; and (3) Are international students living in student residential communities more involved than international students living off-campus?

An online survey questionnaire collected primarily quantitative data from 251 participants across Australia and used three main concepts to identify and predict international students' experiences while at Australian universities. Using Pearson's correlation coefficient, one-way Analysis of Variance (ANOVA), Chi-Squared test and stepwise regression analysis, this research identified 16 major findings plus another 112 statistically significant relationships. These findings either supported previous findings or represented new contributions to the international education and business literature and social science more broadly.
The practical recommendations this research project provides will be of interest to both institutional-level and government-level policy makers, academics, university support staff and tutors, and international students.
Declaration

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

I give consent to this copy of my thesis, when deposited in the University Library, being made available for loan and photocopying online via the University’s Open Access repository eSpace.

Signed by:

________________________

Dean Preddy, October 2015
1 Chapter One – Introduction

1.1 Background to this Research

At its peak in 2009, the Department of Foreign Affairs and Trade (DFAT) reported that international education in Australia was worth over $19 billion per year (DFAT 2011). The volatile nature of this market was realised at a time when a spate of unrelated attacks on international students were highly publicised throughout the Australian and Indian media (Dunn, Pelleri and Maeder-Han 2011, Baas 2014). While authorities refused to consider that these attacks were racially motivated (Dunn, Pelleri and Maeder-Han 2011) their impact on Australia’s international education sector was significant.

Australian Education International (AEI 2013) reported that international student numbers subsequently declined in recent years. However, international education remains the fourth largest export (Hare 2015) and the largest service export in the Australian economy (DFAT 2011). Approximately 56% of this economic contribution is made up of student living expenses while in Australia (DFAT 2011). This shows that the economic value of international education extends beyond the academic institutions.

With the Department of Education and Training (DET 2014) reporting an increased attrition rate of commencing international students at bachelor level over the past four years, the focus of attention should shift from recruiting international students, to improving international student retention. In this context, this research investigates the differences and challenges international students face while studying in Australian universities. The concepts of student involvement, cultural dimensions and the residential environment inform the data collection and analysis and frame the
development of strategies to improve the attrition rate of this valuable sector within the Australian economy. Given the sector is operating at 90% capacity, based on an annual attrition rate of almost 10% obtained from the Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education (DIICCSRTE 2013a), there is potential to increase the net economic contribution by reducing the attrition of international students.

1.2 Organisation of this Dissertation

Chapter one is an overview of the underlying problem that this research addresses. The key terms and concepts are used to provide the conceptual framework to describe the overall aim and objectives of the project. These objectives help to form the three propositions and subsequent research questions.

The second chapter reviews the literature of each of the main concepts and theories used in this project. Firstly, it provides an overview of the significance of the international higher education sector and the demographic background of the international student population in Australia. Secondly, a comparison of two cultural models highlights the applicability of Hofstede’s original cultural dimensions for this project. The relevance of the Hofstede’s model is then explained in the context of international tertiary education in Australia. Thirdly, chapter two explores Astin’s student involvement theory and highlights the benefits of increasing students’ level of involvement in quality activities. Finally, this chapter discusses the existing literature on student residential communities including the benefits students gain because of living in a purpose built student community.

Chapter three describes the process undertaken to develop the survey questionnaire to collect primarily quantitative data. This chapter explains the use of a third party distribution method used to ensure the anonymity of the international student
participants. Chapter three also provides an overview of the analytical techniques used to interpret the relationships between the variables.

The fourth chapter presents the findings of the data analysis. Descriptive analysis of participant responses is presented for international students’ background characteristics. Three involvement scores are calculated as a comparison of participants’ quality and quantity of involvement and their overall level of involvement. Later the chapter analyses statistically significant relationships between variables which are presented in seven categories including: Age; Time; Study; Living Arrangements; Involvement Scores; Cultural Dimensions; and Activity Interrelatedness. An analysis of the qualitative responses collected from the survey is also presented to add strength to the major quantitative findings. Multiple regression analysis was undertaken to determine the predictive power of participants’ background information on the student involvement score. Finally, the major research findings are presented.

Chapter five provides a discussion of the major findings of this research. These findings are compared to previous research to identify the unique contributions this project has made to the literature. From the 16 major findings, recommendations are presented to assist universities and practitioners in decreasing the international student attrition rate. This chapter concludes with opportunities for future research.

Included as appendix A to this dissertation is a copy of the survey questionnaire. This provides the participant consent form and each question of the survey as laid out in the online survey tool. A copy of the introductory letter and the questionnaire poster are included as appendices’ B and C respectively. Finally, an explanation of the regression equation used in this project is provided as appendix D.
1.3 Key Terms Used Throughout this Research

This section provides a general overview of the key concepts and terms used to frame this research. The full definitions of these terms and how they were measured are described in subsequent chapters. However, from the outset, it is important to identify them and explain their intended purpose within this research.

This research specifically investigates international students studying in Australia. For the purpose of this project, the term international student describes all students that are studying at a tertiary education level on a temporary student visa. This includes students on short-term exchange programs as well as those that are completing a full degree or higher-level qualification. The full definition of an international student is provided in chapter two.

Based on Astin's (1999) theory of student involvement, this research identifies the quality and quantity of students’ participation in activities in order to explain their student experience while studying in Australian universities. Astin's theory posits that a higher level of involvement will result in a better student experience and a greater level of satisfaction with the institution. The cascading impact of increasing students’ level of involvement is to increase student retention, and therefore decrease attrition. Astin’s student involvement theory is described further in section 2.4.

While not to diminish the importance of academic endeavours and achievements, this research focuses on the activities students participate in outside of the classroom. The out-of-class experience is a holistic approach to determining how satisfied students are in their new environment. The out-of-class activities included in this research range from social activities such as interacting with other international students in organised events, sporting activities such as exercising as a part of a group or a team, cultural activities such as participating in a cultural group or
association, and educational activities that are not included as part of the curriculum. The out-of-class activities and experience are discussed further in chapter three.

The survey questionnaire was designed to collect background information from international students. For this project, background information consisted of general demographic data including gender and age, details about their study level and duration, and details on employment and funding arrangements. Background information on participants’ residential living environment and their last place of permanent residence are also included. These latter two concepts are explained separately below.

The term residential environment describes where students live while they are studying. This research investigates the impact of five different residential environments for international students in Australia. Each residential environment differs in the level of support and interaction that are provided for students.

Participants’ place of permanent residence prior to studying in Australia was used as a substitute for the final concept used in this research; national culture. Hofstede’s (1980) originally cultural dimension model identified four dimensions for explaining the inherent behavioural differences between national level cultures. The power distance dimension describes the extent that members of a society accept and expect differences in power, financial wealth and authority. The individualism dimension indicates the level of focus on either the individual, or on the collective greater good of the community. The latter describes a culture with a low individualism score and is known as a collectivist society. The uncertainty avoidance dimension reflects the acceptance or tolerance to risk or uncertain situations. A society that prefers more certainty and is risk averse has a higher uncertainty avoidance score. The fourth dimension is masculinity and includes the opposite, femininity. A masculine society displays tendencies to be highly competitive, aggressive, and distinguishes between
gender roles within the community. A society that represents more feminine tendencies on this dimension values equality and is more caring towards others. These four cultural dimensions are discussed in depth in chapter two.

1.4 Research Aim and Objectives

The main aim of this research was to provide practical strategies for Australian universities to improve the retention of international students. If adopted, this could reduce the leakages from the Australian economy through the international higher education sector. This research uses Astin’s theory of student involvement to formulate these strategies. This theory proposed that increasing international students’ involvement in quality out-of-class activities, such as volunteering, will lead to an overall better student experience. It is asserted that the more satisfied students are with their overall university experience, the more likely they will be to remain at their institution until graduation.

To achieve the research aim, this project consisted of three objectives. Firstly, the project sought to explain the differences in international students’ level of involvement in out-of-class activities by using Hofstede’s original cultural dimensions model. Hofstede’s cultural dimensions model suggests there is a significant cultural distance between the Australian culture, and those of the main international markets that comprise tertiary education in Australian universities. Proposition one was developed to reflect this assumption:

Aspects of Hofstede’s (1980) cultural model can be used to explain international students’ involvement in out-of-class activities.

The second objective of this project was to identify background information and characteristics that contribute to, or impact upon, international students’ level of involvement. One example of background information is the number of hours spent
working per week. It was assumed that there would be a strong negative relationship between the number of hours an international student spends working each week and their level of involvement in out-of-class activities. Based on the above mentioned objective, it was thought that students’ working more would also have a lower overall satisfaction with their student experience and a higher likelihood that they had considered withdrawing from university. By understanding the components that contribute to, or impact upon, international students’ level of involvement, their overall student involvement score can be predicted to enable timely intervention by the international student support personnel to potentially engage with non-involved students and prevent them from having a poor student experience. This in turn would reduce attrition. From this objective, proposition two was developed:

By using international students’ background information, it is possible to predict their level of involvement in out-of-class activities.

The final objective of this research was to identify the impact of different residential living environments on the level of involvement of international students. The five different living arrangements included in the questionnaire each provide different levels of support and opportunities to students. It was thought that the more opportunities that a residential environment provides, the greater the level of involvement and the higher the student experience would be. This objective is to identify the residential environment that provides the highest level of student involvement, thereby offering the most effective environment to increase international student retention. The research proposition associated with this objective is:

International students who live in a student residential community are more socially involved than those who do not.

As a result of the aim and objectives of this project, the following section will highlight the research questions.
It is acknowledged that students who spend more time being actively involved in social and cultural activities may spend less time and energy on their studies; however, the purpose of this research is not to measure student involvement against students’ academic results. Instead, the aim of this research is to determine levels of involvement in order to increase retention and graduation rates, thereby improving the perceived quality of Australia’s higher education sector and increasing the contribution this sector makes to the Australian economy. The background premise of this research is to demonstrate that an increased level of involvement in out-of-class activities can lead international students to gain greater satisfaction with their educational experiences. This will not be done at an individual institution level; that is, this research will not compare outcomes across institutions. Instead, this study will look at the higher education sector as a whole, across Australia.

1.5 Research Questions

The existing literature, as reviewed in chapter two of this dissertation, primarily refers to students in general, in the context of student involvement and the residential environment, and people in general, with respect to much of the literature on cultural dimensions. This demonstrates a gap in the existing literature on the linkage between international student involvement, their cultural background and their residential environment. As such, the focus of this project is on international students. This led to the development of three research questions. They are:

1) How do cultural dimensions influence international student involvement?

2) Can we predict international student involvement in out-of-class activities using background information?

3) Are international students living in student residential communities more involved than international students living off-campus?
The literature review highlights the lack of existing research on international student involvement. More specifically, the literature review demonstrates the lack of empirical data examining the impact cultural differences and the residential environment have on international students' level of involvement in out-of-class activities.

1.6 Contributions of this Dissertation

This dissertation provides an original contribution to the literature. This research and the discussions of the research findings are useful to a wide range of readers. Firstly, university personnel who provide support services or teaching and academic support to international students will benefit from the in-depth understanding of the inherent behaviours identified by the cultural dimension model. Being able to predict students' level of involvement, and therefore non-involvement, and provide targeted involvement strategies to intercept and reduce non-involvement will also be of benefit to these personnel.

Secondly, policy makers, either at a university level or a government level, will take value from the findings and discussions on the impact that the residential environment can have on international students' involvement and their student experience. The relationship between funding arrangements and student involvement will also be of interest to policy makers and may help to provide guidance on targeted future spending in order to reduce attrition.

International students and their families will also benefit from the contributions this research makes to the existing literature. International students interested in giving themselves the best opportunity to succeed in an Australian university will be able to use the findings from this research to make informed decisions about the best living arrangements, the most appropriate activities to become involved in and the impact of other background information may have on their student experience. While
international students and their families may not necessarily read this dissertation prior to studying in Australia, the implementation of the recommendations that this dissertation makes should provide important improvements to the international student experience.

Finally, the approach this project takes to identify a problem and provide practical solutions to address it will be appealing to fellow researchers interested in the fields of international education and business research as well as broader social sciences.

1.7 Summary

The introductory chapter to this research has provided the contextual background to this project. The main focus of the research is to address the issue of an increasing attrition rate of international students in Australian universities. By doing this, the higher education sector can provide a greater contribution to the Australian economy. To achieve this, this project uses a number of key concepts. This chapter has outlined these key concepts and other key terms used throughout this dissertation.

From the main aim and the three objectives of the project, three research propositions and subsequent research questions were developed. These three research questions provided the framework for the literature review throughout chapter two as well as the development of the survey questionnaire.
2 Chapter Two – What We Know About:

2.1 Introduction

As Australian universities collectively teach over one million students per year and with total university expenditure accounting for approximately 1.6% of Australia’s gross domestic product (Universities Australia 2013), universities are an important part of the national economy. The Department of Immigration and Border Protection (DIBP 2014) reported 225,208 international students held temporary higher education or postgraduate research visas in Australia in 2014. Approximately 56% of the economic contribution generated by international students is made up of student living expenses while in Australia (DFAT 2011). This shows the benefit of the higher education sector to the Australian economy extends beyond the institution. For the purpose of this research an international student is defined as an individual enrolled in a higher education institution that is in Australia and who holds a temporary student visa. The DIICCSRTE (2013a) reported that attrition rates of commencing overseas bachelor level students declined annually between 2002 (13.96%) to 2009 (8.73%). However, they have since increased to 9.5% in 2012. Attention must be paid to retaining international students in higher education as they represent almost 30% of the total commencing student population at bachelor level (DET 2013). By retaining existing international students, Australian universities can reduce costs, increase revenue and provide a greater contribution to the Australian economy.

Student residential communities (SRCs) have long been used to support international students’ transitions into the Australian tertiary education system. SRCs play a key role in developing students and establishing the relationship between learning, moral and social aspects of living (Silver 2004). While not all students benefit equally from living on-campus in a residential community (López Turley & Wodtke 2010), SRCs do
play a significant role in establishing an environment for student involvement in social and cultural activities (Arboleda et al. 2003). By providing targeted support and involvement programs, students’ living in a SRCs have been found to have higher levels of involvement, interaction, and integration (Pike 1999) and to be less likely to experience loneliness or isolation (Sawir et al. 2008). Living on-campus has also been found to substantially increase the students’ chances of completion of a graduate or professional degree (Astin 1999).

By considering the nature of student involvement, their residential environment and Hofstede’s concept of cultural dimensions, this research identifies the relationships between international students’ inherent cultural backgrounds, their levels of involvement and their residential environment, in order to address international student attrition within Australian universities.

2.2 International Education in Australia

International education is continuing to increase in demand and relevance to universities worldwide. The number of international students studying at a tertiary level has more than doubled between 2000 and 2012 with the Organisation for Economic Co-operation and Development (OECD) reporting over 4.5 million students studying outside of their home country (OECD 2014). A number of factors have contributed to the increase in popularity of international education. From a host country level perspective, benefits from offering international education include increased economic contribution of the higher education sector, increased skilled workforce (as some international students choose to stay as skilled migrants after their studies) and improved mutual understanding of cultural differences within the community (Chaney 2013). From an institutional level perspective, benefits include increased revenue from full fee paying students (Forbes-Mewett & Nyland 2013),
increased perceived education quality (Gu, Schweisfurth & Day 2010), enhanced reputation (Burdett & Crossman 2012) and greater diversity on the campus (Leask 2009). From an individual student perspective, permanent migration opportunities (Chaney 2013, OECD 2014) and better employability prospects (OECD 2014) are factors that contribute to student mobility choices.

As one of the four top destinations for international students worldwide, Australia has seen a 40% increase in the numbers of international students between 2002 and 2009 (Choudaha & Chang 2012). With new markets entering the international education industry, competition to attract and retain international students is strong. With Australian universities having comparatively high tuition fees (OECD 2014), they must continue to improve their products and services in order to remain as a leader in this field.

At the time of writing this dissertation, the Australian government was preparing a response to the Chaney report (2013) “Australia – Educating Globally”. This report estimated an additional 30% increase in the number of international students in Australia by 2020. This would require an annual increase in commencements of new international students in the higher education sector of five percent, below the predicted global demand of international education (OECD 2014). If international education in Australia was to grow at the same rate as the predicted increase in global demand, “additional supporting infrastructure and community capacity” would be required (Chaney 2013, p. 32).

The Chaney report identified seven issues facing international education in Australia and provided recommendations addressing each. The issue linked to this research project is “A positive student experience” (Chaney 2013, p. 44). Australia Education International (AEI 2013) reported that while 88% of international students in higher education are satisfied with their living experience and 85% are satisfied with their
learning experience in Australia, there are a number of concerning results that may hinder the growth and success of the sector in the future. Approximately half (49%) of the students surveyed in the higher education sector were dissatisfied with the living costs and accommodation costs in Australia (AEI 2013). This dissatisfaction may lead to a diminished student experience and increased attrition rate which is consistent with the recommendations provided in the Chaney report. By answering the three research questions that drive this project, as described in section 1.5, this research will present practical solutions to addressing these issues.

2.2.1 International Students in Australia

Australia has the largest percentage of international students at tertiary level in the world. The Institute of International Education (IIE 2013) reported that 26% of total higher education enrolments in Australia were international students. By comparison, in the same year, international students represented 19% in the United Kingdom (UK), 12% in France and 11% of total enrolments in Germany. In the United States of America (USA) less than four percent of higher education enrolments were international students (IIE 2013). This demonstrates the importance placed on this sector by Australian universities. But where do these students come from and how are they different to domestic students?

International students studying in Australian universities come from over 140 different countries. The top ten nationalities represent over 70% of the total international student community studying at a tertiary level in Australia. These are primarily from Asian countries, with China (28.6%), Singapore (10.7%), Malaysia (9.0%) and Viet Nam (5.9%) providing the majority of these students (DIICCSRTE 2013b). While the gender mix varies between countries, for example approximately 70% of students from India are male whereas 60% of students from the USA are female, the total
population is quite balanced with 51% of all students identified as male and 49% percent as female (DIICCSRTE 2013c). With international students temporarily migrating to Australia from diverse backgrounds, it is important to understand their inherent cultural composition in order to provide a greater service to them. The following sections will discuss the importance of student attrition followed by the concept of national level culture. Two theoretical models used to explain cultural differences between countries will be explored with examples provided to highlight the impact of cultural differences on international students studying in Australian universities.

2.2.2 Student Attrition

In Australia, understanding, monitoring and addressing student attrition has been seen as a critically important focus for the higher education sector (Krause 2005). Student attrition, or drop-out as described by Tinto (1982), refers to the number of students that do not re-enrol in the same institution and therefore do not complete their studies. This includes transferring between institutions, withdrawal from studying altogether and non-continuation as a result of insufficient academic progression. These reasons can be categorised as either voluntary or involuntary attrition (Johnes and McNabb 2004).

The costs of student attrition are significant for universities (O’Keefe 2013) with international student costing more than a domestic student in part as a result of the significant cost of recruitment. As well as the cost associated with attrition, universities use their attrition rates as a measure of the universities performance (Johnes & McNabb 2004). Reducing student attrition is achievable by increasing involvement in extra-curricular activities (Krause 2005), increasing student support (O’Keefe 2013); improved communication with students (Buultjens & Robinson 2011); early
identification and intervention (Seidman 2005); and improving the overall university experience (Krause 2005). None of these studies, however, have considered or identified the different contributing factors linked to the attrition of international students in Australia.

Johnes and McNabb noted “understanding the determinants of why certain groups are more likely to drop out than others is of importance in underpinning government policy aimed at ensuring high completion rates” (2004 p. 24). Research question two explores the links between international students’ background information, residential living environment and their cultural dimension scores as determinants of Astin’s (1999) student involvement model to predict and intercept non-involvement. This, in-turn, will assist in reducing the rate of attrition within the international student cohort.

2.3 Culture

Defining what culture is and how it can be measured is a conceptual challenge facing researchers (Gurung & Prieto 2009). In fact, amongst social scientists, there is no agreed definition of what the term ‘culture’ really means (House et al. 2002). While most definitions have a number of consistent aspects, they each have their own nuances (Steers, Sanchez-Runde & Nardon 2010). Theories of culture range from being based on shared values, to geographic boundaries, to being based on outcomes or problem solving (Straub et al. 2002). While the definitions may vary, social scientists generally agree that culture is a phenomenon at a larger level (i.e. group or country level) that influences the behaviours, actions and interactions of individuals (Maznevski et al. 2002). For this dissertation, Hofstede’s cultural dimension model has been used. The following sub-sections will describe Hofstede’s cultural dimension model and explain why this model was selected over another well-known model. Understanding the inherent differences between cultures, through the
use of Hofstede’s cultural dimensions, may provide a valuable insight into why some students are more involved in out-of-class activities than others. This will address the first research question. The use of Hofstede’s model may also assist in tailoring activities to suit the specific needs and requirements of the international student cohorts leading to a better student experience.

2.3.1 Hofstede’s Cultural Dimensions Model

Using a data set of over 116,000 attitude surveys from one large multinational corporation between 1967 and 1973, Dutch researcher Geert Hofstede identified similarities and differences amongst 40 countries (Hofstede, Hofstede & Minokov 2010). The analysis matched employees of International Business Machines (IBM) Corporation with other employees within IBM in different countries. This enabled the comparison of people who were almost identical in all aspects, except nationality (Hofstede, Hofstede & Minokov 2010).

Culture is “the collective programming of the mind that distinguishes the members of one group or category of people from another” (Hofstede 2001, p. 9). This includes the collective experiences that condition a nation or a region, not an individual. While individuals cannot be programmed in the same way a computer is, they are gradually trained to conform to a set of social norms, rules, values and behaviours. These are inherent in everyday life and are learned from a very young age. When an individual is born, he or she enters society in an established hierarchy – the family. Families teach children, about authority, respect and the values and beliefs that are important to the family. In doing this, the family is providing the parameters the child can use while growing up. They are ‘programming the minds’ with the tools to make decisions. The family is the source of the very first social mental programming (Hofstede, Hofstede & Minokov 2010), and as such, its impact is lifelong.
Culture, and the study of cultural differences, includes the practice or use of symbols, heroes, rituals and values (Hofstede, Hofstede & Minokov 2010). While there may be some visible similarities between countries, the way they are used and the meanings they each have may differ and therefore are only fully appreciated from within the cultural context. The use of dimensions allows for the measurement and comparison of different aspects of culture, relative to other cultures (Hofstede, Hofstede & Minokov 2010). While it may be interesting to know that one culture is very family orientated, it potentially becomes useful knowledge when a person moves from one culture to another, as is the case with international students.

Hofstede’s original study in 1980 identified four cultural dimensions. These are: Power Distance (PDI), Individualism (IDV) and its opposite Collectivism, Masculinity (MAS) and its opposite Femininity and Uncertainty Avoidance (UAI). These four original dimensions will be used in this research. Hofstede’s later work expanded his initial research to include 70 countries (Hofstede 2001). In 2001, 21 years after they were originally published, Hofstede revalidated the four original dimensions. In collaboration with Hofstede, two dimensions have since been added to the original four dimensions. These are long-term orientation and indulgence versus restraint. These latter two dimensions are outside the scope of this project and are not used in the analysis due to the sparse literature on the implications and impacts in international tertiary education. The consideration of these additional dimensions should be the focus of future research into international student involvement.

Hofstede’s approach to the investigation of national cultural similarities and differences has become a classic model adopted in business studies (Rapp 2011; Sivakumar & Nakata 2001) and education (Bureik, Kohun & Skovira 2007; Cheung & Chan 2008; Lee, Becker & Nobre 2012; McCormick & Ramburuth 2001; Rienties & Tempelaar 2013; Wang 2007; Wright & Lander 2003).
Despite the breadth of studies using Hofstede’s cultural dimensions in an educational setting, few have considered all four original dimensions. Adeoye and Wentling (2007) analysed the four dimensions when investigating the usability of E-Learning systems amongst international students in the USA, however only sampled 24 students from 11 countries. This demonstrates an opportunity to contribute to the literature using a larger sample of international students from a wider range of countries.

2.3.2 Global Leadership and Organisational Behaviour Effectiveness Model

Another cultural model developed in the early 2000’s by a team of 170 researchers (Javidan et al. 2006) was the Global Leadership and Organisational Behaviour Effectiveness (GLOBE) model. The GLOBE project primarily focused on the cultural influences on organisational leadership, not leadership in general, the project involved collection and analysis of data from 17,000 managers in three industries throughout 62 societal cultures over a period of ten years (Javidan et al. 2006). Unlike Hofstede’s research which collected data from one multinational organisation, GLOBE data were collected from nearly one thousand local (non-multinational) organisations (Hofstede, Hofstede & Minokov 2010). The three industries represented in the GLOBE project were telecommunications, food processing and banking / financial services industries (Javidan et al. 2006). This section will outline the GLOBE model and its differences from Hofstede’s cultural dimensions.

The GLOBE project, which built on previous work of Hofstede and other researchers in the field of cross-cultural understanding (Shi & Wang 2011), developed nine dimensions. The nine cultural dimensions that form the GLOBE model are: 1) Uncertainty avoidance; 2) Power distance; 3) Societal collectivism; 4) In-group collectivism; 5) Gender egalitarianism; 6) Assertiveness; 7) Future orientation; 8)
Performance orientation; and 9) Humane orientation (House et al. 2002). It has been acknowledged that “the first six cultural dimensions had their origins in the dimensions of culture identified by Hofstede” (House et al. 2002, p. 6) while some of the other dimensions also include aspects of Hofstede’s work.

As part of these nine dimensions, the GLOBE model was framed around two cultural manifestations (House et al. 2002). The first was cultural practice, where participants were asked what their culture “is”. The second was cultural values where participants were asked to identify the way it “should be” (Javidan et al. 2006). In response to this, Hofstede argued that this in turn should result in 18 cultural dimensions – nine “as is” and nine “as should be” (Hofstede, Hofstede & Minokov 2010).

While there are similarities between the GLOBE model and Hofstede’s cultural dimension model, there are a number of differences. One of the differences is that the GLOBE project identified cultural dimensions on two levels, both at an organisational level and at a societal level. Hofstede argued that “organisational and national level cultures are very different phenomena and cannot even be measured with the same questions” (Hofstede, Hofstede & Minokov 2010, p. 43). The two models have covered many of the same countries; however Hofstede’s model has been expanded to cover 79 countries and regions, while the GLOBE model covers 62. Hofstede’s original dimensions cover more countries in Asia and South America than GLOBE (Shi & Wang 2011). Shi and Wang (2011) also noted that Hofstede studied both managers and non-manager employees, while GLOBE participants were only managers.

Upon comparing these two cultural dimension models, a number of factors were considered in order to select the most appropriate model for this current research. Firstly, it was found that GLOBE was based on Hofstede’s original model, amongst others (House et al. 2002) and that it maintains the structure of Hofstede’s model
(Hofstede, Hofstede & Minokov 2010). Secondly, three markets which represent 8% of the total international student population in Australian universities; Bangladesh, Pakistan and Viet Nam (DET 2013), are only measured in Hofstede’s model (Shi & Wang 2011). Finally, it was determined that the sample selection from non-managerial employees, as was the case with Hofstede’s model, is more applicable to this current research project versus data collected solely from managers. Given the expected average age of participants in this survey was in their early 20’s, it was thought that very few, if any, would have experience in managerial roles which may impact on their cultural awareness and maturity. As a result of these factors, Hofstede’s original cultural dimension model will be used in the analysis of this research. The following section will describe Hofstede’s four original cultural dimensions. Subsequent to this, subsection 2.3.7 will provide examples of how Hofstede’s cultural dimensions can be used to explain behavioural differences between international students studying in a foreign country such as Australia.

### 2.3.3 Power Distance

Inequality exists in every society. This inequality can include financial wealth, status and reputation such that champion athletes and movie stars may enjoy, or power to create and enforce the laws. The more wealth, status and power individuals have, including a combination of these, the greater the inequality between them and those people who do not have them. It could be said that the income taxation system in Australia, by way of an example, serves to balance this inequality. The more income an individual earns, the more tax he or she is required to pay. This tax is then used by the government to provide welfare, education and health care to all Australians. This simple example demonstrates that the Australian culture likes to treat individuals as equals. In other countries, the inequality is more prevalent. The PDI is a dimension that describes the way people perceive this inequality in society (Fang et al. 2013).
Hofstede defines power distance as “the extent to which the less powerful members of institutions and organisations within a country expect and accept that power is distributed unequally” (Hofstede, Hofstede & Minokov 2010, p. 61). In this context, institutions include families, schools and the broader community, whereas organisations refer to places of employment. The PDI scale ranges from low to high. In a society which has a low PDI score, such as Australia, people are treated as equals, whereas a society with a high PDI score “concentrates on an unequal distribution of power amongst members of the society” (Cheung & Chan 2008, p. 700). The PDI score is a measure of dependency within a country (Hofstede, Hofstede & Minokov 2010). In a society with a low PDI, employees are consulted, are encouraged to have input into decision making and have access to meet with managers, politicians and other hierarchy. Employees and managers will work more interdependently and everyone has equal rights. In contrast, a society with a high PDI score the hierarchy will be strictly followed and employees have limited, if any, access to managers and decision makers. Decisions will be handed to employees indicating the dependency on the hierarchy. Those with power in a society with a high PDI score will have access to more privileges, thereby exacerbating the inequality.

Where power is distributed equally, that is in societies with lower PDI scores, people are encouraged to speak their minds, voice their disagreements and challenge those in authority. Children, for example, learn to say no at an early age, are encouraged to be independent and will sometimes contradict their parents with little consequence. In societies with a higher PDI, families represent another form of unequal power distribution. Children are required to listen to and obey their parents’ instructions, while the grandparents, who are higher in the hierarchy, have the final say. Also in societies with a higher PDI, parents will continue to play a significant role in their children’s lives, while in societies that have a lower PDI, when a child grows up, they often relate to their parents more as friends than as an authority. Subsection 2.3.7
below provides examples of how the differences in power distance may impact international students studying in Australia.

2.3.4 Individualism

Individualism is the most frequently examined dimension of Hofstede’s model (Kirkman, Lowe & Gibson 2006). Along this dimension, individualism is rated as high, while its opposite with a low level of individualism is called collectivism. The individualism dimension (IDV) represents the degree of closeness or how tight-knit a community is (Fang et al. 2013), with a close community representing collectivism. Individualist societies often have loose ties amongst individuals and people tend to look out for themselves first.

In an individualist society, such as Australia, the focus of an individual is primarily on themselves, or their immediate family such as parents, children and siblings. The extended family in an individualist society is generally separate in both physical distance and personal closeness. Children are encouraged to be independent and generally move out of home when they start pursuing higher education (Hofstede, Hofstede & Minokov 2010). “Everything is seen as revolving around the self because people accentuate their own beliefs, attitudes and values” (Cheung & Chan 2008, p. 700) while instilling their own social norms and striving to achieve their own personal goals.

In a collectivist society, where the IDV score is low, the focus is primarily on ‘we’. In the first instance, this refers to the extended family where all family members contribute to raising the family and look after each other. Secondly, collective societies consider the betterment and success of the broader community before individual achievements. This creates a tendency to be loyal and committed to the family and community, which can be the only source of protection against the hardships of life.
This loyalty is expected to be reciprocated, and breaking the trust and respect of the community represents the worst decision an individual could make. Obligations to the family in a collectivist society may include financial support, emotional support and attendance at family celebrations (Hofstede, Hofstede & Minokov 2010). Within a collectivist society personal concerns are less important than the overall well-being of the community. Group decision-making and input from all community members is the social norm and generally work will be undertaken as a team. The differences between individualistic and collectivist cultures can also have an impact on international students. These differences are explained in subsection 2.3.7 below.

2.3.5 Uncertainty Avoidance Index

The Uncertainty Avoidance Index (UAI) of Hofstede’s cultural dimension model indicates the extent to which a society feels threatened by uncertain and ambiguous situations (Hofstede 1980). The UAI is measured from strong to weak (Hofstede, Hofstede & Minokov 2010) with high UAI scores being described as having a strong tendency towards avoiding uncertainty. Kock, Parente and Verville (2008, p. 35) describe uncertainty avoidance as the “extent to which a culture programs its members to feel either uncomfortable or comfortable in unstructured situations”. This level of discomfort can manifest itself into nervous stress and the need for written and unwritten rules (Hofstede, Hofstede & Minokov 2010). Extreme uncertainty creates intolerable anxiety (Hofstede 2001, p. 146). Anxiety and unease are different to fear as fear is attached to a specific situation, object (Hofstede, Hofstede & Minokov 2010) or an event (Adeoye & Wentling 2007).

A culture with a strong (or high) UAI score has tendencies to perceive unknown situations as threatening and people within this culture will try and avoid these
situations (Adeoye & Wentling 2007). When faced with uncertainty, societies with strong UAI appear cautious and systematic in their approach (Joy & Kolb 2009). Rules, regulations and laws are implemented to provide clarity. Breaking of these rules is strictly forbidden (Hofstede 1980). In a work situation, these societies have a more stable workforce, stronger loyalty to their employer and have longer than average duration of employment (Hofstede 2001). High uncertainty leads to higher levels of stress, which is released in strong UAI societies through the showing of emotions (Hofstede 2001). These higher levels of stress may result in people from these cultures being perceived as busy, fidgety, aggressive or suspicious, while in weak UAI cultures, lower levels of stress in people may result in people coming across as lazy, dull and easy-going (Hofstede, Hofstede & Minokov 2010).

Cultures with weak (or low) UAI scores will readily approach uncertainty and will appear to be more comfortable with risk and trial and error problem solving (Joy & Kolb 2009). Societies with weak UAI can appear to represent ambiguity, chaos, novelty and convenience (Joy & Kolb 2009) to societies with a stronger UAI. Precision and punctuality do not come naturally to people from countries with a weak UAI, and so these need to be learned and managed (Hofstede 2001). To members of weak UAI cultures, time is flexible and free. While cultures with a strong UAI may focus on minimising uncertainty by maintaining rules and law and order, cultures with weak UAI tend to change the rules to fit the situation, rather than change the situation to meet the stringency of the rules. In cultures with weak UAI, innovation and originality are encouraged and, given the unknown is not a deterrent, loyalty within employment is not as important. Australia’s UAI score is marginally on the weaker side of the UAI dimension. This suggests that as a nation, Australians are not risk adverse however they do appreciate a degree of certainty. The relevance of the UAI within the international education industry is explained further below in subsection 2.3.7.
2.3.6 Masculinity Dimension

Gender roles in society have existed since the beginning of humankind. In traditional societies, men were more concerned with achievements outside the home such as hunting and gathering, while women gave birth to children, breast-fed and were perceived as being more caring and tender (Hofstede, Hofstede & Minokov 2010). Despite this dimension being described in the context of gender, masculinity (MAS) and its opposite pole femininity (Hofstede 1980), the dimension does not reflect their physical characteristics (Adeoye & Wentling 2007). Masculine achievements represent assertiveness and competitiveness, while feminine achievements reflect nurturing, concern for people and the living environment (Hofstede, Hofstede & Minokov 2010). These have been described as emotional roles between genders (Kock, Parente & Verville 2008). Within societies with a high MAS score, gender roles are clearly distinct, with men being seen as tough and focused on material success (Hofstede 2001) while in countries with a low MAS score which are identified as being feminine, the line between the gender roles of men and women is blurred (Adeoye & Wentling 2007).

The competitiveness experienced in a masculine society results in a focus on material possessions with bigger and more expensive possessions seen as better. Competitive sports and success are important in these societies and therefore competitive sports are often played from a young age and may be included as part of the schooling curriculum (Hofstede 2001). Success may be measured in terms of other peoples’ perceptions, or a comparison of achievements between people in a masculine society. In these societies, jobs that may be considered as feminine will generally be lower paid (Hofstede 2001). Masculine cultures tend to have a competitive advantage in manufacturing where items are produced in high volumes in a fast and efficient manner, whereas feminine cultures tend to perform better at
service industries and in manufacturing a specific product to meet each customer’s needs (Hofstede, Hofstede & Minokov 2010).

In feminine societies, the manager of an organisation is less visible, intuitive rather than decisive and prefers to gain general team consensus before proceeding (Hofstede 2001). Sports are likely to still be competitive when played; however, they are optional rather than compulsory. Success is measured in terms of quality of life and the role of men and women in the family is more equal in dealing with both the tough and tender aspects of life (Hofstede, Hofstede & Minokov 2010). In feminine societies, people work in order to live (Hofstede 1980) while in masculine societies a greater emphasis is placed on the work life. Hofstede found that Australia is a highly masculine culture (Hofstede 1986; 2001). The implications for an international student from a feminine culture, coming to an Australian university are explained in subsection 2.3.7.

The examples provided above in each explanation of the four dimensions represent the extreme in each case. In many cases a culture will exhibit aspects of both poles of a dimension. In this case, such as Australia’s UAI, the country score on the dimension sits towards the centre. The following subsection continues to use extreme cases of each dimension to highlight some of the challenges that face international students studying in Australian universities.

2.3.7 Relevance of Culture in International Education in Australia

Differences between societies or cultures are only understood when compared against another culture (Hofstede 2001). Similar to languages and even accents, from within a culture what an individual observes on a daily basis is seen as normal. Everything else is different. How does that relate to international education? What impact do such perceptions have on international students studying at an Australian
university? This section will contextualise the four cultural dimensions with international education at a tertiary level.

Firstly, PDI refers to the extent to which the unequal distribution of power, wealth and status within a society is accepted and expected by those that do not have power. The teacher–student relationship represents one example of unequal power. Teachers in societies with high PDI scores, such as Malaysia and Singapore for example, have more power and are to be respected. The teaching environment is highly structured and students are only able to speak when a teacher invites them to speak (Hofstede, Hofstede & Minokov 2010). The reluctance of some students from cultures with a high PDI to contribute in class may be seen as a lack of confidence or understanding to a culture with a low PDI. However, this may in fact be a result of students “replicating the behaviours they have acquired as appropriate norms of conduct in a different educational and cultural system” (Sulkowski & Deakin 2009, p. 155).

Within a culture with a low PDI, such as Australia, teaching is more student-centred (Hofstede, Hofstede & Minokov 2010). Communication and learning in a classroom is a two-way process with students expected to use their initiative (Hofstede 2001). International students from cultures with a high PDI may not be comfortable asking questions of their university lecturers or tutors in Australia in order to seek clarification, as this is not appropriate in their home cultural context.

Secondly, the individualism dimension refers to the degree to which individuals are supposed to look after themselves versus the collective group (Kock, Parente & Verville 2008). Asian countries including Singapore, Viet Nam and Hong Kong represent collectivist societies, while Australia is one of the more individualist countries in Hofstede’s model. Hofstede and colleagues found that the “purpose of education is perceived differently between individualist and the collectivist societies”
(Hofstede, Hofstede & Minokov 2010, p. 118) with learning in an individualist culture being a journey that should not end, while in a collectivist culture it is primarily for the young and is about learning what people need to know to fulfil their role within society. Students from individualist cultures pursue education in order to be competitive in society. Educators and parents in individualist cultures urge the government to invest more money in education so that their children can learn better and become highly competitive in society in later years (Cheung & Chan 2008).

A teaching environment in collectivist cultures will focus on group learning. McCormick and Ramburuth (2001) found that the constructs of group and individual learning reflect collectivist and individualist cultures respectively and are significant factors influencing students’ learning style preferences. Students, particularly from collectivist cultures, learn content more effectively within in-groups (people from similar cultures) because there are likely to be fewer relational barriers (Wright & Lander 2003). In their study of Australian domestic students and international students from South-East Asia, Wright and Lander (2003) found students from collectivist cultures (South-East Asian students) appeared to be non-assertive, while students from an individualist society (Australian students) were more dominant.

Thirdly, Hofstede’s UAI has been found to be significantly related to learning styles, with societies having strong UAI preferring reflective observation styles, while those with weak UAI favouring active experimentation style (Yamazaki 2005). This is consistent with Joy and Kolb (2009), who found both teachers and students in an educational system with strong UAI are more comfortable in an environment which is structured and has clear objectives and guidelines.

A students’ expectation of teacher in a country which has a strong UAI, such as South Korea and France, is that they will be experts and will have the answers to all questions (Hofstede 2001). These students prefer facts and problems with only one
answer. They expect to be rewarded for accuracy (Hofstede 2001). In contrast, in countries with weak UAI, such as Singapore and Hong Kong, students prefer open-ended learning with awards being granted for originality and not necessarily the correct answer. Australia has a marginally weak UAI score and therefore is likely to have a balance of learning styles, relative to the two extremes described.

Finally, as characteristics of a masculine culture reflect competitiveness, achievement, drive and ambition (Adeoye & Wentling 2007), it is not surprising that students in a classroom compete for visibility and to be the best in class. Striving to be the best is seen as the norm in these cultures, whereas in feminine cultures where equality is preferred, the average student is the norm (Hofstede, Hofstede & Minokov 2010). Teachers in a feminine culture praise below average students as a form of encouragement, rather than celebrating their successes. Being the best student may be thought of as showing off within a feminine learning environment. Further to this, failing in school is seen very differently between masculine and feminine cultures. Hofstede asserts that failing at school in a masculine, competitive culture is seen as a disaster, whereas in a feminine culture it may be referred to as a minor incident (Hofstede 2001). The overlapping gender roles in feminine cultures see male students, in particular, being not as ambitious or competitive (Hofstede 1986). Japan, South Africa and Austria are amongst the most masculine cultures in Hofstede’s study. At the other extreme, Sweden and Norway have the lowest masculinity scores and are therefore labelled as feminine cultures. Australia is on the masculine side of the dimension. Japanese students studying at an Australian university may be frustrated by the lack of public acknowledgement of their success and achievement, whereas a student from Sweden would likely find the little celebrations that do occur to be overwhelming and unnecessary.
2.4 Student Involvement

Every student who does not persist to graduation is both a financial cost to an institution and a lost revenue opportunity (Wild & Ebbers 2002). In addressing the importance of student retention and reducing student attrition, research over the past 25 years has identified benefits of student involvement. While there is still some debate over the definition of student engagement and student involvement, the overarching principle is the more involved or engaged students are, the more likely they are to graduate (Coates 2009). This section firstly explains the key ways in which student involvement can be understood. Then it highlights the benefits of student involvement on a societal, institutional and individual level.

Although researchers have identified a number of predicting factors that determine the level of engagement and involvement of students (Alarcon, Edwards & Menke 2011; Arboleda et al. 2003; Astin 1999; Bowman et al. 2010; McEwan & Guerrero 2010; Ramachandran 2011; Sharma & Bhaumik 2013; Zhao & Kuh 2004), there is a lack of data on whether national cultural background can be used to determine and predict students’ involvement. There is also a lack of specific research and therefore a knowledge gap into the use of background information to predict international students’ level of involvement. By predicting international student involvement in out-of-class activities based on their background information, their culture and their residential living environment, strategies could be developed to address non-involvement and thereby reduce international student attrition. This addresses the second research question that guides this project.

The terms student involvement (Astin 1999), student engagement (Kuh 2001) and to a lesser extent, student integration (Tinto 2005) are often used interchangeably. The intent of each of these concepts is to measure and thereby improve student retention, success and persistence leading to students graduating. Wolf-Wendel, Ward and
Kinzie (2009) explained that while there is an overlap between these three concepts, they each add something unique and important to the literature.

The student involvement theory posits that involvement is the amount of physical and psychological energy that the student devotes to the academic experience (Astin 1999). This theory recognises the time and energy a student invests in their experience, and also acknowledges the contribution of the environment (Wolf-Wendel, Ward & Kinzie 2009). This not only relates to academic contributions, but also out-of-class and extra-curricular activities in which individuals are involved. Astin’s model of measuring student involvement consists of factoring the Input – Environment – Output (I-E-O) of individuals (Astin 1993, Wolf-Wendel, Ward & Kinzie 2009). While the I-E-O model for student involvement considers the role of institutions, it is measured on the students’ individual involvement as it is the individual who controls the extent to which he or she is involved. Wolf-Wendel, Ward and Kinzie (2009) note that institutions use the results of student involvement surveys to develop programs and activities in order to create opportunities for students, and encourage students to become involved.

Student engagement theory has its origins in the mid 1980s (Sharma & Bhaumik 2013). While it is not an extension of the student involvement theory (Wolf-Wendel, Ward & Kinzie 2009), student engagement theory considers the time and effort students invest in activities while at a higher education facility, and the efforts or contributions made by the institutions (Kuh et al. 2008). By linking students’ engagement level to the institution, Kuh et al. (2008) suggest the institution can monitor the impact of its policies, processes and resource allocation in student persistence and retention. Krause and Coates (2008) note that while the individual has the final responsibility for his or her own level of engagement, the institution is responsible for creating an environment and opportunities that are conducive to learning. This should include both inside the classroom and the student experience.
as a whole (Burdett & Crossman 2012). Wolf-Wendel, Ward and Kinzie (2009) report this as being the amount plus depth of a student’s engagement resulting in positive student outcomes.

Amongst researchers in the field of student involvement and engagement, there is considerable difference and confusion in the use of terminology. These terms are described as activities focused on improving an individual student’s learning (Coates 2008), improving the overall culture of the campus (Leask 2009), having a positive and fulfilling state of work that is defined by vigour and dedication (Alarcon, Edwards & Menke 2011) and having time and effort invested by students (Kuh et al. 2008). Each of these contain a similar element of students participating in activities and events, whether academic or social, outside of the traditional classroom setting. This highlights that students learn in a number of different ways (Sharma & Bhaumik 2013). Kuh (2001) found that what students do while in the American college system, can contribute more to their overall achievements, than what college they go to. Astin himself acknowledged that there is “no essential difference” between the terms engagement and involvement and trying to distinguish the two terms would be unproductive and unnecessary (in Wolf-Wendel, Ward and Kinzie 2009, p. 417).

While there are many differing iterations of the definition of student involvement and engagement, researchers agree that the constructs are multidimensional (Sharma & Bhaumik 2013). However there are also differing opinions of the number and content of these dimensions. For instance, Fredricks, Blumenfeld and Paris (2004) identified three dimensions of student engagement as: (1) Behavioural engagement indicating such items as attendance and involvement; (2) Emotional engagement indicating their level of interest, enjoyment or sense of belonging; and (3) Cognitive engagement represented by students going above and beyond the requirements or what is expected. Handelsman et al. (2005) developed four dimensions of student engagement. These include: (1) Skill engagement such as taking good notes in class
and reviewing them before the next class; (2) Emotional engagement such as thinking about the material and applying what they have learned in real life; (3) Participation/interaction engagement including asking questions in class; and (4) Performance engagement reflecting getting good grades in tests. With reference to extra-curricular activities, Mahoney, Cairns & Farmer (2003) identified three dimensions of involvement as: (1) Voluntary participation; (2) The degree of activity structure; and (3) The level of challenge or effort required by the participant. These latter dimensions are used to interpret and explain the measures of student involvement revealed by this research project.

In writing this dissertation, the author has taken a normative approach to student involvement (Trowler 2010). The normative approach suggests that students’ involvement is a positive situation, and therefore non-involvement of students’ is not positive. Trowler (2010) purposefully does not use negative involvement as the opposite of being involved, as this implies a level of conscious time and effort. An example of negative involvement would be staging a protest or boycotting class. Both of these require conscious effort and motivation to act.

Kuh et al. (1991) used the analogy of time spent in college (or at a university in the Australian context) to describe the importance of focusing on out-of-class activities. Out of the 168 total hours in a week, a full time student is likely to study for between 40 to 50 hours per week. If 50 hours per week are added for sleeping, up to 20 hours per week working (given the limitations placed on international students in Australia), there are still approximately 50 hours per week of discretionary time for international students. It is this discretionary time that is of interest in this project.

Astin’s theory of student involvement (1999) refers to the quality and quantity of effort a student dedicates to his or her experience while at university. Astin’s I-E-O model (1993) to measure student involvement utilises a longitudinal study assessing
students on a range of factors upon entry to university (input) and again upon completion (output) to determine the impact of varying environmental factors on involvement. While this type of study provides the ideal measure of study, due to resource constraints it is beyond the scope of this project. However, it is the theoretical concept of Astin’s quality and quantity of out-of-class activities that is used in this research. How student involvement is operationalised in this research is discussed in chapter 3.

The use of the term out-of-class activities in this research is inclusive of the terms extra-curricular (Leask 2009; Stuart et al. 2011); informal peer group or colloquia (Vines 2010); formal and informal activities and processes (Fowler & Zimitat 2008); participation (Coates 2010b); and learning communities and cohort groups (Wild & Ebbers 2002). The term quality of involvement is used in this research to differentiate between students having a social drink at a university bar (which represents a low quality activity) and students volunteering in an organised community event or activity (which represents a high quality activity). This definition guided the development of a student involvement questionnaire for this study and is described further in section 3.4 below.

2.4.1 Predictors of Student Involvement

It is recognised that while studying at an academic institution students do not just develop academically, but socially and morally (Silver 2004) as well as culturally (Burdett & Crossman 2012). This shows that a measure of student involvement requires consideration of both quality and quantity of students’ involvement.

Researchers have identified a number of factors that can be used to predict levels of student involvement and engagement. These include courses studied (Arboleda et al. 2003; Bowman et al. 2010), duration of study (Bowman et al. 2010; Ramachandran
2011; Sharma & Bhaumik 2013), gender (Arboleda et al. 2003), level of contact with staff (Arboleda et al. 2003; Sharma & Bhaumik 2013), facilities available (Sharma & Bhaumik 2013), residential environment (Astin 1999; Zhao & Kuh 2004) and communication skills (Alarcon, Edwards & Menke 2011; McEwan & Guerrero 2010; Ramachandran 2011).

While most studies into student involvement have investigated the impact of demographic characteristics (Alarcon, Edwards & Menke 2011; Arboleda et al. 2003; McEwan & Guerrero 2010), none have identified whether participants’ national cultures, or permanent places of residence play a role in determining the level of student involvement. Zhao, Kuh and Carini (2005) compared international and domestic student engagement in America, however only identified race and ethnicity as being either black, white, Asian or Latino. Fischer (2007) claimed to determine whether race or ethnicity would predict students’ involvement within college life, however only differentiated students as black, Hispanic, Asian or white.

Coates (2010b) looked at international student engagement using the Australasian Survey of Student Engagement (AUSSE) and compared the results of international students’ engagement in Australia and New Zealand, with international student engagement rates in the USA using the National Survey of Student Engagement (NSSE) data. However, this too did not identify any predictors of student engagement for international students, nor did it integrate the demographic data to determine if different nationalities or cultural backgrounds engage more than others.

Li, Chen and Duanmu (2010) looked at predictors of international student success in relation to academic performance; however, while collecting data for six nationalities, classified the participants as either Chinese or “other international” students. Hernandez et al. (2013) found that student engagement was valid in four specific
cultural backgrounds, but cautioned against using a one-size-fits-all approach in determining and comparing engagement amongst different cultures.

Given the size, diversity and value of international education to the Australian economy, being able to predict international students’ involvement in out-of-class activities is vital. Being able to respond appropriately to non-involvement could lead to increased student retention, increased student success and an increased economic contribution made by the sector. The lack of research and understanding of the link between cultural background and student involvement points to a significant gap in the current literature. This research addresses this gap and uses Hofstede’s classical cultural dimension model to identify a relationship between students’ level of involvement and the cultural background amongst different international student cohorts.

2.4.2 Benefits of Being Involved

Students who are involved with their academic institution and learning discipline are more likely to succeed with their desired outcomes and graduate (Astin 1999; Kuh 2009; Tinto 2005). This helps to reduce attrition and encourage persistence from first year students through to graduation. For the purpose of this research, the benefits of student involvement have been grouped into three equally important categories: institutional and academic benefits, personal benefits and societal benefits.

At an institutional level, increased student involvement can have both reputational and financial benefits (Trowler 2010; Wild & Ebbers 2002) and has been linked to a higher level of satisfaction and perceived quality of the institution (Burdett & Crossman 2012; Kuh 2001). By strengthening the reputation and perceived quality of an institution through involving students, Trowler (2010) noted that it makes sense for institutions to use this for marketing purposes. Academic benefits of student involvement include
advanced skills in analysing, synthesis, evaluation and application (Coates 2008) and will result in improved critical thinking and persistence (López Turley & Wodtke 2010). While these studies highlight the benefits of student involvement on academic achievements, Pike (1999) acknowledged that exposure to a variety of different viewpoints may be translated to gaining a broad and liberal education, but it does not necessarily increase students’ intelligence. Bowman et al. (2010) added that academic and community-related pursuits, such as being involved in the broader community, may be competing rather than complementary. Therefore, a careful balance is required between the quantity and quality of students’ involvement in out-of-class activities.

There are a number of personal benefits of increasing students’ level of involvement. Arboleda et al. (2003) introduced a circular pattern of student involvement, which suggested the more involved students become, the more they feel supported and satisfied. The more supported and satisfied students are, the more involved they tend to become. It has also been established that increased engagement will result in improved critical thinking, problem solving, effective communication and responsible citizenship (Kuh 2001) and can lead to increased sense of identity, self-confidence, interpersonal communication skills and can contribute to students’ overall well-being (Ramachandran 2011).

Sixty-five percent of international students in Australia identified themselves as experiencing loneliness and isolation (Sawir et al. 2008). These can be contributing factors to mental health issues. Those who did not experience feeling loneliness or isolation had good social networks and support groups (Sawir et al. 2008). This implies higher levels of student involvement reduce loneliness, reduce possible mental health issues and improve student well-being. Further to this, Bowman et al. (2010) found that students in America, who were engaged during their college years,
were more engaged throughout their adult life which resulted in a positive association with several forms of well-being.

While improved mental health and well-being can be reported as being a personal benefit of increased student involvement, they can also be seen as a benefit to society in general. Given the financial cost of mental illness in Australia is over $20 billion per year (Department of Health 2013) it seems logical to increase student involvement during university years in order to reduce the long-term cost to society. This adds further support to Bowman et al. (2010) claim that engagement in college is maintained throughout life and leads to improved well-being.

Trowler (2010) noted that student engagement in university governance, for example, provides valuable exposure to democratic practice and empowers students to participate as informed community members. These practical and meaningful experiences help to develop skills and attitudes that are useful for future leaders within society. This again highlights the importance of student involvement and engagement in the early stages of university life.

Russo, van den Berg and Lavanga (2007) note that involving students in the broader community, helps to retain the human and intellectual capital in that particular community, after graduation. They continue by suggesting that this maximises the benefit from knowledge and cultural contributions of a diverse local community (Russo, van den Berg & Lavanga 2007). While not directly attributed to higher levels of student involvement, having a strong and active student body within the local community can lead to physical and social planning for civic revitalisation (Macintyre 2003) and improved quality of life as a result of increased leisure infrastructure (Russo, van den Berg & Lavanga 2007). Given the outcome of student involvement is reduced student attrition, improved institutional reputation and institutional growth; these can be attributed to the benefits of student involvement on a societal level.
2.5 The Residential Environment

Tertiary education providers have long been using SRCs to support students’ transitions from the secondary to the tertiary education system. In Australia, the student accommodation environment is significantly different to that of other countries. Less than fourteen percent of first year students and less than six percent of third year students in Australia live on-campus within a residential hall or college (Coates 2009). In analysing the impact of the residential environment on student engagement, Coates (2009) compared the results of the AUSSE and the American NSSE, as described in section 2.4.1, and explained that students in the USA routinely live on-campus as a transition from high school into the working environment. Given the low proportion of students that live in SRCs in Australia, additional research is needed to identify the impact of other living arrangements on student involvement and attrition. This research addresses this literature gap.

Coates and Edwards (2009) suggest that SRCs in Australia have been supporting universities for over 150 years. They continued by adding that there are over 100 SRCs in Australia offering a range of services from just providing accommodation to providing academic, social and cultural programs (Coates & Edwards 2009). Generally within Australian universities, SRCs provide residents with private bedrooms, shared bathrooms and recreational areas such as TV rooms, music rooms and other social spaces (Paltridge, Mayson & Schapper 2010).

SRCs play a key role in developing students holistically (Silver 2004). The SRC experience provides opportunities for students to share and discuss differing values including religious, political, economic, racial or philosophical values on a daily basis (Wallace 1980). Further to this, LaNasa, Olson and Alleman (2007) propose that SRCs provide the greatest opportunity for student engagement and involvement, and therefore provide the best potential benefit for student learning, growth and development.
Students living in SRCs report higher levels of satisfaction with their academic institution than those living off-campus (Coates & Edwards 2009; LaNasa, Olson & Alleman 2007), have higher persistence to graduation (Astin 1999; Kuh et al. 2008; Zhao & Kuh 2004), have a higher sense of physical security and a reduced threat to their social security (Paltridge, Mayson & Schapper 2010) and tend to be more involved (Grayson 1997). While these studies provide interesting general conclusions regarding the living arrangements for university students, they fail to provide recommendations to improve the involvement of specific groups of students, such as international students.

Pike (1999) added to the research on the residential environment by further defining the types of SRCs as being either a Residential Learning Community (RLC), which are designed to increase involvement, improve faculty-student interaction and provide a more supportive environment; or a Traditional Residence Hall (TRH) which focuses primarily on providing accommodation. Pike (1999) found that students living in RLCs had significantly higher levels of involvement and tended to exert a more positive behavioural standard than those living in TRHs. While this research was general to all American universities, it highlights the need within university housing operations to provide important and memorable experiences (Wallace 1980) and the transformation away from being ‘business enterprises’ (Palmer, Broido & Campbell 2008).

It is the formal programs that are provided by RLCs that offer a range of enriching experiences, and enhance the academic offerings of an institution to provide a whole experience (Coates & Edwards 2009). Further to this, Terenzini, Pascarella and Blimling (1996) used the term ‘Living-Learning Centres’ (LLCs) adding that the advantages students gain from living on-campus may not be as a result of the physical location, but more as a result of the interpersonal interactions that SRCs promote. Some LLCs have been developed to incorporate faculty within the residential
community, provide additional tutorial support and offer non-credit seminars (López Turley & Wodtke 2010).

Not all students benefit equally from living on-campus in a residential community (López Turley & Wodtke 2010). In fact, research has demonstrated that living on-campus has little if any positive impact towards academic achievement, in comparison to living off-campus (LaNasa, Olson & Alleman 2007; López Turley & Wodtke 2010). However, SRCs do play a significant role in establishing an environment for student involvement in social and cultural activities (Arboleda et al. 2003). By providing targeted involvement programs, students living in a SRCs have been found to have higher levels of involvement, interaction, and integration (Pike 1999) and to be less likely to experience loneliness or isolation (Sawir et al. 2008). Living in a residential community has also been found to substantially increase the students’ chances of completion of a graduate or professional degree (Astin 1999).

While racial minorities were found to benefit more from living in an on-campus residential community (López Turley & Wodtke 2010), little research has been done to determine if international students from different cultural backgrounds benefit from different living arrangements or residential environments. The literature also fails to adequately address if and how different residential living environments impact on international students’ level of involvement in out-of-class activities. This research addresses this research gap by investigating five different residential options that are available to international students in Australia in order to answer research question three.

2.6 Summary

This research determines if international student involvement in out-of-class activities and the residential environment can be used to provide a better university student
experience. If they could, this would decrease attrition, thereby improving persistence to graduation. This in turn would reduce the cost to universities and increase revenue. To date, the research into student involvement and engagement has primarily been focused on engagement within the classroom environment, with a small component looking at the out-of-class experience.

Hofstede’s original cultural dimension model provides a valuable tool in identifying and explaining differences between national level cultures. The examples provided throughout this chapter demonstrate how differences between cultures, specifically the cultures of international students studying in a foreign environment, may impact upon their overall satisfaction and their ability to assimilate with their new environment. Despite this, there is a scarcity of research undertaken on the impact these cultural dimensions have on students’ participation in out-of-class activities.

This chapter reviewed the existing literature on the residential environment for higher education students. While the general findings of previous studies have demonstrated the benefit of living on-campus in a SRC, minimal information is available to explain the benefits to different international student cohorts. Also, very few studies have investigated and compared a range of different residential options.

The gaps found in the existing literature validate the purpose of the three research questions that guided this project. By jointly investigating the impact that international students’ cultural differences, background information and residential living environments have on their level of involvement in out-of-class activities; this research provides an original contribution to the literature.
Chapter Three – How This Research Was Undertaken

3.1 Introduction
This chapter describes the research methodology and methods used for this project. A description of the research population and the process that was followed to select a representative sample is provided. Following this, the original questionnaire is presented. The questionnaire was developed to determine international students’ level of involvement based on the quality and quantity of participation in out-of-class activities in order to address the research propositions. Then the process of survey administration and the data analysis methods are discussed in relation to the research propositions. This chapter discusses the analytical framework used in this project. An overview of human research ethical considerations is also provided.

This chapter justifies how each survey question was used as part of the analysis and predictor of student involvement, thereby addressing the three research questions. Descriptions of the analytical tools which enhance the validity of the findings are also presented. Using multiple stepwise regression analysis, this project predicts the factors that benefit or inhibit the level of involvement of international students. Explanations of the analysis tools highlight not only the identification and justification powers of multiple regression analysis, but also the prediction capabilities. Finally, an overview of the data predictions made which led to the development of the research propositions is provided.

3.2 Research Methodology
A mixed research methodology was used for this project. The quantitative approach allowed for the testing and verification of the Astin’s (1980) theory of student involvement using closed-ended questions. To compliment this and to provide further
insight into the reasons for international students’ behaviours, two questions that produced qualitative responses were included. Participants’ responses to the qualitative questions were used to support the main quantitative findings and provide a deeper insight into how to improve international students’ overall experiences while studying at Australian universities.

This project used an online survey as an efficient and effective method of collecting a sample from a geographically scattered population (Quinlan 2011). Surveys are widely used in measuring student involvement (Berger & Milem 1999; McKinney et al. 2004; Roberts & McNeese 2010; Sharkness & DeAngelo 2011; Strauss & Terenzini 2007; Tieu & Pancer 2009; Tieu et al. 2010) and student engagement (Bowman et al. 2010; Coates 2008, 2009; Grayson 1997; Radloff & Coates 2010; Stuart et al. 2011; Zhao & Kuh 2004; Zhao, Kuh & Carini 2005).

3.3 Participants

The following sub-sections describe the population of this research and then provide an overview of the sample collected.

3.3.1 Population of this Project

Data obtained from the DIICCSRTE (2013c) in May 2014 indicated that at the time of preparing this survey, the 2012 year was the most current and accurate data available. In that year, the total population of international students studying in Australian universities was 323,612.

The DIICCSRTE (2013c) data were used to cluster potential participants based on the state or territory of the higher education provider. Given that this project is looking at international students studying in Australia, not at a specific university or in a
specific region, this data were used to target a representative percentage of students across six state and territory clusters for the survey questionnaire. This is discussed further in section 3.4 Survey Instrument.

At this point, one limitation of the data is noted. The data identifying students “Commencing and All Overseas Students by State, Higher Education Provider and Onshore/Offshore Status, Full Year 2012” indicates that out of the 323,612 total student population, there are 82,468 students studying at off-shore campuses of Australian higher education providers. The most extreme example of this is RMIT University based in Victoria. The DIICCSRTE (2013b) data indicates that RMIT University had 9,865 international students studying onshore in Victoria, and 16,748 students studying at off-shore campuses. RMIT University has two campuses in Vietnam, one campus in Spain and partner institutions in Singapore, Indonesia, Hong Kong, China and Sri Lanka. While there are some minor differences between the total student number per state and onshore student numbers by state, this research uses the total international student figures to ensure consistency with the above mentioned data identifying country of permanent home residence. In both cases the population is N = 323,612.

3.3.2 Sample Collected for this Project

At the time of closing the survey, 251 valid responses were collected. Sixty percent of participants were female. The age range of participants was between 18 and 56 years old with the majority of participants indicating that they were between 20 to 29 years old. Participants from 49 countries completed the survey with 56.4% of participants studying at an undergraduate level. Given not all participants provided valid responses to each of the survey questions, analysis was only conducted on valid
There are potentially as many tools to measure student involvement and student engagement, as there are definitions of these two terms. Only a small number of studies use qualitative measures. These studies include semi-structured interviews (Blackhurst, Akey & Bobilya 2003; Kuh 1995) and focus groups (Vines 2010). Bowman et al. (2010) completed a longitudinal study of engagement surveying 416 participants in their freshman / first year of study, their senior / final year and again 13 years after graduation.

### 3.4.1 Existing Research Instruments

One of the largest and most popular quantitative measures (LaNasa, Cabrera & Trangsrud 2009) is the American NSSE, as described in section 2.4.1. The NSSE collects data to create five key benchmarks to assess student engagement including: 1) Level of academic challenge; 2) Active and collaborative learning; 3) Student-faculty interactions; 4) Enriching educational experiences; and 5) Supportive campus environment (Kuh 2001, 2009; Kuh et al. 2008; Melius 2011; Pike & Kuh 2005; Zhao & Kuh 2004; Zhao, Kuh & Carini 2005). Using the NSSE data, LaNasa, Cabrera and Trangsrud (2009) proposed the implementation of eight benchmarks to provide a better fit and more useful way of measuring student engagement.

In Australia, the NSSE was adapted to include a sixth benchmark of work integrated learning (Coates 2008, 2010a) to form the AUSSE. This measure has grown to become the largest educational student survey in Australasia (Coates 2010a) and...
data from the AUSSE has been used extensively (Coates 2008, 2010a; Devlin, Brockett & Nichols 2009; Edwards 2008; Radloff & Coates 2010). The primary target population for the AUSSE is first-year undergraduate students and third year students (Coates 2010a) which is consistent with the NSSE which target first-year students and seniors (Kuh 2001). The popularity of the large scale NSSE and AUSSE have demonstrated their validity in the higher education sector. However, the five or six benchmark measures used in these surveys, respectively, do not meet the need of this research. The primary focus of this research is on out-of-class experience and reducing attrition through involving international students in extra-curricular activities. For this reason, the four dimensions identified by Handelsman et al. (2005) from the Student Course Engagement Questionnaire (SCEQ) were also inadequate for this research. The SCEQ focuses on the micro level, that is, what happened inside the class and immediately before and after the class (Handelsman et al. 2005). As intended, this measure is specific to an individual course, and therefore does not consider the whole student experience as proposed in this current research.

Another measure of student engagement is the Utrecht Work Engagement Scale – Student Survey (UWES-SS) used in conjunction with the Maslach Burnout Inventory – Student Survey (MBI-SS). The UWES-SS has three sub-scales including vigour, dedication and absorption (Schaufeli et al. 2002). This uses a seven-point rating scale (Alarcon, Edwards & Menke 2011) but refers specifically to studies and does not consider external factors and extra-curricular activities.

The Student Experience in the Research University (SERU) survey and the Australian First Year Experience Questionnaire (FYEQ) have seven benchmarks each, measuring student engagement in relation to their experience (Hernandez et al. 2013; Krause & Coates 2008). Hernandez et al. (2013) used the seven factors of the SERU to determine the relevance of student engagement within a specific minority cultural group. The seven factors of the SERU include: a) Satisfaction with educational
experience; b) Current skills self-assessment; c) Engagement with studies; d) Gains in self-assessment skills; e) Development of scholarship; f) Campus climate for diversity; and g) Academic disengagement (Hernandez et al. 2013). This again has a significant focus on academic experience with only one factor recognising the importance of the out-of-class experience.

Krause and Coates (2008) identified the seven dimensions or scales of the FYEQ data as: a) Transition engagement; b) Academic engagement; c) Peer engagement; d) Student-staff engagement; e) Intellectual engagement; f) Online engagement; and g) Beyond-class engagement. While this addresses many of the gaps identified with the other scales in relation to applicability of this research, it would require significant adjustment to ensure its relevance to international students and to ensure it does not exclude students in subsequent years. Doing so may compromise the validity of the questionnaire. In summary, while the existing student engagement and experience surveys covered aspects that are relevant to this research, none of the existing tools met all of the research objectives. The following section describes the survey instrument developed for this project.

### 3.4.2 Instrument Developed for this Project

Given the specific focus of this current research, it was deemed more applicable and relevant to develop a purposefully designed survey with measures specifically tailored to objectives of the research questions and propositions. This has been achieved in previous research where institutionally developed measures have been required (Arboleda et al. 2003) and where models have been tailored for a specific purpose (Sharma & Bhaumik 2013). Based on Astin’s student involvement theory discussed in section 2.4, the survey questionnaire developed for this research used the quality and quantity of participants’ involvement in out-of-class activities to determine their
overall student involvement score. The involvement scores will be explored further below in section 3.5 Data Collection methods.

Each of the measures of student involvement and engagement identified above consists of a self-reporting or self-authorship (Glass 2012) process where students answer a series of questions using a scale measure (Stuart et al. 2011). This requires participants to determine and rate their own level of involvement. While this is possibly the most practical reporting system, consideration needs to be given to external factors that impact on the level of extra-curricular activities, including number of hours worked per week, location of residences from campus and travel time, family commitments or other factors that may reduce a student’s ability to participate and engage in formal activities outside of the normal classroom. These background factors were included in the survey questionnaire and have been used to identify significant relationships with levels of involvement. These are discussed further in chapter four. The survey was also framed in such a way as to ensure participants had no reason to present themselves in a more positive manner (Glass 2012). For example, given the anonymity of participant responses, there is no way to link the quantity of involvement with participants’ academic credits. Therefore, there was no benefit to participants’ to indicate any more hours of participation than actually occurred.

With this in mind, the self-reporting measures of student involvement followed the five principles of self-reporting as highlighted by Kuh (2001). The five principles were: 1) The information requested must be known to the respondents; 2) The questions are phrased clearly and unambiguously; 3) The questions refer to recent activities; 4) The respondents think the questions merit a serious and thoughtful response; and 5) Answering the questions does not threaten, embarrass or violate the privacy of the respondent, or encourage the respondent to respond in socially desirable ways (Kuh 2001).
The questionnaire contained three sections with the primary focus being to measure the quality and quantity of students’ involvement (Astin 1999). A copy of the questionnaire is attached as Appendix A.

The first section of the questionnaire asked the participants to provide demographic and other background information including age (Gonyea et al. 2003; McKinney et al. 2004; Tieu & Pancer 2009; Zhao & Kuh 2004), gender (Coates 2009; Gonyea et al. 2003; McKinney et al. 2004; Tieu et al. 2010), how long they had been studying at university (Coates 2008; Gonyea et al. 2003), how long they had remaining until they graduated (Coates 2008), and their course level (Bowman et al. 2010).

Section one of the questionnaire also asked participants to identify their state or territory where they were studying and their permanent place of home residence prior to studying in Australia (Coates 2008; DIICCSRTE 2013b). The latter question, question four, provided participants with a list of the top nine markets for international students studying in Australian universities. Participants were also provided with an option of ‘other’. If participants selected ‘other’, they were asked to indicate, in the free text box, which country was their home country. Section 4.1.2 provides participants’ responses to question four of the survey questionnaire. Throughout the analysis process, the responses to question four were substituted for the cultural dimension scores for their respective countries. This allowed for the analysis between cultural dimensions, other background factors and the involvement scores in order to address research question one. Figure 3.4.2.1 provides a visual representation of the linkage between the survey questionnaire and research question one. The significant relationships identified as a result of this research question are presented in section 4.4.
Section one of the questionnaire also asked participants to indicate the average amount of time they spent travelling to and from university per day during semester one 2014, the average amount of time travelling to and from paid employment per week and the average amount of time in paid employment per week (Coates 2008; Gonyea et al. 2003).

At the end of the first section, participants were asked if they had or had considered withdrawing or transferring to another university (Coates 2008; Wilcox 2005). This dichotomous response (yes or no) was included to indicate the satisfaction levels of
their transition into university life in Australia in relation to the student experience. That is, the better the experience, the less the likelihood of the students wanting to withdraw or transfer. If participants answered yes, they were asked to indicate the main reason for this. This qualitative data was used to identify consistent reasons for participants wanting to withdraw or transfer. Section one of the questionnaire provided the background information required to answer research question two. This is presented in Figure 3.4.2.2.

**Research Question 2:**
Can we predict international student involvement in out-of-class activities using background information?

![Diagram showing the survey questionnaire sections and research question two](image)

The survey questionnaire also asked participants to identify their current living arrangements (Coates 2008; Grayson 1997). Five accommodation options were
provided and participants were instructed to select the option that best represented their current living arrangement.

This research project does not intend to characterise nationalities and dictate where they should reside. Instead, it offers empirically-proven advice to industry professionals on the benefits and impacts of different accommodation options to different student cohorts. This is addressed by research question three.

Research Question 3:
Are international students living in student residential communities more involved than international students living off-campus?

Figure 3.4.2.3 Link between the survey questionnaire and research question three
Section two of the survey investigated the quantity of student involvement in out-of-class activities. These activities varied in the level of organised structure. Tieu et al. (2010) found that taking part in highly structured activities provided students with a high quality student experience. This implies activities that are unstructured, such as activity (c) “exercising by yourself”, are less likely to significantly contribute to the student experience. This is supported by Mahoney, Cairns and Farmer (2003) who listed aspects of extra-curricular activities identified as critical in promoting interpersonal competence as having voluntary participation, structure and being challenging.

Participants were asked to indicate the amount of time they spent on each of the 11 activities listed. This was recorded on a six point ratio from zero hours per week using increments of five hours i.e. 0, 1-5, 6-10, 11-15, 16-20, and 21+. The activities listed in this section ranged from (a) “Volunteering for a community / charity organisation including a religious or faith-based organisation”, which represented voluntary participation, structure and challenge, to activity (h) “Participating in social / informal off-campus activities including going to a bar with friends”, which represented voluntary participation only. Section two scores reflected the quantity of involvement which ranged from 0 to 55.

Section two of the questionnaire also asked if participants had considered withdrawing or transferring from their studies. The qualitative responses provided by participants who indicated that they had were used to provide further explanation to the SIS calculation.

In section three participants were asked to select one activity from the list of 11 provided in section two that they believed was the most important in contributing to their student experience. With this activity in mind, participants were asked to indicate their level of agreement or disagreement to a set of 18 statements which make up the
Quality of Involvement scale (Tieu & Pancer 2009). In their study on co-curricular involvement and transition to university, Tieu & Pancer (2009) developed the Quality of Involvement Scale (QIS) in two parts. The first part asked participants to list all activities that they had been involved in over the past 12 months. The second part of the QIS was replicated as section three of this questionnaire.

Upon reflection of part one of their QIS, Tieu & Pancer noted that “the definition of involvement was left to the discretion of each student. It is possible that students may have differed in the way they defined involvement, which could have affected the activities that they nominated” (2009, p. 59). For this reason, participants in this current research project were provided with a list of activities based on their level of structure as indicated above.

Each statement in section three was assigned a score using a five point Likert-type scale (Alarcon, Edwards & Menke 2011; Khawaja & Dempsey 2008; Lee, Becker & Nobre 2012; Quinlan 2011) from one equalling strongly disagree to five equalling strongly agree. The weighting scale for this section was adapted from McKinney et al. (2004) research into out-of-class learning opportunities. The activities listed were weighted to reflect their level of structure (Mahoney, Cairns & Farmer 2003; Tieu et al. 2010), voluntary participation and level of challenge (Mahoney, Cairns & Farmer 2003). Activities (a), (b), (e) and (f) represent the highest level of involvement and are given a weighting of 3. Activities (d), (g), (l), (j) and (k), represent medium involvement and are given a weighting of 2, while activities (c) and (h) have a weighting of 1. Appendix A provides a copy of the survey questionnaire indicating the 11 activities from section two and the 18 statements that made up the QIS in section three.

The responses to the 18 statements in section three were then multiplied by the selected activities involvement weighting to produce a QIS which ranged between 18
and 270. The QIS and the Quantity of Involvement scores were multiplied together then divided by 148.5 to provide a Student Involvement Score (SIS) range of 0 to 100.

Sections two and three combined produced the SIS, which is the constant in the multiple regression analysis to address research question two.

Given sections two and three of the questionnaire were adapted from previous research projects into student involvement (Mahoney, Cairns & Farmer 2003; Tieu et al. 2010), the face validity (Quinlan 2011) of the data collection tool for this research project was deemed to be valid and reliable.

Using a confidence level of 95%, the confidence interval for this sample size was calculated to be 4.90. In their study of out-of-class experiences (Elkins, Forrester & Noel-Elkins 2011) aimed for a confidence interval of five using a confidence level of 95%, however fell short of the required sample size by over 10%. While the third party distribution method (described in section 3.5) used in this study helped to ensure participant anonymity, the reliance on a third party may have contributed to the lower than expected sample size. Upon closing the survey questionnaire, 251 valid responses were obtained. This sample size resulted in a confidence interval of 6.18 at a confidence level of 95%.

In order to further validate this research approach, a number of additional measures were included in the questionnaire design. The first of these were questions to support the student involvement calculations. Two questions ‘Did you, or did you consider, withdrawing or transferring from your studies within the first 12 months of commencing?’ and ‘Describe your student experience in Australia so far’ (using a 5 point scale) have been included for this purpose. It was expected that students with low levels of student involvement were more likely to have a poor or very poor student experience, and were more likely to have considered, or actually have withdrawn or
transferred from their studies within the first 12 months of commencing. The answers provided to these two questions are discussed in chapter four.

The final question on the survey was an open-ended one and asked participants 'How could Australian universities improve the student experience for future international students?'. It was expected that participants would either highlight the positive aspects of what had worked to contribute to a good student experience for them, or would have reflected on their shortcomings and would make recommendations for improvement based on their negative experiences. In the case of the former, recommendations were expected to be consistent with a higher level of student involvement. This added strength to identifying high quality activities. In the case of the latter, it was expected that participants may have spent more time being involved in low quality experiences and little time being involved in high quality activities.

These two additional aspects of the survey design further validate the quality and quantity of student involvement as well as the importance of student involvement and the student experience on retention of international students in Australia.

3.5 Data Collection

The survey questionnaire method used in this project required ethics approval from the Charles Darwin University’s Human Research Ethics Committee (HREC). The National Ethics Application Form was used. The appendices included a copy of the survey questionnaire, letters of support from eight universities and a copy of the proposed poster and letter of introduction. No significant changes were made to the survey questionnaire nor the distribution methods after the submission was made to the HREC. Approval was obtained from the HREC on 7th July, 2014.

Students from Charles Darwin University (CDU) were excluded from this project to ensure no unequal relationship existed between participants and the principal
researcher who is employed as the manager of the on-campus student residence, which houses many international students. While the responses to the survey were anonymous, it was deemed appropriate to exclude international students from CDU in order to avoid potential concerns that their responses, such as their place of permanent residence (country), gender or current living arrangements could be identifiable. If this were the case, it could have reduced the response rate.

Participants were asked to provide responses to a range of questions about their participation and experiences while studying at an Australian university. It was deemed possible that a participant could reflect on a negative experience or their lack of involvement (i.e., possible isolation or loneliness). For this reason the information sheet at the beginning of the survey contained phone numbers and website details of two nation-wide mental health support services: Lifeline and Beyondblue.

It could be inferred that the level of involvement influences the students’ satisfaction with their overall experience. This, in turn, could be perceived as a direct reflection on the university. As such, the survey has been designed to ensure participants did not need to refer in any way to their university. Any references to specific institutions entered into any free text questions of the survey were de-identified. Finally, to further protect privacy of the participants and interests of the participating universities, findings and recommendations are presented at an aggregate level, not at an individual level.

With a population for this project equalling 323,612, a multi-stage cluster sampling method (Fowler 2009; Teddlie & Yu 2007) was adopted. The first stage consisted of comparing the ranked student market data and Hofstede’s cultural dimension scores. Cultural dimension scores were available for the top nine international student markets. The tenth market, Nepal, does not have either an ‘Index score for countries and regions from the IBM set’ (Hofstede 2001, p. 500) nor an ‘Index Score Estimate
for Countries Not in the IBM set’ (Hofstede 2001, p. 502). Students from Nepal and other nationalities were not excluded from participating in this survey questionnaire; however, analysis using the cultural dimensions was only conducted on countries with cultural dimension scores.

Hofstede (2001, p. 465) noted that cross-national research using “quantitative data demands data for a large number of countries, preferably ten or more”. As such a target was set to obtain data from participants in a minimum of ten countries in order to make cross national comparison possible and relevant. Stage one of the cluster sampling was originally designed to provide a focus or target of the nationalities for this research to collect. It was thought that given these ten markets represent almost three-quarters of the total international student population in Australia participants from these countries would provide a sufficiently diverse sample. Instead, it was decided not to target any specific nationalities. This was to assist in increasing both the sample size and the number of countries that Hofstede’s cultural dimensions scores were applied to. Participants from countries without cultural dimension scores provided valuable data in addressing research questions two and three, and therefore their responses remain valid for this project.

The second stage of the cluster sampling involved determining the distribution of international students throughout Australia. Figure 3.5.1 indicates the percentage distribution of international students studying at Australian universities across each state and territory.

It is noted that there is one university identified under the category of multi-state - the Australian Catholic University. The questionnaire asked for participants to select the state or territory where they were studying. It is highly improbable that participants were currently studying in ‘multiple states’. Thus the option of multi-state was not included in this survey questionnaire.
International students studying at universities in Tasmania, the Northern Territory (NT) and the Australian Capital Territory (ACT) represent less than five percent of the total international student population. This project does not compare involvement between states and territories; that is, for example, this survey is not intending to determine whether students studying in Victoria are more, or less, involved than students studying in Tasmania. Therefore for the purpose of collecting a sample that is representative of the total population, Tasmania, the NT and the ACT were clustered in the questionnaire as ‘other’. 

Source: DIICCSRTE (2013c)
The inclusion of universities was done in a two-step process. The first step was to cluster universities. This was primarily done by state in the case of Victoria, New South Wales (NSW), Queensland (QLD), Western Australia (WA) and South Australia (SA). The sixth cluster combined the remaining state and territories due to the smaller number of international students at these universities. The second step for sampling was completed using a systematic approach based on the ranking of all international students (both commencing and returning) on-shore within the clusters from the DIICCSRTE (2013c) data. With approximately 33% and 26% of international students studying in universities in Victoria and NSW, respectively, these clusters initially had two universities representing each. The Victorian universities selected were ranked first and fifth in their cluster, while from NSW, the second and sixth ranked universities were selected. Universities selected from QLD, WA and SA clusters were ranked first in their respective clusters. Due to not being able to contact the highest ranked university in the final cluster, the second highest ranked university was selected.

A third party distribution method was selected for this research. This involved forwarding an introductory email and an electronic poster, both including the survey URL, to international student support officers at participating universities. The international student support officers were asked to forward the introductory email and poster to their international student communities. The email and the poster were invitations to international students to participate in this research project. Copies of these are provided as appendices to this dissertation. Forwarding the survey link through a third party ensured contact details of participants were not provided to the researcher, thereby maintaining participants’ anonymity. Participating universities were asked to cross post the survey link through their social media pages and newsletters. This self-administered methodology allowed participants to complete the questionnaire at a time and location convenient to them. The questionnaire was open for a ten week period from 30 July, 2014 until 11 October, 2014. With a distribution
through eight universities in Australia, the researcher had aimed at obtaining a sample size of 400 participants, approximately 50 from each university.

After initially agreeing to distribute the survey questionnaire, one of the universities in Victoria withdrew their support for promoting this project citing the possibility of survey fatigue as the main justification. This resulted in only one university from Victoria participating. Another university was not able to distribute the poster or introductory letter via email. Instead this university placed the survey link on an online news page.

It is noted that a limitation of the international student data exists. The DIICCSRTE (2013c) data does not indicate the study location and the number of students of each nationality, for example, the number of Chinese students studying in Victoria. Therefore it assumes that the international student population was evenly distributed across all Australian universities in 2012. This assumption implies that given Victoria had 33.95% of the total international student population, it would have a similar percentage of the Chinese student population. With 93,590 Chinese students in Australian universities in 2012, it was estimated that approximately 31,774 studied at universities in Victoria.

The following section describes the data analysis process selected to convert the participant responses into meaningful and relevant data in order to address the research questions and propositions.
3.6 Data Analysis

Upon closing the online survey, one day was taken to ensure the data was correct and useful. The data was transferred into a social science statistic software package (SPSS) version 22 (Hernandez et al. 2013; Roberts & McNeese 2010) for analysis. The qualitative data was transferred into Microsoft Excel for ease of viewing. Quantitative data produced from the questionnaire was recorded as numerical responses. A number of questions asked participants to indicate a category that best represented them. An example of this is question four: ‘Before you came to Australia to study, what was your permanent place of residence? That is, where is your home country?’: This question contained a list of the nine top international student markets for Australian universities. While countries are not numerical, the responses were coded to reflect a numerical code for analytical purposes. This type of data has been referred to as nominal data (Fowler 2009). For instance China was coded as 1, Malaysia coded as 2 and so on. Nominal data did not rank responses. That is, China’s code of 1 did not make it better nor worse than Malaysia, with their code of 2, in this example. The tenth option on question four was ‘other’. If participants selected ‘other’, they were asked to enter their country of permanent residence in a free text box. These were initially coded as 10 for the purpose of analysis; however, they were re-coded during the analysis process with a different code for each country.

The survey questionnaire also collected scale and ordinal data. For the purposes of this project, interval and ratio data (Gershkoff 2008) were identified as scale data. This was due to the statistical analysis program used in this project, SPSS, only having three levels of measure (SPSS 2010, p. 54). Scale data included questions about the amount of time spent on an activity, such as question 11, “time spent travelling to and from paid employment, per week”. Ordinal data can be placed in an order “along a single dimension” (Fowler 2009, p. 99). Section three of the questionnaire collected ordinal data as it asked participants to rate their level of
agreement with a list of statements on a five point Likert-type scale, from “strongly disagree” through to “strongly agree”. While there was a difference between each level on this scale, an exact mathematical calculation cannot be obtained between each value (Gershkoff 2008).

The initial analysis was undertaken using Pearson’s correlation (Mahoney, Cairns & Farmer 2003), Chi-Squared goodness of fit (Khawaja & Dempsey 2008; Pike 1999; Strauss & Terenzini 2007) and one-way ANOVA (McKinney et al. 2004; Pike 1999; Roberts & McNeese 2010). Following this, a series of regression analyses (Strauss & Terenzini 2007; Tieu & Pancer 2009; Tieu et al. 2010) were undertaken. The use of each of these tools are described below.

The three research questions that drove this project had one thing in common. They each seek to answer a simple question about the relationship between independent variables; that is, international students’ backgrounds in research question one, cultural dimensions in research question two and their residential environment in research question three, to a consistent dependent variable – student involvement.

A commonly used method of describing the relationship between two variables is Pearson’s product movement correlation coefficient (Onwuegbuzie, Daniel & Leech 2007; Weiss 2012). Pearson’s correlation, for short, is named after Karl Pearson who is credited for developing the model (Brase & Brase 2006) and is represented by $r$. The $r$ value describes both the direction and the magnitude of the relationship. The $r$ value range is from -1 to 1. An $r$ value of -1 describes a perfectly negative relationship between the two variables. That is, with a one unit increase in variable $x$, variable $y$ will decrease by one unit. A perfectly positive relationship is reflected with an $r$ value of 1. This means that with one unit increase in $x$, $y$ will also increase by one unit. An $r$ value of zero means that either the variables are independent or they are associated by a non-linear relationship (Bagiella 2008). The closer $r$ value is to 1 (or -1), the
stronger the relationship is between the two variables. This would be demonstrated on a scatterplot by all of the plotted data being on a linear regression line. The further the \( r \) value is from 1 (or -1) the further the plotted data would be away from the linear regression line. Pearson’s correlation is used when two variables are continuous variables (Bagiella 2008).

Pearson’s correlation cannot be used where one of the variables is categorical or nominal. Nominal data refers to categories that do not overlap such as gender (male or female) or participants’ study levels (undergraduate degree or doctorate). Participants can be in one of the categories only. In order to identify the significance between two or more variables, where the independent variable is a nominal or categorical variable and the dependent variable is a continuous variable, a one-way ANOVA can be used (Iversen 2004).

The ANOVA compares the differences between mean scores of the categories, or the factor variable. The null hypothesis generally suggests that there is no significant difference between the mean scores of the factor variable. If the variable had no effect, there would be no difference in the mean scores (Iversen 2004). The null hypothesis would be rejected if there is a significant difference in these mean scores (Weiss 2012). An example of this is a comparison between the average ages of students at different levels of study, given age in years is a continuous variable. The null hypothesis would state that there is no difference between the average (mean) ages of students at an undergraduate level in comparison to the mean ages of students studying at a doctorate level.

For the comparison between two nominal or categorical variables, a Chi-Squared test is conducted (Connor-Linton 2010). The Chi-Squared test identifies whether a relationship exists between the two variables in the sample data. Using the two examples of categorical data provided above (gender and study level), the null
hypothesis for this Chi-Squared test would be that no significant relationship exists between these two variables. Using a statistical software program, the Chi-Squared value can easily be calculated, along with the $p$ value of significance. If the $p$ value is $< 0.05$, the null hypothesis is rejected (Weiss 2012). Therefore a significant relationship does exist between the two variables.

Regression analysis is a commonly used tool that identifies the relationship between dependent and independent variables (Cottrell 2011). Appendix D provides an explanation of the process to identify the regression equation.

### 3.7 Data Predictions

Before conducting the analysis, a range of predictions were made based on existing literature. These formed the basis for the research questions and respective research propositions for this project. Using the research propositions as the foundation, this section provides an explanation of the data predictions that were made.

Proposition one states that Hofstede's (1980) cultural model can be used as an explanatory tool to describe the influence of international students cultural background on their involvement in out-of-class activities. Australia’s individualism and power distance scores are significantly different from the scores of countries that represent the majority of the international student population in Australian universities. As a result of this, it is predicted that international students from cultures that are similar to the Australian culture, i.e. cultures that have similar cultural dimension scores, would adapt to the new environment more easily and therefore would tend to be more involved in out-of-class activities than those with larger cultural differences. Further to this, it is also predicted that international students from cultures that have significantly different cultural dimensions to Australia would tend to rate their student
experience as lower and would be more likely to seriously consider withdrawing from their studies than those with similar dimension scores to Australia.

Section one of the survey questionnaire collects data on a range of background and demographic characteristics of international students. It is predicted that by combining these characteristics, Australian universities would be able to estimate students’ level of involvement with a degree of certainty and would be able to provide additional support or services to those students who may be less involved.

Proposition two suggests that by using information on the background of international students, it is possible to predict their level of involvement in out-of-class activities. It is predicted, for example, that younger students studying at an undergraduate level would be more involved in out-of-class activities than older students studying at a doctorate level. The target for the multiple regression equation is to identify approximately 60 to 70% of the factors that contribute to the student involvement score. While the remaining 30 to 40% are also of interest, this will be the focus of additional research subsequent to this dissertation.

One of the background characteristics of particular interest to this study is the living arrangement, or residential environment of international students. As highlighted in section 2.5, there are a range of benefits associated with living on-campus in a residential hall or college other than the proximity to class. Proposition three suggests that international students who live in a student residential community are more socially involved than those who do not.

This research investigates five residential accommodation options that are available to international students across Australia. Two of these options are purpose-built student accommodation facilities, while the other three depict accommodation options that are available to the general public. It is expected that the purpose-built and operated student accommodation facilities provide more opportunities for students to
become involved in out-of-class activities. This in turn is anticipated to result in a higher student involvement score than for those students who live in off-campus rental properties.

It is also anticipated that there will be a relationship between the living arrangements and both the student experience and whether students have considered withdrawing from their studies. By providing more opportunities to interact with other like-minded students, it is anticipated that international students living in student accommodation facilities would report a higher level of satisfaction with their student experience, and would be less likely to consider withdrawing from their studies, than student living in off-campus rental accommodation options.

The results of the survey questionnaire are explained in chapter four of this dissertation. The major findings relating to the three research questions will be discussed in chapter five.

### 3.8 Summary

The main aim of this project was to inform strategies to improve the out-of-class experience of international students in order to reduce their rate of attrition. To achieve this, an online survey was distributed to eight universities representing six clustered states and territories. This assisted in collecting a representative sample based on the location of study of international students in Australia.

The survey questions permitted addressing the research questions and propositions. Section one asked participants to provide background and demographic data which were used as variables for analysis. Hofstede’s original four cultural dimension scores were included to help explain the cultural challenges that international students face when studying in Australia. Section two of the survey questionnaire determined participants’ quantity of involvement scores, while section three of the survey
questionnaire determined participants’ quality of involvement scores. The quality and quantity of involvement scores were combined to calculate their SIS.

Analysis of the data included calculating significant relationships between variables using Pearson’s correlation coefficient, ANOVA and Chi-Squared calculations. The multiple regression analysis was a valuable descriptive tool in explaining the relationships between the dependent and multiple independent variables, and was also useful as a predictive model. The end result of the calculations and analysis was the development of an equation that includes only relevant and useful variables that contribute to the international students’ level of involvement. The results of the analysis and the multiple regression model are provided in the following chapter.
Chapter Four – What Was Found

4.1 Introduction

This chapter firstly presents descriptive analysis of the international student participants. This is based on the participants’ responses to questions from section one of the questionnaire. Question one of the questionnaire, as presented in Appendix A, was the participation consent form. The descriptive analysis in this chapter will commence from question two. There were 13 questions in section one. Section two and three of the questionnaire permitted calculating participants’ quantity and quality of involvement in out-of-class activities. These calculations combined determine participants’ SIS. Using Pearson's correlation, ANOVA and Chi-Square analysis, this chapter presents the statistically significant relationships between variables. This chapter also presents an analysis of the qualitative responses provided in the questionnaire. The stepwise regression equation to predict international students’ level of involvement in out-of-class activities is provided. Finally, this chapter highlights the major findings and recommendations that are derived from this research.

4.1.1 Demographic Data

Out of 251 participants, 220 indicated the year they were born, ranging from 1958 to 1996. A new variable was created to categorise the participants’ years into six age groups: 18-19 years old, 20-24 years old, 25-29 years old, 30-34 years old, 35-49 years old and above 50 years old. It was found that 27 participants (12.3%) were under 20 years of age; 159 participants (72.3%) were between 20 to 29 years old; and 33 participants (15.0%) were between 30 to 49 years old. Only one participant
(0.5%) was 50 years or older. Table 4.1.1.1 provides the mean and standard deviation for this question using the six age group categories.

<table>
<thead>
<tr>
<th>Age group</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.50</td>
<td>1.03</td>
<td>251</td>
</tr>
</tbody>
</table>

Table 4.1.1.1 Mean age of participants by age group category

Note: The age group range was: one = 18-19 years old, two = 20-24 years old, three = 25-29 years old, four = 30-34 years old, five = 35-49 years old, and six = >50 years old.

Participants were also asked to indicate their gender. One hundred and thirty-four (134) participants (60.9%) selected female and 86 participants (39.1%) selected their gender as male. Thirty-one participants did not complete this question.

4.1.2 Permanent Place of Residence

Participants from 49 countries completed this question. A total of 220 valid responses were gathered for this question, with three invalid entries being deleted. The largest group of respondents (n = 42) identified Malaysia as their permanent place of residency prior to coming to Australia to study. This was followed by Singapore with 29 participants (13.2%), mainland China with 18 participants (8.2%), the USA with 11 participants (5.0%) and India with ten participants (4.5%). There were eight participants (3.6%) each from Indonesia and Viet Nam, while six participants identified themselves as being from Hong Kong (2.7%) and five participants identified themselves as being Korean (2.3%). There were 83 participants that selected their permanent place of residency as being “other” and wrote their country in the free text box provided. A new variable was created to combine the listed nationalities in the free text “other”. Table 4.1.2.1 identifies the countries selected, the number of
participants from each country (n) and the percentage of the total 220 valid participants.

Table 4.1.2.1 Participants’ permanent places of residence, n value and corresponding percentage per country

<table>
<thead>
<tr>
<th>Countries</th>
<th>n (per country)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malaysia</td>
<td>42</td>
<td>19.1</td>
</tr>
<tr>
<td>Singapore</td>
<td>29</td>
<td>13.2</td>
</tr>
<tr>
<td>Mainland China</td>
<td>18</td>
<td>8.2</td>
</tr>
<tr>
<td>United States of America</td>
<td>11</td>
<td>5.0</td>
</tr>
<tr>
<td>India</td>
<td>10</td>
<td>4.5</td>
</tr>
<tr>
<td>Indonesia and Viet Nam</td>
<td>8</td>
<td>3.6</td>
</tr>
<tr>
<td>Germany</td>
<td>7</td>
<td>3.2</td>
</tr>
<tr>
<td>Hong Kong and Nepal</td>
<td>6</td>
<td>2.7</td>
</tr>
<tr>
<td>France, Korea and Sri Lanka</td>
<td>5</td>
<td>2.3</td>
</tr>
<tr>
<td>Brazil, Canada and Papua New Guinea</td>
<td>4</td>
<td>1.8</td>
</tr>
<tr>
<td>Iran, New Zealand, Norway and the Philippines</td>
<td>3</td>
<td>1.4</td>
</tr>
<tr>
<td>Bangladesh, England, Japan, Kenya, the Maldives, Pakistan and Saudi Arabia</td>
<td>2</td>
<td>0.9</td>
</tr>
<tr>
<td>Austria, Colombia, Croatia, Cyprus, Ecuador, Fiji, Ghana, Guatemala, Italy, Lebanon, Malawi, Mexico, Nigeria, Peru, Poland, Romania, Russia, South Africa, Sweden, the Seychelles Islands, the United Arab Emirates and Vanuatu</td>
<td>1</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Note: N = 251.
4.1.3 Study Data

Participants were asked four questions regarding their current studies. The first of these questions was question five: “Please indicate how long you have been studying in Australia for?” Participants were asked to indicate their response in months and years; for example, one year and three months. A new variable was created to convert all responses into months to provide consistency in the responses. A new category was then created to group the participants’ responses together into six groups: less than one year, one to two years, two to three years, three to four years, four to five years and more than five years. The majority of participants had been studying in Australia for less than two years with 154 responses (70.0%) in either the less than one year group or the one to two year group. Thirteen participants (5.9%) indicated that they had been studying in Australia for more than five years. Table 4.1.3.1 provides the mean and standard deviation of this data using the study length categories.

Table 4.1.3.1 The length of time participants had been studying in Australia for, by time category

<table>
<thead>
<tr>
<th>Study length in Australia so far</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.15</td>
<td>1.45</td>
<td>251</td>
</tr>
</tbody>
</table>

Note: The study length category range was: one = less than one year; two = one to two years; three = two to three years; four = three to four years; five = four to five years; and six = more than five years.

Question six asked participants to indicate how long they had remaining until they finished their current studies. That is, how long until they would graduate? A new variable was created to combine the responses to question six into months, similar to the responses to question five above. Once this data had been converted into months, a new category was then created to group the participants’ responses together into six groups: less than one year, one to two years, two to three years, three to four...
years, four to five years and more than five years. There were 218 participants who provided a response to this question. Seventy-four participants (33.9%) expected to graduate within the next 12 months, while 71 participants (32.6%) expected to graduate within one to two years. There were six participants (2.8%) who indicated that they had more than four years of studies remaining until they graduated. Table 4.1.3.2 displays the mean and standard deviation for this data using the categories created.

Table 4.1.3.2 The length of time participants had remaining in their current study, by time category

<table>
<thead>
<tr>
<th>Length of time until graduation</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.18</td>
<td>1.13</td>
<td>251</td>
</tr>
</tbody>
</table>

Note: The duration until graduation category range was: one = less than one year; two = one to two years; three = two to three years; four = three to four years; five = four to five years; and six = more than five years.

Out of the 251 participants, 220 listed the state or territory where they were studying at the time of completing the questionnaire. One hundred and fifteen participants (52.3%) indicated that they were studying in the category “other”, which included participants studying within the clustered states and territories of Tasmania, the NT or the ACT. Only one site was selected from this cluster. While there was a high percentage of participants from this cluster, the survey was open amongst the selected universities for the same period. No additional incentives or promotions were offered to this cluster in comparison to the other clusters. Please see section 3.5 for further details. Forty participants (18.2%) were studying in NSW, 25 participants (11.4%) in QLD, 18 participants (8.2%) in WA, 14 participants (6.4%) in Victoria and eight participants (3.6%) were studying in SA. Figure 4.1.3.1 displays the absolute number and percentage share of participant responses from each of the six state and territory clusters.
Figure 4.1.3.1 The location of participants’ studies, by state and territory cluster
Question eight of the questionnaire asked participants about their current study level. Out of the 251 participants, 220 chose from the four options that were provided. It was found that 124 participants (56.4%) were studying for an undergraduate degree at the time of undertaking the questionnaire and 90 participants (40.9%) were studying at a post-graduate level. Table 4.1.3.3 shows the number and percentage breakdown of study levels of participants at the time of completing the questionnaire.

Table 4.1.3.3 Participants’ study levels

<table>
<thead>
<tr>
<th>Study Levels</th>
<th>n</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate</td>
<td>124</td>
<td>56.4</td>
</tr>
<tr>
<td>Masters</td>
<td>50</td>
<td>22.7</td>
</tr>
<tr>
<td>Doctorate</td>
<td>40</td>
<td>18.2</td>
</tr>
<tr>
<td>Honours</td>
<td>6</td>
<td>2.7</td>
</tr>
</tbody>
</table>

*Note: N = 251.*

4.1.4 Residential Environment

To address research question three ‘Are international students living in student residential communities more involved than international students living off-campus?’ participants were asked to select a response that best represented their current living arrangements. Five options were provided. Out of the 251 participants, 220 indicated their current living arrangements. It was found that 108 participants (49.1%) were currently living in a student accommodation facility either on or off-campus. Sixteen participants (7.3%) were living off-campus with family or relatives. Please see Table 4.1.4.1 for the number and percentage of each residential environment option.
Table 4.1.4.1 Participants' living arrangements

<table>
<thead>
<tr>
<th>Living Arrangements</th>
<th>n</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-campus in a residential hall or college</td>
<td>94</td>
<td>42.7</td>
</tr>
<tr>
<td>Off-campus in a rental property with friends</td>
<td>69</td>
<td>31.4</td>
</tr>
<tr>
<td>Off-campus by yourself</td>
<td>27</td>
<td>12.3</td>
</tr>
<tr>
<td>Off-campus with family or relatives</td>
<td>16</td>
<td>7.3</td>
</tr>
<tr>
<td>Off-campus in a student accommodation facility</td>
<td>14</td>
<td>6.4</td>
</tr>
</tbody>
</table>

Note: *N = 251.*

4.1.5 Time and Funding

Question ten asked participants to indicate the approximate amount of time spent travelling to and from university per day during semester one, 2014. Participants were provided with five time range categories to select from: 0-30 minutes, 31-60 minutes, 61-90 minutes, 91-120 minutes and 121+ minutes per day. Out of the 251 participants, 220 provided a response to this question with 172 participants (78.2%) indicating that they spent less than 30 minutes per day travelling to and from university. Fifteen participants (6.8%) indicated that they spent, on average, more than one hour per day travelling to and from university. Table 4.1.5.1 presents the mean and the standard deviation for the amount of time spent travelling to and from university per day.
Next, participants were asked to indicate the amount of time, in hours, spent travelling to and from paid employment per week. As this question required a response in order to progress to the next question, participants were instructed to enter 0 if they did not travel to or from paid employment. Two hundred and twenty out of the 251 participants provided a response to this question. The majority of participants, \( n = 187 \) (85.0\%), indicated that they did not spend any time travelling to or from paid employment. Six participants (3.0\%) indicated that they spent 20 hours or more travelling to and from paid employment each week, with one of these participants indicating that they spent 60 hours per week doing this. Table 4.1.5.2 displays the mean and the standard deviation for responses of this question.

<table>
<thead>
<tr>
<th>Time spent travelling to and from paid employment per week</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.46</td>
<td>6.72</td>
<td>251</td>
</tr>
</tbody>
</table>

Note: Time is indicated in hours per week.

Out of the 251 participants, 220 participants indicated the amount of time, in hours, which they spent in paid employment per week. It was found that 177 participants (80.5\%) did not work in paid employment. Out of the 43 participants who did work, 20
participants (5.6%) indicated that they worked an average of 20 hours per week or more in paid employment. It is noted that international students in Australia are limited to 20 hours work per week during semester dates. Table 4.1.5.3 presents the mean and standard deviation for the responses to this question.

Table 4.1.5.3 Time spent by participants in paid employment per week

<table>
<thead>
<tr>
<th>Time spent in paid employment</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.72</td>
<td>8.19</td>
<td>251</td>
</tr>
</tbody>
</table>

Note: Time is indicated in hours per week.

Question 13 asked participants to select a response that best described their main funding source while at university. Out of the 251 participants, 220 provided a response. One hundred and twenty participants (54.5%) indicated that their main funding source was family. Seventy-two participants (32.8%) received a scholarship, while 28 participants (12.7%) funded themselves either through current employment or savings. Please see Table 4.1.5.4 for the list of funding sources provided and their subsequent number and percentage share.

Table 4.1.5.4 Options that best describe participants’ funding arrangements while studying at an Australian university

<table>
<thead>
<tr>
<th>Main Funding Source</th>
<th>n</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family</td>
<td>120</td>
<td>54.5</td>
</tr>
<tr>
<td>Scholarship from Australian university</td>
<td>38</td>
<td>17.3</td>
</tr>
<tr>
<td>Scholarship from home country / university</td>
<td>34</td>
<td>15.5</td>
</tr>
<tr>
<td>Self through savings</td>
<td>19</td>
<td>8.6</td>
</tr>
<tr>
<td>Self through current employment</td>
<td>9</td>
<td>4.1</td>
</tr>
</tbody>
</table>

Note: N = 251.
4.1.6 Withdrawal

Question 14 asked participants if they had, or had seriously considered, withdrawing from their studies or transferring to another university. Out of the 251 participants, 220 provided a response to this question. Of these, 36 participants (16.4%) answered that they had seriously considered withdrawing or transferring, while the remaining 184 participants (83.6%) indicated they had not. Participants who answered yes to this question were asked to write their main reason for this in a free text box. Thirty-two participants provided comments. From these responses, results were grouped into six common themes. Eight participant responses fitted into more than one of these common themes and were therefore counted twice to capture the full explanation for their consideration of withdrawal. The total number of useful responses was N = 39. The themes included:

1) Difference in teaching and learning styles (n = 10, 25.6%);
2) Stress (n = 9, 23.1%);
3) Cost (n = 6, 15.4%);
4) Lack of support (n = 6, 15.4%);
5) Locations (n = 5, 12.8%); and
6) Reputation of university (n = 3, 7.7%).

The results of this qualitative finding are used as a comparison with the second qualitative question which asked participants to indicate how Australian universities could improve the international student experience. These are provided in section 4.1.8 below.

4.1.7 Out-of-Class Experience

Participants were asked to rate their out-of-class experience they had had in Australia thus far. A five point Likert-type scale was used. Of the 251 participants, 186
responded to this question. For 66.2% of them (n = 123) their out-of-class experience was positive (either good or very good). Only two participants (1.1%) rated their out-of-class experience as very poor and another 18 (9.7%) as poor. Table 4.1.7.1 provides the mean, standard deviation and number of participants.

Table 4.1.7.1 How participants rated their out-of-class experience in Australia

<table>
<thead>
<tr>
<th>How would you describe your out-of-class experience in Australia so far?</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>How would you describe your out-of-class experience in Australia so far?</td>
<td>3.74</td>
<td>0.92</td>
<td>251</td>
</tr>
</tbody>
</table>

Note: The rating scale is one = very poor, two = poor, three = neutral, four = good, and five = very good.

4.1.8 Improving the Out-of-Class Experience

After participants rated their out-of-class experience as discussed in section 4.1.7, they were asked how Australian universities could improve the out-of-class experience for future international students. A free text box was provided. One hundred and fifty-seven useful responses were provided and a further 27 participants responded as not applicable, or similar. Responses from the 157 participants were analysed and grouped into seven common themes. The analysis of responses found that some participants included more than one common theme in their response. To ensure all useful responses were captured, responses may have been included more than once. As such, N = 193. The seven common themes included:

1) More activities and interactions (n = 80, 41.5%);
2) Interactions with Australians or an Australian experience (n = 31, 16.1%);
3) Better promotion and communication of events and activities (n = 10, 5.2%);
4) More support and guidance (n = 33, 17.1%);
5) Reduce the cost of study or activities (n = 18, 9.3%);
6) Increase work opportunities (n = 6, 3.1%); and
7) Addressing the teaching and learning challenges (n = 6, 3.1%).
4.1.8.1 More activities and interactions

Over half of the participants indicated that providing more activities and opportunities to interact with other students would be beneficial to future international students. Examples of responses include:

“Creating more opportunities to meet others from different cultures or cultural immersion programs” (Participant 5); and

“Organizing cultural events, sporting activities, trips and tours to local heritage sites etc.” (Participant 176)

4.1.8.2 Interactions with Australian’s or an Australian experience

A further 31 responses indicated that having more interactions with Australian students, or learning about the Australian culture, would be beneficial. Some of the comments included:

“More programs or activities that gather international students with Australian students, including mature age” (Participant 20);

“I believe social activities with locals are very crucial in helping international students find a sense of belonging with local students. Therefore, organise lots more social events, whether it be on-campus or off-campus and keep costs to a minimum” (Participant 91);

“Help integrate international students with the Australian students. Australian students do not seem accepting of international students that enter the Australian society. Sometimes there is very little interaction between international and Australian students.” (Participant 225)
Responses grouped into both of these categories support Astin’s (1999) student involvement theory whereby more (quantity of) high quality activities lead to a better student experience.

4.1.8.3 Better promotion and communication of events and activities
In addition to this, ten participants noted that the communication and advertising of events for international students should improve. This might have meant that a wide range of events and activities already existed; however, some international students were not aware of them.

4.1.8.4 More support and guidance
Thirty-three participants indicated that additional support services were required. These ranged from additional language support, academic support, student mentors and buddy programs to providing more information outside of the orientation program. A lack of support was also a common theme explaining international students’ reasons for seriously considering withdrawing from their current studies. These findings corroborate the strategic aim C: A positive student experience as described in the Chaney report (2013, p.44).

4.1.8.5 Reduce the cost of study or activities
It was found that 18 participants commented on the cost of studying in Australia. These included the high cost of fees or events, and the additional living expenses that international students incur. The cost of studying and living in Australia was also a common theme international students gave for considering withdrawing.
4.1.8.6 Increase work opportunities

A further six participants suggested that Australian universities should provide more job opportunities to assist international students. One participant indicated the need for:

“Campus placements (students need to get jobs). Organised paid internships for international student. Having more activities which help form bonds with Australian communities and get a job in Australia.” (Participant 135)

4.1.8.7 Addressing the teaching and learning challenges

The final common theme was the teaching and learning challenges of international students. Six participants indicated a need to adjust the teaching style to suit international students. Comments in this theme included difference in learning styles and the speed at which lecturers talk. Both of these add to the challenges international students face in a foreign country. These suggestions to improve international students experience are consistent with the reasons students gave for considering withdrawing from universities. While these comments do not specifically support research question two with regards to student involvement, they do highlight the necessity to understand the cultural differences in learning styles of different international student cohorts. Hofstede’s (1986) cultural dimension model can help to provide this understanding as discussed in section 2.3.7.

4.2 About Participants’ Involvement

This section discusses the approximate amount of hours per week that respondents spent participating in a specified list of eleven activities. For each activity, participants were provided the following options: 0 hours per week, 1-5 hours per week, 6-10 hours
per week, 11-15 hours per week, 16-20 hours per week and 21+ hours per week. For section two of the survey questionnaire, 207 out of the 251 participants provided responses for each of the activities listed.

4.2.1 Activities

The two activities with the highest mean scores were: activity (c) Exercising by yourself, and activity (i) Undertaking additional studies to benefit your academic results (this may include informal tutorials, attending professional presentations, non-prescribed readings).

For activity (c) 110 participants (53.1%) indicated that they exercised for between one and five hours per week by themselves. Forty-four participants (21.3%) exercised by themselves for between six and ten hours per week, and 18 participants (8.7%) exercised for 11 hours or more per week. Thirty-five participants (16.9%) did not spend any time exercising by themselves each week.

For activity (i) 120 participants (58%) indicated that they spent between one and ten hours per week undertaking additional studies. Twenty-one participants (10.1%) indicated that they spent 11 or more hours per week. From this group, six participants (2.9%) spent 21 or more hours undertaking additional studies per week, while 66 participants (31.9%) did not participate in any additional studies to benefit their academic results.

It was found that activity (f) Participating in organised arts / crafts groups or associations had the lowest mean score with 0.24 and a standard deviation of 0.57. One hundred and sixty-nine participants (81.6%) indicated that they did not spend any time on this activity, while none of the participants indicated that they spent 16 or more hours per week participating in organised arts / crafts groups or associations. Table 4.2.1.1 displays the mean, standard deviation and number for each of the 11 activities.
Table 4.2.1.1 Eleven activities ranked by the amount of time participants were involved in them per week

<table>
<thead>
<tr>
<th>Activity</th>
<th>Mean</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>(c) Exercising by yourself</td>
<td>1.30</td>
<td>1.07</td>
<td>207</td>
</tr>
<tr>
<td>(i) Undertaking additional studies to benefit your academic results</td>
<td>1.16</td>
<td>1.17</td>
<td>207</td>
</tr>
<tr>
<td>(j) Participating in organised activities / interactions with other</td>
<td>1.10</td>
<td>1.07</td>
<td>207</td>
</tr>
<tr>
<td>international students</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(h) Participating in social / informal off-campus activities</td>
<td>1.00</td>
<td>1.03</td>
<td>207</td>
</tr>
<tr>
<td>(including drinking at a bar)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(k) Participating in organised activities / interactions with</td>
<td>0.87</td>
<td>1.01</td>
<td>207</td>
</tr>
<tr>
<td>Australian students</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(g) Participating in organised on-campus social activities</td>
<td>0.70</td>
<td>0.92</td>
<td>207</td>
</tr>
<tr>
<td>(excluding drinking at a bar)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(d) Exercising as a part of a group or team</td>
<td>0.64</td>
<td>0.92</td>
<td>207</td>
</tr>
<tr>
<td>(e) Participating in a cultural group or association</td>
<td>0.61</td>
<td>0.88</td>
<td>207</td>
</tr>
<tr>
<td>(b) Participating in a sporting club</td>
<td>0.57</td>
<td>0.97</td>
<td>207</td>
</tr>
<tr>
<td>(a) Volunteering for a community or charity organisation</td>
<td>0.55</td>
<td>0.93</td>
<td>207</td>
</tr>
<tr>
<td>(including a religious or faith based organisation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(f) Participating in organised arts / crafts groups or associations</td>
<td>0.24</td>
<td>0.57</td>
<td>207</td>
</tr>
</tbody>
</table>

Note: The time range was: zero = 0 hours per week; one = 1-5 hours per week; two = 6-10 hours per week; three = 11-15 hours per week; four = 16-20 hours per week; and five = 21 or more hours per week.

Table 4.2.1.2 displays the number of responses, and associated percentages, for each activity and each time range.
<table>
<thead>
<tr>
<th>Activity</th>
<th>0 hours per week</th>
<th>1-5 hours per week</th>
<th>6-10 hours per week</th>
<th>11-15 hours per week</th>
<th>16-20 hours per week</th>
<th>21+ hours per week</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>(a) Volunteering</td>
<td>133</td>
<td>64.3</td>
<td>51</td>
<td>24.6</td>
<td>14</td>
<td>6.3</td>
</tr>
<tr>
<td>(b) Sporting club</td>
<td>135</td>
<td>65.2</td>
<td>45</td>
<td>21.7</td>
<td>16</td>
<td>7.7</td>
</tr>
<tr>
<td>(c) Exercise by self</td>
<td>35</td>
<td>16.9</td>
<td>110</td>
<td>53.1</td>
<td>44</td>
<td>21.3</td>
</tr>
<tr>
<td>(d) Exercise with group</td>
<td>115</td>
<td>55.6</td>
<td>66</td>
<td>31.9</td>
<td>17</td>
<td>8.2</td>
</tr>
<tr>
<td>(e) Cultural group</td>
<td>120</td>
<td>58.0</td>
<td>60</td>
<td>29.0</td>
<td>16</td>
<td>7.7</td>
</tr>
<tr>
<td>(f) Arts and Crafts</td>
<td>169</td>
<td>81.6</td>
<td>29</td>
<td>14.0</td>
<td>6</td>
<td>2.9</td>
</tr>
<tr>
<td>(g) On-campus social</td>
<td>103</td>
<td>49.8</td>
<td>80</td>
<td>38.6</td>
<td>13</td>
<td>6.3</td>
</tr>
<tr>
<td>(h) Off-campus social</td>
<td>65</td>
<td>31.4</td>
<td>102</td>
<td>49.3</td>
<td>26</td>
<td>12.6</td>
</tr>
<tr>
<td>(i) Additional studies</td>
<td>66</td>
<td>31.9</td>
<td>79</td>
<td>38.2</td>
<td>41</td>
<td>19.8</td>
</tr>
<tr>
<td>(j) Activities with international students</td>
<td>60</td>
<td>29.0</td>
<td>99</td>
<td>47.8</td>
<td>27</td>
<td>13.0</td>
</tr>
<tr>
<td>(k) Activities with Australian students</td>
<td>88</td>
<td>42.5</td>
<td>81</td>
<td>39.1</td>
<td>23</td>
<td>11.1</td>
</tr>
</tbody>
</table>

Note: N = 251. Please see Table 4.2.1.1 for a full description of the activities.
4.2.2 Most Important Activity

Question 16 of the questionnaire asked participants to select one activity from the list provided that they considered was the most important part of their student experience. The list of activities was identical to the 11 activities provided in section two of the questionnaire. Please refer to Table 4.2.1.1 for the full description of the activities. This sub-section presents participants’ responses.

One hundred and eighty-six out of the 251 participants provided responses for this question. Thirty-three participants (17.7%) selected activity (i) as the most important activity of their student experience. This activity received the single largest number of responses for this question. The activity receiving the second single largest number of responses was activity (j) which was selected by 27 participants (14.5%). This result is consistent with the qualitative responses which indicated that more events and activities are required to improve international students’ out-of-class experiences.

Activity (a) was third highest with 25 participants (13.4%) selecting it. Twenty-three participants (12.4%) indicated that participating in social / informal off-campus activities including drinking at a bar was their most important activity. Forty-two participants (22.5%) combined selected exercising either by themselves, as part of a team, or participating in a sporting club as being the most important activities in their student experience. No participants selected activity (f). Table 4.2.2.1 presents the number and associated percentages of each activity selected for question 16. Figure 4.2.2.1 displays the respective number for each of these activities.
Table 4.2.2.1 The ranking of activities participants indicated that were the most important part of their student experience

<table>
<thead>
<tr>
<th>Most Important Activity</th>
<th>n</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Undertaking additional studies to benefit your academic results</td>
<td>33</td>
<td>17.7</td>
</tr>
<tr>
<td>(j) Participating in organised activities with other international students</td>
<td>27</td>
<td>14.5</td>
</tr>
<tr>
<td>(a) Volunteering for a community / charity organisation including a religious or faith based organisation</td>
<td>25</td>
<td>13.4</td>
</tr>
<tr>
<td>(h) Participating in social / informal off-campus activities (including drinking at a bar)</td>
<td>23</td>
<td>12.4</td>
</tr>
<tr>
<td>(c) Exercising by yourself</td>
<td>17</td>
<td>9.1</td>
</tr>
<tr>
<td>(k) Participating in organised activities / interactions with Australian students</td>
<td>17</td>
<td>9.1</td>
</tr>
<tr>
<td>(b) Participating in a sporting club</td>
<td>14</td>
<td>7.5</td>
</tr>
<tr>
<td>(d) Exercising as a part of a group or team</td>
<td>11</td>
<td>5.9</td>
</tr>
<tr>
<td>(e) Participating in a cultural group or association</td>
<td>11</td>
<td>5.9</td>
</tr>
<tr>
<td>(g) Participating in organised on-campus social activities (excluding drinking at a bar)</td>
<td>8</td>
<td>4.3</td>
</tr>
<tr>
<td>(f) Participating in organised arts / crafts groups or associations</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Note: N = 251. Please see Table 4.2.1.1 for full description of activities.
Figure 4.2.2.1 The activities identified as the most important part of participants’ student experience.
4.2.3 Activity Level of Involvement

Each of the 11 activities was weighted in accordance to their level of structure (Mahoney, Cairns & Farmer 2003), voluntary participation and level of challenge (Mahoney, Cairns & Farmer 2003; Tieu et al. 2010). This weighting represents the level of involvement for each activity. Activities (a), (b), (e) and (f) from Table 4.2.1.1 above represent the highest level of structure, voluntary participation and challenge. Therefore, these represent the highest level of involvement and were given a weighting of 3. Activities (d), (g), (i), (j) and (k) represent medium level of involvement and were given a weighting of 2. Activities representing the lowest level of involvement were activities (c) and (h) which were given a weighting of 1. Additional information on the weighting of each of these activities can be found in section 3.4 above.

From the data representing the most important activity for contributing to participants’ student experience, a new variable “Activity level of involvement” was created to categorise the most important activities into the three levels of involvement. The mean and standard deviation of the activities level of involvement variable are presented in Table 4.2.3.1 and Figure 4.2.3.1.

Table 4.2.3.1 The activity level of involvement based on the most important activity as part of the student experience

<table>
<thead>
<tr>
<th>Activity level of involvement</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.05</td>
<td>0.70</td>
<td>186</td>
</tr>
</tbody>
</table>

Note: Activity level range was: one = low, two = medium and three = high.
4.3 Involvement Scores

In order to calculate the SIS the activities need to be weighted and the quality and quantity scores need to be combined. This section describes the new variables created to achieve these scores.

4.3.1 Quantity of Involvement

The quantity of involvement scores was calculated by adding the time range responses to each of the eleven activities in section two of the survey questionnaire. As described above in section 4.2, there were six time categories ranging from zero hours per week, which produced a score of zero, to 21+ hours per week, which produced a score of five. Participants’ time range scores were combined to produce a quantity of involvement score out of 55 (range is from 0 to 55). For example, a participant who indicated that they spent between six to ten hours per week (time range score of two) on activity (a) and between one to five hours per week (time range score of two) on activity (b), their quantity of involvement score would be 4.

Figure 4.2.3.1 Participants’ activity level of involvement on the selected activity that was most important to their student experience.
score of one) on activity (b) would have a cumulative quantity of involvement score of three. Table 4.3.1.1 displays the mean and standard deviation for the quantity of involvement scores. Figure 4.3.1.1 displays the quantity of involvement scores and the normal curve as a visual representation.

Table 4.3.1.1 Participants’ quantity of involvement scores

<table>
<thead>
<tr>
<th>Quantity of involvement</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantity of involvement</td>
<td>8.74</td>
<td>6.81</td>
<td>206</td>
</tr>
</tbody>
</table>

Note: The range for the quantity of involvement score was 0 – 55.
4.3.2 Quality of Involvement

Using the activity selected by participants as their most important (as described in section 4.2.2), participants were asked to indicate their level of agreement or disagreement to 18 statements. Participants were provided a five-point Likert-type scale for each statement which was coded as: strongly disagree = 1, disagree = 2, neutral = 3, agree = 4 and strongly agree = 5. Out of the 251 participants, 186 provided a response to each of the statements in this question.

A new variable called “quality of involvement” was created. It combined the activity level of involvement score, as described in section 4.2.3, and participants’ responses to the 18 statements. For example, if a participant selected activity (a) as the most important (which has an activity level of involvement weighting of three) and answered ‘strongly agree’ to each of the 18 statements, their quality of involvement score would be 270 (3 X 5 X 18). In contrast to this, a participant who selected an activity which had a low level of involvement such as activity (c) and still 'strongly agreed' with each of the 18 statements, their quality of involvement score would only be 90 (1 X 5 X 18). The scale range for the quality of involvement scores is from 18 to 270. Table 4.3.2.1 displays the mean and standard deviation for the quality of involvement score.

\[\text{Table 4.3.2.1 Participants' quality of involvement scores}\]

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of involvement</td>
<td>141.48</td>
<td>57.62</td>
<td>186</td>
</tr>
</tbody>
</table>

Note: the range for the quality of involvement score was 18 – 270.

4.3.3 Student Involvement Score (SIS)

A new variable was created called the SIS. This was calculated by multiplying the quantity of involvement score with the quality of involvement score, then dividing it by
This gave a SIS range from zero to one hundred. Figure 4.3.3.1 displays the number and scores for participants’ SIS.

A high level of consistency was found within each of the three involvement score scales: quantity of involvement, quality of involvement and student involvement score. The results of the Cronbach’s alpha test are provided in Table 4.3.3.1. These high levels of consistency validate each of the involvement scores.
4.4 Relationships Among Variables

This section reports on all statistically significant relationships found to exist between participants’ responses. The reporting of these relationships is grouped into seven sub-sections below.

4.4.1 Age

As described in section 4.1.1, participants’ responses to the year they were born produced two variables. These are the year born and the age group category.

A statistically significant difference was found between the year born and the study level using a one-way ANOVA, $F (3, 216) = 55.35, p < 0.01$. Undergraduate students were younger than students studying at other levels with a mean age of 22 (mean year born was 1992 with a standard deviation of 3.08). By comparison, students undertaking a doctorate were older than the other study levels with a mean age of 31 years (mean year born was 1983 with a standard deviation of 6.18).

Using Pearson’s correlation, a statistically significant relationship was found between the year born and the length of time until graduation, $r = 0.14, p = 0.03$. This would suggest that the younger the participants (that is the later the year born), the longer they had until they graduated.

<table>
<thead>
<tr>
<th>Involvement Scores</th>
<th>Cronbach’s alpha</th>
<th>Number of items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of involvement score</td>
<td>.937</td>
<td>18</td>
</tr>
<tr>
<td>Quantity of involvement score</td>
<td>.853</td>
<td>11</td>
</tr>
<tr>
<td>Student involvement score</td>
<td>.898</td>
<td>29</td>
</tr>
</tbody>
</table>
A statistically significant relationship was identified between year born and the quality of involvement score using Pearson’s correlation, $r = 0.14$, $p = 0.03$. Younger participants placed a higher value on the quality of activities they were involved in compared to older participants. This significant relationship is a new contribution to the literature and will be discussed further in chapter five.

With regard to specific activities, a statistically significant relationship was found using Pearson’s correlation between the year born and three activities: (d) Exercising as part of a group or team; (j) Participating in organised activities with other international students; and (k) Participating in organised activities with Australian students. Table 4.4.1.1 presents the $r$ and $p$ values for each of these three activities. The results show that as participants’ age increases, their participation in these three activities decreases.

Table 4.4.1.1 Pearson’s correlation $r$ and $p$ values for year born and participation in three activities

<table>
<thead>
<tr>
<th>Activity</th>
<th>$r$</th>
</tr>
</thead>
<tbody>
<tr>
<td>(d) Exercising as part of a group or team</td>
<td>0.15*</td>
</tr>
<tr>
<td>(j) Participating in organised activities with other international students</td>
<td>0.17**</td>
</tr>
<tr>
<td>(k) Participating in organised activities with Australian students</td>
<td>0.19**</td>
</tr>
</tbody>
</table>

Note: $N = 206$, * $p < 0.05$, ** $p < 0.01$.

A Chi-Square analysis was undertaken to investigate if different age groups preferred to fund their studies in a different manner. The results indicated that younger participants were more reliant on family as their main funding source, $X^2 (20) = 117.26$, $p < 0.01$. It was found that 96% ($n = 26$) of the 18-19 year old participants and 74% ($n = 77$) of the 20-24 years old participants were funded by their families, while
70% (n = 24) of the participants who were over 30 years old received scholarships. This major finding will be discussed further in chapter five.

4.4.2 Time

This category includes the results of analysis of data on participants’ time spent travelling to and from university, time spent travelling to and from work, and the time spent in paid employment.

Using Pearson’s correlation, a statistically significant relationship was found between the time participants spent travelling to and from work with the length of time participants spent working in paid employment, \( r = 0.76, p < 0.01 \). This suggested that the more time participants spent travelling to and from work, the more hours per week they worked.

Using a one-way ANOVA analysis, statistically significant differences were found between the amount of time participants spent travelling to and from work and whether they had seriously considered withdrawing from studies. \( F(1, 218) = 10.18, p < 0.01 \). A statistically significant difference was also found to exist between the amount of time participants spent working and whether they had seriously considered withdrawing from studies, \( F(1, 218) = 8.96, p < 0.01 \).

Of the 36 participants who indicated that they had seriously considered withdrawing, the mean time spent travelling to and from work was 4.67 hours per week with a standard deviation of 12.67 hours. These same participants spent an average of 6.39 hours per week working with a standard deviation of 15.64 hours. In contrast, those who had not considered withdrawing from study had a mean of 0.84 hours travelling to and from work each week with a standard deviation of 4.58. Those who had not considered withdrawing also had a mean number of hours worked per week of 2.00 with a standard deviation of 5.51 hours per week. These are major findings for this
research. These findings are consistent with the qualitative responses which suggested an increase in work opportunities and reduced costs would assist international students in improving their student experience. These findings will be investigated further in the following chapter.

Using Pearson’s correlation, significant relationships were found between the amount of time participants spent travelling to and from paid employment and a number of activities. The $r$ and $p$ values for these relationships are displayed in Table 4.4.2.1 below.

Table 4.4.2.1 Pearson’s correlation $r$ and $p$ values for time spent travelling to and from paid employment and six activities

<table>
<thead>
<tr>
<th>Activity</th>
<th>$r$</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Volunteering for a community / charity organisation including a religious or faith based organisation</td>
<td>0.20**</td>
</tr>
<tr>
<td>(d) Exercising as part of a group or team</td>
<td>0.21**</td>
</tr>
<tr>
<td>(e) Participating in a cultural group or association</td>
<td>0.19**</td>
</tr>
<tr>
<td>(f) Participating in organised arts / crafts groups or associations</td>
<td>0.19**</td>
</tr>
<tr>
<td>(g) Participating in organised on-campus social activities (excluding drinking at a bar)</td>
<td>0.26**</td>
</tr>
<tr>
<td>(h) Participating in social / informal off-campus activities (including drinking at a bar)</td>
<td>0.21**</td>
</tr>
</tbody>
</table>

Note: $N = 206$, ** $p < 0.01$.

4.4.3 Study

This section includes analysis of participants’ study levels, study lengths and lengths of time remaining until graduation.
A one-way ANOVA analysis found a significant difference existed between the study level of participants and the length of time until they graduated, $F(3, 215) = 5.92, p < 0.01$. Undergraduate participants had a mean length of study remaining of 23 months with a standard deviation of 16 months, while master’s students had significantly less time remaining until graduation with 15 months and a standard deviation of 10.7 months. Participants who indicated they were studying at a doctorate level had a mean length of time remaining until graduation of 26.4 months with a standard deviation of 12 months. It is likely that this reflects the full-time course length with undergraduate degrees being three to four years, master’s degrees being one to two years and doctorate degrees being significantly longer in many cases.

Using a one-way ANOVA, a statistically significant difference was found between the length of time until graduation and the age group categories, $F(5, 213) = 5.67, p < 0.01$. This result shows that the younger age groups have a longer time until that graduate in comparison to the older age groups. For example, 18-19 year old participants ($n = 27$) had almost three years remaining until graduation with the mean being 34.7 months and the standard deviation being 10.9 months, while 25-29 year old participants ($n = 55$) had approximately one and a half years until graduation with their mean being 19.4 months and standard deviation being 13.5 months.

A Chi-Square analysis was conducted to identify preferences between study level and main funding source. A statistically significant relationship was found to exist between them, $X^2(12) = 146.01, p < 0.01$. It was found that undergraduate students were most likely to receive funding from their family (73%, $n = 91$) while doctoral students were most likely to receive a scholarship from an Australian university (72.5%, $n = 29$). This finding is consistent with the previously discussed finding on the relationship between age groups and funding sources. This will be expanded upon in chapter five.
A one-way ANOVA analysis revealed significant differences between the study level of participants and four activities. These findings are displayed in Table 4.4.3.1 with the degrees of freedom (Between Groups, Within Groups), $F$ and $p$ values.

### Table 4.4.3.1 One-way ANOVA $F$ and $p$ values for the relationship between study level and four activities

<table>
<thead>
<tr>
<th>Activity</th>
<th>$F$ (3, 202)</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>(d) Exercising as part of a group or team</td>
<td>2.96*</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>(e) Participating in cultural groups or associations</td>
<td>3.25*</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>(j) Participating in organised activities with other international students</td>
<td>2.99*</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>(k) Participating in organised activities with Australian students</td>
<td>5.60**</td>
<td>&lt; 0.01</td>
</tr>
</tbody>
</table>

#### 4.4.4 Living Arrangements

A Chi-Square test was conducted to analyse the preferences of living arrangements at each study level. A statistically significant relationship was found to exist, $X^2 (12) = 41.84$, $p < 0.01$. The results showed that 74.1% ($n = 80$) of participants living in student accommodation, either on-campus or in an off-campus student accommodation facility, were undergraduate students. Of the participants who were living off-campus by themselves, 70.4% ($n = 19$) were undertaking postgraduate studies at either a master’s or doctorate level. These results suggest living in a student accommodation facility is more convenient for international students getting started at an Australian university.

Using a Chi-Square analysis to determine a preference of living arrangements in relation to main funding source, a significant relationship was found, $X^2 (16) = 34.28$,
It was found that 67.0% (n = 63) of students living on-campus in a residential hall or college environment received the majority of their funding from their family. Of the 69 participants who were living off-campus in a rental property with friends, 46.4% (n = 32) received the majority of their funding from their family, while 43.5% (n = 30) received funding through a scholarship either from an Australian university (n = 18) or their home country (n = 12).

Using a one-way ANOVA analysis, a statistically significant difference was found between the quantity of involvement score and participants’ living environments, $F(4, 201) = 4.24, p < 0.01$. The results revealed that participants living on-campus in a residential hall or college had a higher quantity of involvement score with a mean of 21.71 and a standard deviation of 16.88 in comparison to those in other living options. Participants with the lowest quantity of involvement score were found to be living off-campus by themselves. The mean quantity of involvement score for them was 11.04 with a standard deviation of 6.48. This is a major finding and will be discussed in the following chapter.

Significant differences were found between participants’ living arrangements and their SIS using one-way ANOVA analysis, $F(4, 182) = 3.82, p < 0.01$. Similarly to the results of the previous analysis, participants living on-campus in a residential hall or college had a higher SIS with a mean score of 11.72 and a standard deviation of 10.00. Participants living off-campus by themselves were found to have the lowest student involvement score with a mean SIS of 5.41 and a standard deviation of 3.58. This too is a major finding for this research. The extension of the above two major findings beyond simply differentiating between the location of the accommodation as either on-campus and off-campus accommodation represents a unique contribution to the literature. Chapter five provides an additional discussion on the relevance of this.
Five activities were found to have statistically significant differences with the residential environment using a one-way ANOVA analysis. These were:

- (d) Exercising as part of a group or team, $F(4, 201) = 3.43, p = 0.01$;
- (e) Participating in cultural group or association, $F(4, 201) = 2.76, p = 0.03$;
- (g) Participating in organised on-campus social activities, $F(4, 201) = 2.92, p = 0.02$;
- (j) Participating in organised activities with other international students, $F(4, 201) = 7.43, p < 0.01$; and
- (k) Participating in organised activities with Australian students, $F(4, 201) = 7.84, p < 0.01$.

Participants living on-campus in a residential hall or college spent more time per week involved in each of these activities than did participants living in any other residential option. Table 4.4.4.1 presents the mean and standard deviation of each of these activities and the living options.
Table 4.4.4.1 Mean and standard deviation results for living arrangements and five activities

<table>
<thead>
<tr>
<th></th>
<th>On-campus in a residential hall or college</th>
<th>Off-campus in a student accommodation facility</th>
<th>Off-campus by yourself</th>
<th>Off-campus in a rental property with friends</th>
<th>Off-campus with family or relatives</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$n = 85$</td>
<td>$n = 13$</td>
<td>$n = 27$</td>
<td>$n = 65$</td>
<td>$n = 16$</td>
</tr>
<tr>
<td>Mean</td>
<td>0.87</td>
<td>0.24</td>
<td>0.44</td>
<td>0.58</td>
<td>0.06</td>
</tr>
<tr>
<td>SD</td>
<td>1.08</td>
<td>0.66</td>
<td>0.70</td>
<td>0.86</td>
<td>0.25</td>
</tr>
<tr>
<td>(d) Exercising as part of a group or team</td>
<td>0.84</td>
<td>0.38</td>
<td>0.41</td>
<td>0.43</td>
<td>0.69</td>
</tr>
<tr>
<td></td>
<td>1.00</td>
<td>0.51</td>
<td>0.57</td>
<td>0.77</td>
<td>1.08</td>
</tr>
<tr>
<td>(e) Participating in a cultural group or association</td>
<td>0.94</td>
<td>0.69</td>
<td>0.37</td>
<td>0.57</td>
<td>0.50</td>
</tr>
<tr>
<td></td>
<td>0.97</td>
<td>1.11</td>
<td>0.49</td>
<td>0.98</td>
<td>0.52</td>
</tr>
<tr>
<td>(g) Participating in organised on-campus social activities</td>
<td>1.52</td>
<td>0.85</td>
<td>0.59</td>
<td>0.98</td>
<td>0.44</td>
</tr>
<tr>
<td></td>
<td>1.21</td>
<td>0.69</td>
<td>0.50</td>
<td>1.01</td>
<td>0.63</td>
</tr>
<tr>
<td>(j) Participating in organised activities / interactions with other international students</td>
<td>1.28</td>
<td>0.69</td>
<td>0.33</td>
<td>0.71</td>
<td>0.38</td>
</tr>
<tr>
<td></td>
<td>1.10</td>
<td>0.95</td>
<td>0.48</td>
<td>0.93</td>
<td>0.72</td>
</tr>
<tr>
<td>(k) Participating in organised activities / interactions with Australian students</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The time range was: zero = 0 hours per week; one = 1-5 hours per week; two = 6-10 hours per week; three = 11-15 hours per week; four = 16-20 hours per week; and five = 21 or more hours per week.
A significant difference was found between year born and participants' living arrangements using a one-way ANOVA, $F(4, 215) = 14.43, p < 0.01$. It was established that younger participants lived in specific student accommodation facilities either on or off-campus. The average age of students in both an on-campus residential hall or college and an off-campus student accommodation facility was 23 with the mean year born for both accommodation options being 1991 and the standard deviation being 3.77 and 2.03 respectively. By comparison, students living off-campus by themselves were the oldest with an average age of 30 represented by a mean year born of 1984 and a standard deviation of 5.17. This result was supported by undertaking a Chi-Square analysis of participants' age group and their preference of living arrangements, $X^2(20) = 71.66, p < 0.01$.

Consistent with the above findings that younger students preferred to live on campus, a Chi-Square test was undertaken to investigate preferences of living arrangements in relation to how long participants had been studying in Australia. A statistically significant result was found to exist between these two variables, $X^2(20) = 35.08, p = 0.02$. It was found that 53.9% ($n = 83$) of participants who had been studying for less than two years were living in a student accommodation facility, either on-campus or off-campus.

Using a one-way ANOVA analysis, a significant difference was found between participants' living arrangements and how they described their out-of-class experience, $F(4, 181) = 2.85, p = 0.03$. This analysis showed that those living in a student accommodation facility rated their out-of-class student experience higher than students living in any other accommodation options. Participants living in an off-campus student accommodation option rated their out-of-class experience as the best with a mean of 4.17 and a standard deviation of 0.58. This was slightly higher than the on-campus accommodation option which rated their experience with a mean score of 3.93 with a standard deviation of 0.79. Participants living off-campus with
family or relatives rated their out-of-class student experience as the lowest with a mean score of 3.46 and a standard deviation of 1.13. This finding provides a major insight into improving the out-of-class experience of international students and will be discussed further in chapter five. This new contribution to the literature demonstrates that the distance of the accommodation from the university is not a determining factor in increasing the international student experience.

4.4.5 Involvement Scores

This section reports on significant relationships using the quality of involvement score, quantity of involvement score and the SIS.

Using Pearson’s correlation, a statistically significant relationship was found to exist between participants’ quantity of involvement scores and how they rated their out-of-class student experience, $r = 0.19$, $p = 0.01$. The results of this analysis showed that the more time participants spent in out-of-class activities, the better they perceived their student experience.

Further to this, an analysis was undertaken using Pearson's correlation to examine a relationship between participants’ student involvement scores and how they described their out-of-class student experience. A statistically significant relationship was found to exist between these, with $r = 0.16$, $p = 0.03$. This also demonstrated that the higher participants’ student involvement score was, the better experience they had. The relevance of this major finding will be explored further in the following chapter.

A statistically significant relationship was found to exist between the quality of involvement scores and the quantity of involvement scores using Pearson’s correlation analysis. It was found that $r = 0.21$, $p < 0.01$. This tends to suggest that
the higher the quality of the activities, the more likely the international students were
to participate in them.

Using a one-way ANOVA analysis, a statistically significant difference was found between participants’ SIS and their main funding source with $F(4, 182) = 2.34, p = 0.05$. This analysis found that participants who funded their studies themselves through savings had a higher SIS with a mean of 14.09 and a standard deviation of 13.59. Participants who received a scholarship from an Australian university had the lowest SIS with a mean of 6.47 and a standard deviation of 5.20. This tends to suggest that participants who were funding their studies themselves were making the most of the opportunities provided, while those that had received a scholarship may have been missing out on the student experience in order to focus more on their studies. This is a significant finding with regard to addressing international student attrition and will be discussed further below. This new contribution to the international education literature is distinctively different from previous findings of predominantly domestic data sources.

A one-way ANOVA analysis was conducted on the SIS and participants’ gender. A significant difference was found to exist, $F(1, 185) = 6.07, p = 0.01$. Male participants were found to have a higher SIS with a mean of 10.82 and a standard deviation of 10.01, while the mean female student involvement score was 7.73 with a standard deviation of 7.14. This major finding is consistent with existing literature on student involvement and student engagement. The impact of this major finding will be discussed in chapter five.

Using Pearson’s correlation analysis, statistically significant relationships were found to exist between how participants described their out-of-class experience and five specified activities. These activities along with the $r$ value and significance level are presented in Table 4.4.5.1. Four of these five activities directly supported the
qualitative findings that indicated more activities and events, to interact with both domestic and other international students, are required to improve international students’ out-of-class experience.

Table 4.4.5.1 Pearson's r and p values for how participants rated their out-of-class experience and five activities

<table>
<thead>
<tr>
<th>Activity</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>(d) Participating in organised on-campus social activities (excluding drinking at a bar)</td>
<td>0.16*</td>
</tr>
<tr>
<td>(g) Participating in social / informal off-campus activities (including drinking at a bar)</td>
<td>0.15*</td>
</tr>
<tr>
<td>(j) Participating in organised activities / interactions with other International students</td>
<td>0.23**</td>
</tr>
<tr>
<td>(k) Participating in organised activities / interactions with Australian students</td>
<td>0.29**</td>
</tr>
</tbody>
</table>

Note: N = 186, * p < 0.05, ** p < 0.01.

4.4.6 Cultural Dimensions

Using Pearson’s correlation, a statistically significant negative relationship was found between the year born and the UAI, $r = -0.19, p < 0.01$. This suggests that participants from countries with a strong uncertainty avoidance tend to study in a foreign country at an older age. International students from countries that are more accepting of uncertain situations tend to study in Australia from a younger age.

Using Pearson’s correlation, a statistically significant negative relationship was also found to exist between the UAI and the quality of involvement score, $r = -0.22, p < 0.01$. This suggests that participants from cultures with strong uncertainty avoidance (higher UAI score) tend to prefer activities that are of lower quality. This was supported
by a one-way ANOVA analysis between the UAI and the activity level of involvement of participants’ most important activities contributing to their student experience. A statistically significant difference was found to exist between these categories, $F (2, 159) = 4.54, p = 0.01$.

A statistically significant negative relationship was found to exist between the PDI and how participants described their out-of-class experience, using a Pearson’s correlation analysis. It was found that $r = -0.20, p = 0.01$. This result suggests that students from cultures with a higher power distance tend to rate their out-of-class experience as lower than those originating from a low power distance culture. This major finding supports existing literature on the structure required to increase team participation in cultures with a high PDI; moreover, it also provides a new contribution to the literature on international education.

A significant relationship was also found using Pearson’s correlation between the IDV index and how participants described their out-of-class experience, $r = 0.19, p = 0.02$. This suggests that international students from more individualistic cultures, similar to Australia, tend to rate their experience as higher than those who come from collectivist cultures. This major finding supports previous literature on the impact cultural distance has on international students’ loneliness and isolation. This is also consistent with the qualitative findings that indicated the challenges international students face as a result of different teaching and learning styles and the need for additional support to overcome these challenges.

Using Pearson’s correlation, a statistically significant relationship was found between the study length of participants and three of Hofstede’s cultural dimensions. The relationship with PDI was positive, $r = 0.15, p = 0.04$, while the relationships between study length and both the IDV and UAI were negative with $r = -0.25, p < 0.01$ and $r = -0.19, p < 0.01$ respectively. This suggests that students from cultures with a high PDI
and low IDV had been studying in Australia for longer than those from cultures with a lower PDI and higher IDV. This result also suggests that students who come from cultures with a strong UAI had been studying in Australia for a shorter time than those participants from cultures with a weaker UAI.

Using a one-way ANOVA, an analysis was undertaken to determine if there was a difference between the main funding sources of participants and of Hofstede's cultural dimensions. In three of the four dimensions, a significant difference was found. No significant difference was found to exist between funding source and the masculinity dimension. These major findings are briefly explained in this section and will be discussed further in chapter five. The significant relationships are presented below:

- **UAI** where $F(4, 186) = 3.82, p < 0.01$. This indicated that students from cultures with a strong UAI prefer to have secured scholarships prior to studying in a foreign country. The funding source representing scholarships from Australian universities had a mean UAI of 51.93 with a standard deviation of 24.68. Participants who were funding themselves had the second highest mean UAI score of 47.75 and a standard deviation of 25.98. This was closely followed by participants who received scholarships from their home country who had a mean UAI score of 47.58 and a standard deviation of 19.16. These also represent relatively certain funding methods. Participants with the lowest UAI funded themselves through current employment. Their mean UAI was 32.56 with a standard deviation of 27.86. Given international students are restricted to a maximum of 20 hours per week during the academic teaching period, this funding method would represent the highest risk. This finding represents a unique contribution to the literature by linking the UAI scores with funding option.

- **PDI** where $F(4, 186) = 4.31, p < 0.01$. These results show that participants from countries with a high PDI were more likely to receive funding from their
family with a mean of 79.22 and a standard deviation of 21.05, while participants from cultures with a low PDI were more likely to receive funding in the form of a scholarship from their home country. The latter funding option produced a mean score of 64.00 with a standard deviation of 27.25. This suggests that in cultures with lower PDI, people are treated equally by way of providing opportunities via scholarships to study overseas, whereas in cultures with a higher PDI, the unequal distribution of wealth requires parents and families to fund the same opportunity.

- IDV where $F(4, 186) = 3.75, p < 0.01$. The results of this analysis showed that participants who were funded by their family had the lowest IDV mean score of 30.88 with a standard deviation of 19.05, and therefore represented collectivist cultures. Participants with the higher IDV scores were funded by scholarships from their home country with a mean of 46.71 and a standard deviation of 26.96. Participants funding themselves could also be described as being from individualist cultures with self-funding through savings having a mean of 44.88 and a standard deviation of 27.93 and self-funding through current employment having a mean IDV score of 39.00 and a standard deviation of 26.50. This finding supports previous literature that highlighted international students from collectivist cultures tended to be financially supported by their families (Obeng-Odoom 2012).

Using a one-way ANOVA analysis, a significant difference was found to exist between the study level of participants and their UAI, $F(3, 187) = 6.93, p < 0.01$. These results showed that participants with lower UAI scores (i.e., from weaker UAI cultures) tended to undertake honours and undergraduate studies while participants with higher UAI scores tended to study postgraduate courses. This could be explained by the longer time commitment required for postgraduate courses providing more certainty in the short-term.
A significant difference was found to exist between the study level of participants and the masculinity index, using a one-way ANOVA, \( F (3, 187) = 2.87, p = 0.04 \). The results of this analysis suggested that participants from more masculine, competitive, assertive societies tended to study at a higher level in order to obtain a competitive advantage in the workplace. Here, the mean masculinity scores for master’s degree participants were 56.83 with a standard deviation of 11.58 and doctorate degree participants had a mean of 52.97 with a standard deviation of 10.68. In comparison to this, participants studying at an undergraduate level had a mean of 50.96 with a standard deviation of 11.99.

Using a one-way ANOVA analysis, statistically significant differences were found to exist between two of Hofstede’s cultural dimensions and the activity level of involvement scores. With PDI, \( F (2, 159) = 4.28 \) and \( p < 0.02 \), while with UAI, \( F (2, 159) = 4.54 \) with \( p = 0.01 \). The mean and standard deviations for each of these relationships are displayed in Table 4.4.6.1 below.

### Table 4.4.6.1 The relationship between two of Hofstede’s cultural dimensions and the activity level of involvement

<table>
<thead>
<tr>
<th></th>
<th>PDI</th>
<th>UAI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Mean</strong></td>
<td><strong>SD</strong></td>
</tr>
<tr>
<td>Activities with a low level of involvement (( n = 39 ))</td>
<td>66.51</td>
<td>23.34</td>
</tr>
<tr>
<td>Activities with a medium level of involvement (( n = 82 ))</td>
<td>77.88</td>
<td>19.60</td>
</tr>
<tr>
<td>Activities with a high level of involvement (( n = 41 ))</td>
<td>78.24</td>
<td>22.86</td>
</tr>
</tbody>
</table>
Only one of the activities listed on the questionnaire was found to have a significant relationship with Hofstede’s cultural dimensions. Using a Pearson’s correlation, volunteering for a community / charity organisation was found to be statistically significantly related to the power distance and individualism dimensions. For PDI, \( r = 0.15, p = 0.05 \), while for IDV, \( r = -0.15, p = 0.04 \). These indicate that participants from cultures with a larger power distance and lower individualism tend to volunteer more for community and charity organisations.

4.4.7 Activity Interrelatedness

Using Pearson’s correlation, significant relationships were found between all eleven activities. The \( r \) and \( p \) values of these relationships are presented in Table 4.4.7.1.
Table 4.4.7.1 Pearson's correlation $r$ and $p$ values for the interrelatedness of eleven activities

<table>
<thead>
<tr>
<th>Activity</th>
<th>Ab</th>
<th>Ac</th>
<th>Ad</th>
<th>Ae</th>
<th>Af</th>
<th>Ag</th>
<th>Ah</th>
<th>Al</th>
<th>Aj</th>
<th>Ak</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volunteering for a community / charity organisation including a religious or faith-based organisation (Aa)</td>
<td>0.31**</td>
<td>0.27**</td>
<td>0.21**</td>
<td>0.43**</td>
<td>0.25**</td>
<td>0.48**</td>
<td>0.33**</td>
<td>0.14*</td>
<td>0.27**</td>
<td>0.18*</td>
</tr>
<tr>
<td>Participating in a sporting club (Ab)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.47**</td>
<td>0.65**</td>
<td>0.43**</td>
<td>0.42**</td>
<td>0.41**</td>
<td>0.34**</td>
</tr>
<tr>
<td>Exercising by yourself (Ac)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.46**</td>
<td>0.29**</td>
<td>0.21**</td>
<td>0.40**</td>
<td>0.30**</td>
<td>0.29**</td>
</tr>
<tr>
<td>Exercising as part of a group or team (Ad)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.34**</td>
<td>0.34**</td>
<td>0.44**</td>
<td>0.33**</td>
<td>0.16*</td>
</tr>
<tr>
<td>Participating in a cultural group or association (Ae)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.41**</td>
<td>0.53**</td>
<td>0.43**</td>
<td>0.26**</td>
</tr>
<tr>
<td>Participating in organised arts / crafts groups or associations (Af)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.47**</td>
<td>0.38**</td>
<td>0.22**</td>
</tr>
<tr>
<td>Participating in organised on-campus social activities (excluding drinking at a bar) (Ag)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.55**</td>
<td></td>
<td>0.33**</td>
<td>0.49**</td>
<td>0.44**</td>
</tr>
<tr>
<td>Participating in organised off-campus activities (including drinking at a bar) (Ah)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.21**</td>
<td>0.38**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undertaking additional studies to benefit your academic results (this may include informal tutorials, attending professional presentations, non-prescribed reading) (Ai)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.26**</td>
</tr>
<tr>
<td>Participating in organised activities / interactions with other international students (Aj)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participating in organised activities / interactions with Australian students (Ak)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: $N=206$, * $p < 0.05$, ** $p < 0.01$. 
4.5 Multiple Regression

In preparation for the multiple regression analysis to predict the SIS, a series of new variables were created. These involved converting all of the existing categorical, or nominal, variable options into their own variables. For example, current living arrangements contained five categories ranging from on-campus in a residential hall or college, to off-campus renting by themselves. These were separated into their own categorical variables to reflect either living on-campus in a residential hall or college (coded as one), or not (all other living arrangements in this variable were coded with a zero). Other variables that were recoded include: Age group category; Gender (converted to female); Study length so far; Time until graduation; Time spent travelling to university per day; Level of study; Funding methods; and the rating of participants’ out-of-class experience.

Using Pearson’s correlation, a number of significant relationships were found between the new variables and the SIS. The three activity levels of involvement were found to have a significant relationship with the SIS. Both low and medium levels of involvement were negatively correlated with $r = -0.35$ ($p < 0.01$) and $r = -0.18$ ($p < 0.05$) respective. The high level of involvement activities were positively correlated with the SIS with an $r = 0.526$ ($p < 0.01$).

For the living arrangement variables, two were found to have significant relationships with the SIS using Pearson’s correlation. On-campus residential hall or college was found to have a positive relationship with SIS, while participants living off-campus by themselves were found to have a negative relationship with SIS. The three other living arrangement categories each had negative relationships; however, these were not statistically significant. The $r$ and $p$ values of these variables are provided in Table 4.5.1.
Table 4.5.1 The relationships between SIS and the five living arrangements using Pearson's correlation $r$ and $p$ values

<table>
<thead>
<tr>
<th>Living arrangements</th>
<th>$r$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-campus in a residential hall or college</td>
<td>0.265</td>
<td>&lt; 0.01</td>
</tr>
<tr>
<td>Off-campus in a student accommodation facility</td>
<td>-0.06</td>
<td>0.15</td>
</tr>
<tr>
<td>Off-campus by themselves</td>
<td>-0.164</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>Off-campus in a rental property with friends</td>
<td>-0.11</td>
<td>0.15</td>
</tr>
<tr>
<td>Off-campus with family or relatives</td>
<td>-0.04</td>
<td>0.61</td>
</tr>
</tbody>
</table>

The new variable, ‘female’ was found to have a significant negative relationship with SIS, using Pearson’s correlation $r = -0.18$ and $p < 0.05$. This indicates that female international students are less involved than male international students.

An analysis of the relationships between the study levels of participants and SIS found that a statistically significant relationship existed between undergraduate students and the student involvement score with a Pearson’s correlation $r = 0.17$ and $p < 0.05$. While the three other levels of study generated a negative relationship, they were not statistically significant with honours level $r = -0.00$ and $p = 0.963$, masters level $r = -0.10$ and $p = 0.19$ and doctorate level $r = -0.11$ and $p = 0.14$.

Participants funding their studies by themselves through their savings were found to be the only funding category with a statistically significant relationship of $r = 0.19$ and $p < 0.01$. This confirmed the result of an earlier one-way ANOVA analysis using the main funding source variable.

Participants who had been studying in Australia for more than five years were found to have a positive relationship with their SIS, using Pearson’s correlation. The results showed that for this group, $r = 0.18$ and $p < 0.05$. There was no statistically significant relationship between participants and any other study duration.
No statistically significant relationships were found with any of the new variables in the age group, time until graduation and the amount of time spent travelling to university. One significant relationship was found to exist between participants’ out-of-class experience and their SIS. Participants who identified their out-of-class experience as ‘good’ were found to have a statistically significant relationship using Pearson’s correlation with an $r = 0.17$ and a $p < 0.05$. The relationships between SIS and those who identified their out-of-class experience as being either very poor, poor or neutral, were all negative; however, these were not statistically significant. Likewise, the relationship between the SIS and participants who stated their out-of-class experience as very good, was positive. However, this relationship was also not statistically significant. The $r$ and $p$ values of these relationships are presented in Table 4.5.2 below.

<table>
<thead>
<tr>
<th>Out-of-class experience rating</th>
<th>$r$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very poor</td>
<td>-0.04</td>
<td>0.55</td>
</tr>
<tr>
<td>Poor</td>
<td>-0.11</td>
<td>0.15</td>
</tr>
<tr>
<td>Neutral</td>
<td>-0.13</td>
<td>0.08</td>
</tr>
<tr>
<td>Good</td>
<td>0.17</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>Very good</td>
<td>0.03</td>
<td>0.73</td>
</tr>
</tbody>
</table>

The aim of the multiple regression analysis is to be able to predict an international student’s level of involvement using background information and characteristics. In undertaking the analysis, only variables relating to questions that could reasonably be answered prior to commencing study in Australia were included. For example, while
there is a relationship between SIS and how participants rated their out-of-class experience, as identified above, this can only be rated after the event and therefore this was not included as a variable in the regression calculation. The same rule was applied to existing variables such as if participants had seriously considered withdrawing from their studies. Given the intent is to predict (in advance), intercept and be able to reduce the likelihood of international students seriously considering withdrawing, this variable was not included. A list of the independent variables included in the stepwise regression calculation is provided below in Table 4.5.3.

Table 4.5.3 Independent variables included in the stepwise multiple regression calculation

<table>
<thead>
<tr>
<th>Variable category</th>
<th>Variables included</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity level of involvement</td>
<td>Low level</td>
</tr>
<tr>
<td></td>
<td>Medium level</td>
</tr>
<tr>
<td></td>
<td>High level</td>
</tr>
<tr>
<td>Living arrangements</td>
<td>On-campus residential hall or college</td>
</tr>
<tr>
<td></td>
<td>Off-campus student accommodation facility</td>
</tr>
<tr>
<td></td>
<td>Off-campus by themselves</td>
</tr>
<tr>
<td></td>
<td>Off-campus in a rental property with friends</td>
</tr>
<tr>
<td></td>
<td>Off-campus with family or relatives</td>
</tr>
<tr>
<td>Current study level</td>
<td>Undergraduate level</td>
</tr>
<tr>
<td></td>
<td>Honours level</td>
</tr>
<tr>
<td></td>
<td>Master’s level</td>
</tr>
<tr>
<td></td>
<td>Doctorate level</td>
</tr>
<tr>
<td>Variable category</td>
<td>Variables included</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Main funding source              | Self – through own employment  
Self – through savings  
Family  
Scholarship from an Australian university  
Scholarship from home country / university |
| Cultural dimension scores        | Power distance  
Individualism  
Uncertainty Avoidance  
Masculinity |
| Age group                         | 18 – 19 years  
20 – 24 years  
25 – 29 years  
30 – 34 years  
35 – 49 years  
50 years and over               |
| Time spent travelling to and from university per day | 0 to 30 minutes  
31 to 60 minutes  
61 to 90 minutes  
91 to 120 minutes  
Note: no participants in this data travelled for more than 120 minutes per day, therefore this variable was removed. |
| Gender                            | Female                                                                                                                                            |

Note: Table 4.5.3 continued.
<table>
<thead>
<tr>
<th>Variable category</th>
<th>Variables included</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time spent working per week</td>
<td>Zero hours</td>
</tr>
<tr>
<td></td>
<td>1 to 10 hours</td>
</tr>
<tr>
<td></td>
<td>11 to 20 hours</td>
</tr>
<tr>
<td></td>
<td>21 or more hours</td>
</tr>
<tr>
<td>Time spent travelling to and from work</td>
<td>Included as a continuous / scale variable</td>
</tr>
</tbody>
</table>

The stepwise regression equation identified five independent variables that when combined, significantly contributed to predicting the SIS of international students. These variables were: (1) Activities that were identified as most important to participants’ out-of-class experience that had a high level of involvement; (2) The time spent travelling to and from work per week; (3) Living in an on-campus residential hall or college; (4) Activities identified as the most important to participants’ out-of-class experiences that consisted of a medium level of involvement; and (5) Female participants. The $r^2$ of this regression model was .496 and the adjusted $r^2 = .480$ at $p < 0.05$. This suggests that these variables predict 48% of the total variance in the SIS amongst international students. Table 4.5.4 presents the standardised beta weights, $r^2$ change and the standard error of estimates for this model.
Table 4.5.4 Results of the stepwise multiple regression analysis predicting student involvement scores

<table>
<thead>
<tr>
<th>Variables</th>
<th>Standardised Beta weights</th>
<th>R-Squared change</th>
<th>Standard error of estimates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant – SIS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 – High involvement activities</td>
<td>0.617</td>
<td>0.276</td>
<td>7.344</td>
</tr>
<tr>
<td>2 – Time spent travelling to work</td>
<td>0.354</td>
<td>0.114</td>
<td>6.743</td>
</tr>
<tr>
<td>3 – On-campus living</td>
<td>0.224</td>
<td>0.050</td>
<td>6.482</td>
</tr>
<tr>
<td>4 – Medium involvement activities</td>
<td>0.243</td>
<td>0.037</td>
<td>6.282</td>
</tr>
<tr>
<td>5 – Female</td>
<td>-0.129</td>
<td>0.017</td>
<td>6.201</td>
</tr>
</tbody>
</table>

The results of this stepwise multiple regression analysis show that four of the five variables were positive predictors of the SIS, while female gender was a negative predictor. This is consistent with the previous findings that indicate male participants had a higher level of student involvement in comparison to female participants. The positive contribution that time spent travelling to work added to this model was initially a surprising result. This indicates that the more time spent travelling to work, the more involved international students are. This will be discussed further in chapter five.

While a predictor power of 48% could be considered a modest level in statistical terms, when predicting the factors involved in human behaviour, this level is empirically supported; see Strauss & Terenzini (2007) with an $r^2 = 0.201$, Melius (2011) with an $r^2 = 0.225$, Sharma & Bhaumik (2013) with an $r^2 = 0.338$ and Li, Chen & Duanmu (2010) with an $r^2$ of between 0.325 and 0.403.
4.6 Summary of Major Findings

The analysis of this research identified a large number of statistically significant relationships and differences amongst variables. Of these, there were 16 major findings that will be explored further to address the research questions posed by this project. These major findings were:

1) A positive relationship existed between international students’ years born and their quality of involvement. Younger students placed a greater value on higher quality activities.

2) Significant differences were found between the six age group categories and participants’ funding choices. Younger participants were more likely to be funded by their families, while older participants were more likely to be funded through scholarships.

3) Consistent with major finding two, significant differences were found between study levels and funding choices. Participants studying at the undergraduate level were more likely to be funded by their families, while older doctoral students received most of their funding from Australian universities.

4) As participants increased the amount of time spent travelling to and from work, they were more likely to consider withdrawing from their studies.

5) Similarly, an increase in the amount of time participants spent working per week resulted in a higher likelihood that they would seriously consider withdrawing from their studies.

6) Statistically significant differences were found between participants’ residential living environments and their quantity of involvement. International students living in a residential hall or college were found to have the highest quantity of involvement, while those living off-campus by themselves had the lowest participation levels.
7) Consistent with major finding six, participants’ choice of living arrangement significantly impacted their SIS. International students living in a residential hall or college had the highest SIS, while international students living by themselves had the lowest scores.

8) Students living in residential communities rated their out-of-class experience as higher than other living arrangements. International students living with family or relatives rated their out-of-class experience as the lowest of all the living choices.

9) A statistically significant relationship was found between SIS and how participants’ rated their out-of-class experience. This indicated that the higher participants’ SIS, the better their out-of-class experience.

10) Significant differences were found between participants’ SIS and their funding choices. Participants who funded their studies themselves through savings had a higher SIS, while participants on a scholarship from an Australian university had the lowest SIS.

11) Male participants had a higher SIS than females.

12) A negative relationship existed between participants’ PDI and how they rated their out-of-class experiences. Participants from cultures with higher PDI scores rated their out-of-class experience as lower than participants from cultures with lower PDI scores.

13) The IDV scores were positively related to how participants rated their out-of-class experience. Participants from more individualistic cultures rated their experience as higher than did participants from collectivist cultures.

14) Statistically significant differences were found between participants’ UAI scores and their funding choices. Participants from cultures with stronger UAI opted for more secure funding options. Participants who funded their studies through current employment were from cultures with significantly weaker UAI scores.
15) Participants from cultures with a high PDI scores were more likely to receive funding from their families. Participants from cultures with a low PDI were more likely to receive a scholarship from their home country.

16) Participants from collectivist cultures primarily received their funding from their families, while participants from cultures with higher IDV scores, more individualist cultures, tended to fund their own studies.

Many of these major findings are interrelated and provide additional support to other findings. Figure 4.6.1 provides a visual representation of the interrelatedness of the major findings.

*Figure 4.6.1 The interrelatedness of the 16 major findings
Note: The dotted lines connecting the three involvement scores represent the development of the SIS.*
The funding options of international students were significantly related to age group categories, study levels and three of the four cultural dimension scores. The funding options also had a direct relationship to the SIS.

The PDI and IDV dimensions were statistically related to students’ out-of-class experiences. The out-of-class experience was statistically significantly related to the SIS and the living arrangements. In response to research question one, it is suggested that an indirect relationship exists between these two cultural dimensions and the SIS. It can therefore be concluded that Hofstede’s cultural dimension model is a valuable tool in explaining the similarities and differences of international students’ level of involvement as stated in proposition one.

Living arrangements were related to SIS and the quality of involvement. These findings were consistent with the finding that the quality of involvement is significantly related to the year born, given the tendency for younger international students to live in student accommodation facilities. These major findings were directly related to answering research question three. From these major findings, it is concluded that international students who lived in student residential communities were more involved than those who lived in other accommodation options. This resolves proposition three which suggests that international students who live in a student residential community are more socially involved than those who do not.

The SIS was also directly impacted upon by the gender variable, with females being less involved than males. Combined with the other variables that are both directly and indirectly related to the SIS and the results of the multiple regression model, research question two has been answered. Therefore proposition two is resolved as it is possible to predict international students’ level of involvement in out-of-class activities using their background information.
Finally, both the time spent travelling to and from work and the time spent working were statistically significantly related to international students’ consideration of withdrawing. In both cases, international students who had seriously considered withdrawing from their studies had spent more time travelling to work and working than those who had not considered withdrawing.

These major findings are discussed further in chapter five, along with the recommendations to improve international students’ experiences and their level of involvement in out-of-class activities while studying in Australian universities. These recommendations include:

- Implementing a cultural awareness program for all university employees;
- Implementing a three-stage cultural awareness program for international students;
- Implementing a mini-SIS survey to all international students in order to identify potential non-involvement;
- Investigating alternate funding arrangements to reduce financial pressures and increase levels of involvement of international students;
- Increasing the availability of affordable and supportive residential communities; and
- Implementing minimum standards for residential support.
5 Chapter Five – What it Means for Australian Universities

5.1 Introduction

This chapter provides a discussion on each of the major findings presented in chapter four. The relevance of these major findings will be discussed in the context of answering the three research questions that guided this project. From these discussions, practical recommendations for implementing changes within Australian universities will be made. This chapter will finish by suggesting opportunities for further research in this field.

5.2 Understanding Cultural Differences

In order to understand and improve international students’ level of involvement in out-of-class activities, research question one asked how cultural dimensions influence international student involvement. This research generated five major findings related to research question one. No statistically significant relationships were found between the four cultural dimensions and the SIS. Therefore the cultural dimensions did not add any significant value to the regression model developed to predict international student involvement in out-of-class activities. Despite this, all four cultural dimensions revealed statistically significant relationships between a range of international student background variables. Findings from three of these dimensions represented major findings and new contributions to the literature on improving international students’ involvement.
5.2.1 Major Finding – UAI is Linked with Funding Sources

Statistically significant differences were found between the mean UAI scores and participants’ funding sources. This analysis found that international students who received a scholarship from an Australian university had the highest mean UAI score. This suggests that these participants have a higher aversion to risk and uncertain situations. Scholarship funding represented the most secure option presented in this study. Participants with the lowest mean UAI score, indicating they are more accepting of risk and uncertain situations, funded their own studies through employment. Given that there is no guarantee that participants would be able to find jobs in Australia to fund their studies and living expenses, this represents the funding option with the highest amount of uncertainty or risk. While the UAI was not directly related to the SIS, this research found that the relationship between the funding sources and the SIS was consistent with the relationships between the UAI and funding. That is, international students who received funding through an Australian university scholarship had the lowest SIS while those who were funding themselves had the highest SIS.

This link between UAI, international student funding sources and the SIS represents a new contribution to the literature. Alternate funding options will be considered in subsection 5.3.10 with the goal of providing more certainty and security for international students, while encouraging higher levels of participation in out-of-class activities. While this indirect linkage of the UAI dimension and SIS does not conclusively answer research question one, the UAI does provide a useful tool in explaining students’ involvement in out-of-class activities as was stated in proposition one.
5.2.2 Major Finding – PDI is Linked with Funding Sources

The PDI dimension scores were found to be directly related to international students funding sources. These results found that participants from cultures with a large distance between those with power and those without were financially supported by their family. Participants from cultures with low PDI, where power is distributed more equally, were provided with scholarship opportunities from home and host countries. With Australia being a culture with a low power distance score, this finding demonstrates that scholarships at Australian universities are being provided to students from similar cultural backgrounds. In this context, scholarships to study in Australia are primarily not used to increase diversity and equality amongst other cultures. If they were used to increase diversity and equality, they would be awarded to more international students from countries with opposite cultural dimension scores to Australia’s to increase their participation rates. Additional research should be conducted to explore these links further.

5.2.3 Major Finding – PDI is Linked with Out-of-Class Experience

International students from cultures with low PDI scores were also found to have a better out-of-class experience than those from cultures with higher PDI scores. Australia is a society with a low PDI score, where equality, freedom and the opportunity to be heard are valued. This finding indicates that cultures with values of structure and hierarchy, as is the case with international students from high PDI cultures, did not rate their Australian experience as high as other cultures. This suggests the cultural distance between Australia and the main international student markets may be hindering the success and retention of this cohort. Recommendations one and two provide practical programs that universities can implement to assist in bridging this gap.
In a study of Chinese research and development businesses, Zhang and Begley (2011) found employees from high PDI cultures had higher team participation levels than those from cultures with a low PDI. By considering an example of a sports team, the linkage between PDI and structured activities becomes clear. In a sports team, each position has a specific role to play and brings a set of specialised skills to the team. When the team of specialists unite in pursuit of a common goal, they are able to perform better than each individual can perform on their own. In a sports team, each team member knows their role. The captain of the team (the one with the power and authority) provides the overall strategy and direction on the field. The other team members respect this structure and authority. This example of a functioning team is representative of a culture with a high PDI.

Now consider if the team was full of leaders (or conversely had no leader), that is, if there was equality amongst team members as is the case in Australian culture. The team would collectively have no set direction or strategy and therefore the team would not be successful. In an Australian university context, this finding demonstrates that international students from high PDI cultures are not provided with the structure and guidance that the majority of the international student population require in order to be successful and to have a positive student experience. Understanding the cultural distance between Australia and the main international student markets, as highlighted by Hofstede’s PDI, can help to explain the differences of out-of-class experiences of international students.

5.2.4 Major Finding – IDV is Linked with Funding Sources

The next major finding using Hofstede’s cultural dimensions was the significant differences in the mean IDV scores in relation to international student funding sources. It was found that participants from cultures with low IDV scores, that is, international
students from collectivist cultures, had their families fund their international studies. Participants who funded their own studies, either through employment or savings, had higher IDV scores. This demonstrates that members of individualist cultures tend to take care of themselves, while the extended family and the broader community are more important in collectivist societies. Obeng-Odoom (2012) commented that financial support from family is common for international students, especially for students from Asian cultures. Asian countries predominantly have a high collectivist score on the IDV dimension. Given a large proportion of the international student population in Australia are from Asian cultures, the IDV dimension provides a useful explanatory tool. This empirical finding represents a new contribution to the literature and should be considered in order to understand some of the stresses and pressures of international students. By considering international students IDV scores, Australian universities may be able to better understand the external pressures that some students are facing. This should not change the academic expectations universities place on international students from either high IDV cultures, who may need to work longer hours, or those from low IDV cultures, who may have additional family pressures or obligations on them. Instead, by having a greater awareness of international students where participants lay on the IDV dimension may provide university personnel with a greater appreciation of the challenges that international students face in Australia. This research provides a recommendation to help university employees' increase this awareness.

5.2.5 Major Finding – IDV is Linked with Out-of-Class Experience

The greater the cultural distance, the harder it was for participants to fit into the Australian culture. This led to a reduced international student experience. Australia is a highly individualistic culture where the focus is primarily on the individual or their immediate family. This research found that international students from individualistic
cultures, similar to Australia, rated their out-of-class experience as higher than did those from collectivist cultures. Sawir et al. (2008) used Hofstede’s individualism and collectivism dimension as a powerful tool in explaining cultural loneliness of international students in Australia. This research has used this dimension to explain some of the challenges that international students from different cultures face when studying in Australia. By acknowledging the cultural distances of international students studying in Australian universities, support staff can better appreciate the core values and driving factors that these students respond to. This greater understanding can be used to create an environment where international students feel more comfortable. Feeling a sense of belonging to the community has been linked to reducing student attrition (Krause 2005). Therefore, this finding suggests that by better understanding international students’ cultural dimensions, university support staff may be able to create an environment, events and activities where these students feel comfortable and connected in order to increase students’ out-of-class experience and reduce the level of attrition.

5.2.6 Recommendations of Cultural Awareness for Practitioners

This research has found that Hofstede’s (1980) cultural dimension model is a valuable tool in identifying and explaining the challenges that international students face while studying in Australia. This research offers two recommendations to create a greater awareness, for both university personnel and international students, of the similarities and differences between people of different cultural backgrounds using Hofstede’s model. By implementing these recommendations, this research posits that universities will improve the international students’ experience, increase levels of involvement and decrease international student attrition.
5.2.7 Recommendation One – Implement a Cultural Awareness Program for all University Employees

Firstly, a cultural awareness training session should be implemented as part of staff induction to a university. An interactive program should be developed for all university employees, especially those who teach, support or engage with international students. Using Hofstede’s four original cultural dimensions as a framework for the training, the facilitator would explain the concepts of each of the cultural dimensions, and then use examples of the impact on international students when studying in Australia, similar to those provided in subsection 2.3.7. By raising the awareness and creating a culture of understanding and appreciation of the cultural similarities and differences, universities would be able to better interact with and support international students. In the same light that workplace health and safety is the responsibility of all staff members, not just those who have specific workplace health and safety duties, understanding cultural differences should be the collective responsibility of all university employees. It is the collective responsibility of all university employees to ensure that international students feel welcome and wanted while they are studying, not just student service personnel.

5.2.8 Recommendation Two – Implement a Three-stage Cultural Awareness Program for International Students

Providing university employees with cultural awareness training addresses half of the cultural gap. The other half involves better preparing international students for the Australian culture. Similarly to the above, a cultural awareness program should be required for international students. Increased cultural awareness helps to facilitate engagement of students with different cultural backgrounds (Harper 2009). Using Hofstede’s original four cultural dimensions as the framework, this student-specific
program should include the following three components. Firstly, an online video and an information sheet should be provided to international students prior to leaving their home country. This information should explain some basic cultural norms and values of living in Australia. Building on this, upon arrival in Australia, a cultural workshop should explain the teaching and learning differences between Australia and other cultures using examples from Hofstede’s cultural dimensions. Finally, organised, structured, regular interaction sessions should be facilitated between domestic and international students. These conversational sessions could help to explain and address differences, concerns and experiences as they arise. This three-stage process will help to expedite the acculturation process, thereby bridging the cultural gap between international and domestic students.

5.2.9 Implications for Literature

Through the process of addressing the absence of literature linking international students’ cultural backgrounds with the theory of involvement and providing practical recommendations for universities to adopt, this research has identified implications for literature.

Firstly, a systematic approach is required to analyse the impact cultural differences between home and host countries have on students’ level of involvement, worldwide. This research has provided empirical data on international students in Australian universities; however, the major findings presented in this dissertation may not necessarily be generalised across different cultures. Consideration should be given to replicating this research in countries with different cultural backgrounds and countries with a different international student mix to ensure its transferability.

Secondly, an analysis of the management approach and effectiveness of international students’ orientation programs is required. All Australian universities undertake
international student orientation programs. Research is required on how these programs are tailored to suit the different cultural backgrounds of their international student cohorts. Attention should also be given to the effectiveness of different types of orientation programs in relation to decreasing international student attrition.

Thirdly, a comparison between cultural backgrounds, international students' reasons for studying abroad and their student experience should also be conducted. Such research could identify if a link exists between international students' migration intentions, psychological preparedness and their level of satisfaction with the host country. Understanding the core reason international students study in a foreign country may assist in providing the necessary support services required for them to succeed in Australian universities.

5.3 Understanding Student Involvement

The second research question asked if it was possible to predict international students' involvement in out-of-class activities using their background information. The analysis of the results highlighted eight major findings related to this research question. The multiple regression model also provided a significant insight into predicting the behaviours of international students. It could be argued that it is almost impossible to predict human behaviour with 100% accuracy. The predictive power of the multiple regression model can be considered the first step in discovering the reasons why some international students are more involved than others. This section will discuss the major findings of international students' background information and their SIS.
5.3.1 Major Finding – Age is Linked with Quality of Involvement

The analysis of the survey data found that the age of international students, represented by their year of birth, was statistically significantly related to participants’ quality of involvement scores. It was found that younger participants placed a higher value on quality activities than did their older counterparts. While participants’ ages were not directly related to the SIS, Tieu et al. (2010) found higher quality activities and activities that are more structured provide a greater student experience. This therefore suggests that participants’ ages, while not directly related, are an indicator of international students’ level of involvement in out-of-class activities.

5.3.2 Major Finding – Age and Study Level are Linked with Funding Sources

Age group categories and participants’ study levels were both interrelated with funding sources. Younger participants were more likely to be studying at an undergraduate level and were more likely to be being funded by their families. Older participants were more likely to be studying at a post-graduate level and were primarily funded by scholarships. By the very nature of post-graduate qualifications, students enrolled at this level are required to have already completed an undergraduate level degree. Therefore this progression requires an age differentiation. The linkage that this research has provided between age, study level and funding represents a new contribution to the literature. These findings help to demonstrate the connectedness young undergraduate-level students have with their families and the need for additional support services. This support may normally be provided by families; however, in the case with international students, as a result of the distance between home and host country, this support may not be as readily
available. Subsection 5.4.6 provides further discussion on how to increase this support to international students.

5.3.3 Major Finding – Funding is Linked with SIS

Further to the above major findings, this research found statistically significant differences between international students’ funding sources and their level of involvement. Participants who funded their own expenses had a higher SIS than any of the other funding options. International students who received scholarships had the lowest involvement score. Coates’ (2009) analysis of the AUSSE found there was no difference in student engagement between those whose studies were funded by the government (scholarships) and those who funded their own. The findings of this present research, supported by the interrelatedness of age groups, study levels, year born and the quality of involvement scores, are contrary to the previous findings. It is likely that, given international students only represented 9.9% of Coates’ (2009) study; the high proportion of domestic students may have distorted the outcome. As such, this research specifically into international students provides a new contribution to the literature regarding international student involvement. Research should pay particular attention to scholarship holders with regards to their out-of-class involvement and their level of satisfaction with their institution. While these students may be educationally successful, if they have a low level of student involvement, it is likely that they will rate their international student experience as lower, which may have a detrimental effect on the reputation of the institution.

5.3.4 Major Finding – Gender is Linked with SIS

Statistically significant differences were found to exist between the level of involvement in out-of-class activities and participants’ genders. This analysis found female international students were less involved than their male counterparts. The
predictive regression model found females negatively impacted the international SIS. This is consistent with the findings of Coates (2009) who found that younger females tend to be less involved (engaged). Mahoney, Cairns and Farmer (2003) also found that participation in extra-curricular activities was greater for young males than it was for young females. While this research is not claiming that females are not involved in out-of-class activities, the results suggest that universities should monitor the level of involvement of female international students closer than male students. By monitoring female international students, it may be easier to identify other issues that could lead to their poor student experience and possible withdrawals. The early detection of this may assist in the prevention of student attrition.

5.3.5 Major Finding – Living Arrangements are Linked with SIS

Participants’ SIS were also directly influenced by their living arrangements. For the purpose of research question two, it is sufficient to say that the type of residential environment an international student lives in does have a significant impact on their level of involvement in out-of-class activities. Given research question three relates specifically to the residential living environment, the discussion of this impact is provided in the following section.

5.3.6 Major Finding – Time Working and time Travelled to work are Linked with Withdrawal

The analysis of the data showed that the amount of time international students spent both travelling to and from work and the amount of time spent working were linked to considering withdrawal from their studies. In both of these analyses, it was found that those who had seriously considered withdrawing worked more hours per week and
spent more time travelling to and from work than those who had not considered withdrawing.

Two other significant findings worth discussion in this section were related to international students’ work. In what was initially considered a surprising result, the regression model found that the amount of time participants spent travelling to and from work per week positively influenced their level of involvement. This suggests that the more time an international student spends travelling to and from work, the more involved they are. Additionally, a very strong positive correlation was found to exist between the amount of time spent travelling to and from work and the amount of time spent working \( (r = 0.76, \ p < 0.01) \). While the amount of time working did not significantly add to the predictive power of the regression model, the conclusion could be drawn that there is a positive relationship between the amount of time spent working and the level of involvement.

While initially this would appear to be contradictory, the quality of involvement must be considered along with the quantity of involvement. The amount of time spent travelling to and from work was positively related to three of the four activities with a high level of involvement as well as two of the medium level of involvement activities. This tends to suggest that international students with other time commitments (such as travelling to and from work and working) would maximise the use of their limited time allocated to out-of-class activities by focusing on the higher quality activities. This result is consistent with Coates’ (2009) research into student engagement. He found that “people who worked off campus for many hours per week may take more deliberate steps to make contact with staff beyond formal teaching hours” (Coates 2009, p. 36). It is these deliberate steps to be more involved in high quality activities that have positively contributed to their overall level of involvement.
This finding should be met with caution. The *prima facie* reaction to this finding would be to encourage international students to work more hours and travel further to do so. However, as highlighted previously, statistically significant differences were found to exist between the amount of time participants spent both travelling to and from work and working, and whether they had seriously considered withdrawing from university. It was found that the greater the time in both of these activities, the higher the likelihood that they would consider withdrawing. This is the opposite result to the aim and objectives of this research. Careful balance is required to retain international students. This may include investigating the employment opportunities for international students within universities.

5.3.7 Major Finding – Out-of-Class Experience is Linked with SIS
The final major finding relevant to research question two is the statistically significant positive relationship that existed between the SIS and how international students rated their out-of-class experience. This finding demonstrates that the more involved international students were in quality activities, the better their experience was. This finding supports the Chaney’s (2013) recommendation to provide a positive student experience for international students.

5.3.8 Recommendations for Improving International Student Involvement
The interrelatedness between the major findings, the SIS and the other significant findings this research has presented, answers research question two and supports proposition two. It is confirmed that it is possible to predict international students’ involvement in out-of-class activities using a range of background information. While not all involvement behaviours can be predicted, the results of this research have
highlighted a tendency for non-involvement. It is the non-involved international students that need to be identified, then supported and encouraged to become involved in order to reduce the level of attrition within Australian universities.

5.3.9 Recommendation Three – Implement a mini Student Involvement Survey to Identify Potential Non-involvement

The background information collected from section one of the survey questionnaire provided important results in predicting and explaining the involvement behaviours of international students. It is therefore recommended that universities survey their international students on an annual basis using a modified version of section one of the survey used in this study. This mini-survey would take less than two minutes for students to complete. The data collected from this could be used by university international support personnel to identify international students who are at risk of being non-involved. The early detection of this may assist in providing additional support to these students. This in turn could assist in reducing student withdrawals and improving the international student experience.

5.3.10 Recommendation Four – Investigate Alternate Funding Arrangements for International Students

A review of the significant relationships and major findings of this research has highlighted links between background information and funding sources. Funding sources are also directly linked to the SIS. As such, it is necessary to explore alternate funding arrangements that may reduce the financial pressures on international students, while increasing the level of involvement in out-of-class activities. In this section, two possible suggestions are presented. Both of these options require extensive financial modelling to fully appreciate the impact and benefit they have on
the Australian economy. They are included in this dissertation to initiate further discussion.

Firstly, Australia could consider reducing the price differentiation between domestic and international students. This would not only reduce the financial burden incurred by international students, but would potentially increase the international student population in Australia. With over half of the economic contribution made up of international student living expenses while studying in Australian universities, a reduction in tuition fees could be offset by gains from their living expenses to generate positive economic contribution.

The second alternative solution for addressing international students funding challenges is to introduce an international student style higher education contribution scheme – loan program (HECS-HELP). As a refined version of the HECS-HELP that is currently available to domestic students, the ability to remain in Australia after graduating and repay tuition fees as a component of their tax would achieve two benefits. Firstly, it would remove the financial burden from international students while they are studying. This would allow for a better student experience and greater student retention. Secondly, requiring international students to remain in Australia for a set period to repay their HECS-HELP debt would enable Australia to retain the skilled workforce that it has just trained.

While there would be implications for the implementation of both of these funding options, which are beyond the scope of this research, future research should consider the impact that the current funding arrangements have on international student involvement and attrition.
5.3.11 Implications for Literature

The findings and recommendations derived from addressing research question two have created an awareness of two important aspects of international student involvement that should be investigated further.

Firstly, the adaptability of Australian universities in implementing a proactive approach to identifying and addressing non-involvement should be considered. Within large bureaucratic environments, consistency and standardisation are prevalent. In order to adequately address the growth in the international student attrition which has occurred over the past four years, Australian universities need to develop flexible processes that are tailored to the changing needs of a diverse cohort of students. The ability of universities to respond in a time-sensitive manner requires a critical analysis of university processes and policies.

Given the number of findings that were related to funding sources of international students, an economic cost-benefit analysis should be undertaken to identify the level of support that universities and governments can provide, while maintaining the sustainable growth of the sector. A macroeconomic approach to determining an appropriate international student fee structure and associated support services may provide an informed strategic direction for policy makers at all levels.

5.4 Providing Supportive Residential Living Environments

Research question three asked if international students living in student residential communities were more involved than those who lived in other accommodation. The major findings of this research project confirm that there is a significant difference between international students’ SIS and their residential living environments. Previous researchers have identified the positive benefits of living on campus in a student residential community; however, few, if any, have explored the impact of different
residential options on international students and their level of involvement in out-of-class activities.

5.4.1 Major Finding – Living Arrangements are Linked with SIS

International students living on campus in a residential hall or college environment were found to have the highest SIS. Participants who chose to live off campus by themselves had the lowest SIS out of the five residential environments. Given the SIS represents a combination of quantity of participation and the quality of the activities international students participated in, these results indicate that on-campus student residential communities provide more opportunities, structure and support for international students to make friends with both domestic and other international students. Andrade (2006) found that the more interactions international students have with domestic students, the greater their adjustment into the host culture.

Amole (2009) suggested one way of better integrating students was on a smaller scale first, before trying to integrate them into a larger community. This was referred to as the levels of the environment where satisfaction may vary between the bedroom, the floor level and the overall hall level (Amole 2009). In the case of living off campus with friends, international students may already be satisfied with the bedroom and the floor level environment (that is, their current rental property). Therefore, with the support and encouragement of this smaller community they are comfortable to integrate into a larger community or friendship network.
5.4.2 Major Finding – Living Arrangements are Linked with Quantity of Involvement

Further to the above major finding, similar results were found when comparing the residential environment with the quantity of involvement score. International students living on campus participated in more out-of-class activities than students living in the other accommodation options.

These findings corroborate the results of Coates and Edwards (2009) who compared participation in extra-curricular activities per week of both residential students and non-residential students. They too found that students living on-campus participated significantly more in these types of activities than those who lived off-campus.

Interestingly, the second highest ranked living arrangement for the quantity of involvement score was participants living off-campus in rental properties with friends. This research found that younger international students tended to live in residential communities. It is therefore believed that international students initially live in residential communities, form friendships and then in their later years move into rental properties with these friends. This highlights the importance of friendship formation, which by nature of the many communal facilities provided in a residential hall or college, are supported and encouraged in a university accommodation environment (Obeng-Odoom 2012, Paltridge, Mayson & Schapper 2010).

Expanding upon this, the type of residential living arrangements were also found to be related to the amount of interactions both amongst international students and between international and domestic students. This research has identified that international students living on campus in a residential community spent more time each week participating in social activities with both domestic and other international students. The living arrangement that ranked second in terms of the amount of participation per week in both of these activities was living off campus with friends.
Lawson (2013) found similar results when comparing international students’ satisfaction with making friends from both Australia and other countries, with participants’ types of accommodation. In both of these cases, international students living in on-campus accommodation were more satisfied with the opportunities to make friends than students in any other living arrangements.
5.4.3 Major Finding – Living Arrangements are Linked with Out-of-Class Experience

Another major finding of this research was the relationship between the residential environment and how participants rated their out-of-class experience. International students who lived in either of the two types of student residential communities rated their out-of-class experience as better than students living in any of the other residential options. Further to this, participants living off campus with their families rated their out-of-class experience as the lowest out of the five living arrangements. This is likely to be the result of the additional burdens and time pressures placed on students living with their families, in comparison to students in the other living arrangements.

No significant relationship was found to exist between the amount of time participants spent travelling to and from university per day and any of the involvement scores. Despite international students spending between zero hours to over two hours per day travelling, this did not have an impact on their level of involvement. This finding indicates that the location of the residential environment is not important. The type of the environment and the additional opportunities that residential communities offer provides the greatest involvement outcomes for international students.

5.4.4 Recommendations for Improving the Residential Environments for International Students

The findings of this research regarding the residential environment support research propositions two and three. The residential environment can be an essential part of identifying and facilitating international students’ involvement in out-of-class activities. Also, this research demonstrates that international students living in a student residential community are more involved and have a better student experience than
those that do not. Recommendations for improving the residential environment are provided below.

5.4.5 Recommendation Five – Increase the Supply of Affordable Student Communities

Australian universities should not dismiss the need to invest more resources into the provision of on-campus educationally and socially supportive accommodation communities as a funding issue alone. Despite the importance of the international student market, Australian universities do not have a tradition of providing sufficient student accommodation (Nyland, Forbes-Mewett & Härtel 2013). One institution in Australia with over 10,000 international students provides no university housing at all (Nyland, Forbes-Mewett & Härtel 2013). In comparison to this, some of the world’s most prestigious universities provide student accommodation for the vast majority of their domestic and international students. For example, Harvard University houses 97% of students on campus while Princeton University provides on-campus accommodation for 100% of their students (Seow-Eng, Petrova & Spieler 2013).

Parameswaran and Bowers (2014) note that a number of universities have outsourced their housing responsibilities and have engaged commercial providers using agreements such as build, own, operate and transfer (BOOT) schemes. One Australian university has chosen alternative funding arrangements to develop its stock of student accommodation offerings by going to the American bond market to raise capital for such projects (Sharpiro 2014). This option may not be available to all Australian universities; however, its ground-breaking tactic from an Australian university perspective shows that an innovative strategic approach is required, and is available, to address the undersupply of affordable student accommodation.
5.4.6 Recommendation Six – Implement Minimum Standards for Residential Support

This research has highlighted the importance and benefit that residential communities provide for international students. Some of these include increased support, more opportunities to create friendships and increased interactions with both domestic and international students. Coates (2009) found that the support provided by a university could be one of the greatest tools in establishing a positive student experience which would likely lead to increase student retention and graduation rates. The challenge for Australian universities is increasing the supply of affordable student housing while maintaining the current level of support and opportunities for the growing number of international students.

Supportive and involved residential communities help ensure that the transition of international students into the tertiary education sector in Australia, is smooth and successful. The focus of university housing needs to be on providing a range of support services to both domestic and international students. One group of residential colleges that successfully achieves this are members of International Houses Worldwide Incorporated (IHWW). IHWW members are required to meet a set of criteria that includes having a strong mix of both international and domestic student cohorts, providing specific cultural integration programs and having a strong focus on providing academic support. United by the shared mission “to provide students of different nationalities and diverse cultures with the opportunity to live and learn together in a community of mutual respect, understanding and international friendship” (IHWW 2015), members actively work on the integration between international and domestic students. This type of support and integration is reinforced by the responses to the qualitative questions asked in this research.

It is therefore recommended that minimum standards for international students’ residential support be implemented. It is noted that at the time of writing, the two peak
bodies for tertiary education accommodation providers in Australia, the Australasian Association of College and University Housing Officers (AACUHO) and University Colleges Australia (UCA), are collaborating on the development of a set of industry professional standards. While these standards are not being developed for supporting international students alone, their applicability to this cohort should be recognised. Government and university policy makers should support the implementation of these professional standards.

5.5 Future Research Opportunities

Consideration should be given to the cost of recruitment and the potential cost of attrition of international students. A comparison of these costs versus the life-cycle cost of a long-term physical asset, such as a student residential community, is needed. A critical analysis of the long-term capital expenditure policies of universities should be undertaken. Future research should consider how university senior executive recognise the benefit that residential communities provide to support and retain their student cohorts, especially international students, in order to provide strategic financial advice for Australian universities. With interest rates currently at record lows, the borrowing capacity of universities should also be investigated to increase the quantity of affordable and supportive student residential communities. As this research has demonstrated, residential halls and colleges provide the most support and opportunities for international students to succeed at university. University level policy makers need to consider the overall financial benefits gained as a result of the increased retention of students within a residential hall or college, and not solely the profit that the business makes.

One of the main findings of this research has been that the physical location of the residential environment is not as important as is the level of support that is offered
within the facility. Therefore, the impact of different styles of residential communities and the types of programs they offer should be investigated further. It is acknowledged that within the tertiary education student accommodation industry, a wide range of different operational models exist. Further research is required to identify the best models to support and retain international students studying in Australian universities.

This research project has provided a number of significant findings that help to identify factors that contribute to international students’ level of involvement in out-of-class activities. In doing so, this research can assist Australian universities in improving the experience of international students, increasing their satisfaction and reducing the attrition rates of this valuable cohort of students. However, due to the nature of the research project, limitations do exist which may impact the transferability of results.

As this research focused on the international student experience within Australian universities, it does not necessarily hold that the same factors exist in other countries. With the USA and the UK being two countries that attract the largest number of international students, it is recommended that this research be replicated in these countries to ensure validity across other international student destinations. Given the cultural dimensions of these leading countries are similar to Australia, it would also be valuable to replicate this study in countries with different cultural dimensions, such as Japan and China, to improve the understanding of the impact a host country’s cultural dimensions play on students’ involvement.

As previously acknowledged, Astin’s theory of student involvement is best measured by considering the input, environment and output. This suggests that to properly measure the involvement of international students, a survey should be conducted upon arrival (input) and again upon departure (output) in order to identify the impact of the environment. This type of longitudinal study was beyond the scope of this project, however, it should be considered for future research.
With the focus of this study being on international students studying in Australia, one of the previously acknowledged limitations is the large number of international students studying in Australian universities in other countries. It would therefore be valuable to investigate and compare the contributing background information and characteristics of international students studying in Australian universities in Australia to those studying in Australian universities in other countries.

Further research may also wish to consider the impact of the size of the institution, the campus size and the size of the international student cohort in relation to the size of the domestic student cohort on each campus. Further to this, a cost benefit analysis of retaining international students versus domestic students and the financial impact of student churn would provide an insight into the where to focus student service resources.

The next project this researcher will undertake will be an investigation of the impact that different types and models of student residential communities have on students’ involvement in out-of-class activities. This will include the extent to which shared facilities, such as kitchens and bathrooms, assist in facilitating and encouraging students’ involvement versus the level of involvement of students living in individual self-contained residences.
Appendices

Appendix A – Copy of Survey Questionnaire

International Student Involvement Questionnaire

About this survey and providing your informed consent to participate

Purpose of this Study: This research investigates what demographic information and social activities contribute to the international student experience and your out of class involvement while studying in Australian Universities. You are invited to participate in this study by filling out this questionnaire.

You have been invited via your University International Student Office. Your participation in this questionnaire will help to identify strategies for Australian Universities to improve the overall student experience of international students.

The questionnaire will take approximately 10 minutes to complete and is made up of three sections:
1. About you;
2. Your involvement in specific activities; and
3. Your opinions about your involvement.

Your answers and suggestions in this study will be strictly anonymous. You are not asked to enter your personal or contact details as part of the questionnaire. Your contact details have not been provided to the researcher by your International Student Office.

This is an unpaid survey and your participation is free and voluntary. You can say no if you don’t wish to participate in this study. You can withdraw from the study by not completing the remainder of the questionnaire. Partially completed questionnaires will be deleted. Once you have submitted a completed questionnaire, there is no way of identifying individual responses, therefore once submitted, your responses can not be withdrawn.

For further queries, please feel free to contact the Principal Research, Mr Dean Preddy, directly via email at dean.preddy@cdu.edu.au; or phone on +61 8 8946 6953. If you have any concerns about this project and wish to talk to someone who is not connected with it, you are invited to contact the Executive Officer of the Charles Darwin University Human Research Ethics Committee by email: cdu-ethics@cdu.edu.au, phone +61 8 8946 6498 or mail: Research Office, Charles Darwin University, Darwin NT 0909. The Executive Officer can pass on any concerns to appropriate officers within the University. If any of the questions in this questionnaire upset you, you may wish to contact one of the following free support services available in Australia. 1) Lifeline: phone 131114, or visit their website at www.lifeline.org.au or 2) Beyondblue: phone 1300 22 4636, or visit their website at www.beyondblue.org.au

Your time and participation in this project is appreciated.
**1. RESEARCH PARTICIPATION CONSENT FORM**

Please tick the boxes if you agree with these sentences. You will need to tick ALL the boxes to be able to proceed.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Tick</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am 18 years old or older.</td>
<td></td>
</tr>
<tr>
<td>I give my free and voluntary consent to participate in this unpaid online survey associated with this project.</td>
<td></td>
</tr>
<tr>
<td>I understand that my survey responses are anonymous (non-identifiable). My name, contact details and the name of my university are not required. As a result, none will appear in any public communication of results arising from this research.</td>
<td></td>
</tr>
<tr>
<td>I understand that the aggregate level findings of this research will be presented to Australian Universities with recommendations for improving the international student experience. These findings may also be prepared for academic articles and conference presentations.</td>
<td></td>
</tr>
<tr>
<td>I can withdraw from this study, without any consequences, by not completing the survey. Incomplete questionnaires will be deleted.</td>
<td></td>
</tr>
<tr>
<td>I understand that my anonymous (non-identifiable) responses can not be withdrawn once submitted and they will be securely stored for approximately 5 years.</td>
<td></td>
</tr>
<tr>
<td>I understand that access to the survey data is restricted to the principal researcher and information collected from me does not link to my name or my other contact / identifying details.</td>
<td></td>
</tr>
</tbody>
</table>
International Student Involvement Questionnaire

Section I - About You

There are 13 questions in this section that seek basic information about you. Please respond to each question. This section should take about 3 minutes of your time.

**2. Please indicate the year you were born. E.G. 1986**

<table>
<thead>
<tr>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

**3. Please indicate your gender.**

- [ ] Female
- [ ] Male

**4. Before you came to Australia to study, what was your Permanent Place of Residence? That is, where is your HOME Country?**

- [ ] Mainland China
- [ ] Singapore
- [ ] Malaysia
- [ ] Viet Nam
- [ ] Hong Kong
- [ ] India
- [ ] Indonesia
- [ ] Korea, Republic of south
- [ ] United States of America
- [ ] If Other (please enter Home Country below)

*Please enter Home Country below*

**5. Please indicate how long you have been studying in Australia for.**

<table>
<thead>
<tr>
<th>Years</th>
<th>Months</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**6. Please indicate how long you have remaining until you finish your current studies. That is, how long until you graduate?**

<table>
<thead>
<tr>
<th>Years</th>
<th>Months</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**7. Please select which State or Territory you are currently studying in. If you are studying in the Northern Territory, Australian Capital Territory or Tasmania, please select Other.**

<table>
<thead>
<tr>
<th>State or Territory</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

**8. Please select your current study level.**

<table>
<thead>
<tr>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>
9. Please select a response that best represents your current living arrangements.
   - On Campus in a Residential Hall or College
   - Off Campus in a student accommodation facility
   - Off Campus by yourself
   - Off Campus in a rental property with friends
   - Off Campus with family or relatives

10. Please indicate the approximate amount of time, in MINUTES, spent TRAVELING to and from UNIVERSITY per DAY during semester 1, 2014.
   - 0 - 30 minutes
   - 31 - 60 minutes
   - 61 - 90 minutes
   - 91 - 120 minutes
   - 121 + minutes

11. Please indicate the approximate amount of time, in HOURS, spent TRAVELING to and from paid EMPLOYMENT per WEEK during semester 1, 2014. If you didn't travel to and from employment, please enter 0.

12. Please indicate the approximate amount of time, in HOURS, spent WORKING in paid employment per WEEK during semester 1, 2014. If you didn't work, please enter 0.

13. Please select the answer that BEST describes your MAIN source of funding while at University.
   - Self - through current employment
   - Self - through savings
   - Family
   - Scholarship from Australian University
   - Scholarship from Home Country/University
   - Other (please specify)
14. Have you, or have you seriously considered withdrawing from your studies or transferring to another university?

- Yes
- No

If Yes, please indicate your main reason for this.
**International Student Involvement Questionnaire**

**Section II - Your Involvement in Specific Activities**

There is 1 question in this section that seeks information on the amount of time you spent participating in specific activities during semester 1, 2014. Please respond to all parts of the question. This section should take about 4 minutes of your time.

*15. Please indicate the approximate amount of time, in HOURS, spent participating in each of the following activities per WEEK during semester 1, 2014.*

<table>
<thead>
<tr>
<th>Activity</th>
<th>0</th>
<th>1-5</th>
<th>6-10</th>
<th>11-15</th>
<th>16-20</th>
<th>21+</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Volunteering for a community / charity organisation including a religious or faith based organisation</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>b) Participating in a sporting club</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>c) Exercising by yourself</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>d) Exercising as a part of a group or team</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>e) Participating in a cultural group or association</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>f) Participating in organised arts / crafts groups or associations</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>g) Participating in organised on-campus social activities (excluding drinking at a bar)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>h) Participating in social / informal off campus activities (including drinking at a bar)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>i) Undertaking additional studies to benefit your academic results (this may include informal tutorials, attending professional presentations, non-prescribed readings)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>j) Participating in organised activities / interactions with other international students</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>k) Participating in organised activities / interactions with Australian students</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
International Student Involvement Questionnaire

Section III - Your Opinions About Your Involvement

There are 4 questions in this section that seek information about one activity. Please respond to all part of each of the questions in this section. This section should take about 3 minutes of your time.

*16. From the activities listed in section two, please select one activity that you consider to be the MOST IMPORTANT part of your student experience.

*17. With this activity in mind, what is your level of agreement or disagreement to the following statements?

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>This activity is an important part of how I define myself.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This activity is very important to me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I take participation in this activity very seriously.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I care about this activity.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participating in this activity makes me happy.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel that this activity challenges me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This activity provides me with direction in my life.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participation in this activity is very meaningful to me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I enjoy participating in this activity.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My participation in this activity is a high priority in my life.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I believe that I will participate in this activity throughout my life.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel a sense of connection to others who also participate in this activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I easily become absorbed when engaging in this activity.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No one has to push me to participate in this activity.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel a sense of belonging from participating in this activity.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I enjoy talking about this activity with others.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel pride when I achieve in this activity.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel competent when participating in this activity.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*18. How would you describe your out of class experience in Australia so far?

<table>
<thead>
<tr>
<th>Quality</th>
<th>Very Poor</th>
<th>Poor</th>
<th>Neutral</th>
<th>Good</th>
<th>Very Good</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
19. You are almost finished!
How could Australian Universities improve the out of class experience for future international students?
Thank you for taking the time to complete this questionnaire.
Appendix B – Copy of Introductory Letter

Dear (First name)

I am Mr Dean Preddy from the School of Business, Charles Darwin University. I am conducting research to investigate what activities contribute to, or impact on, the international student experience and their out of class involvement while studying in Australian universities. I request your support in communicating my project with your international student community.

Project Summary:
Survey Method: Online via Survey Monkey
Anticipated Survey dates: Open 14 July, Close 17 August
Completion Time: 10 minutes

I would appreciate it if this was communicated via email, in a regular newsletter and via your social media platform. I will provide a poster for this project which can be emailed or distributed on noticeboards. This project will be submitted for the CDU Human Research Ethics Committees approval by 10 June, 2014. As such, I would welcome confirmation of your ‘In Principle’ support in communicating this survey by Friday 6 June.

If you require additional information about this project, please feel free to contact me directly via email on dean.preddy@cdu.edu.au; via phone on 08 8946 6953, or on my mobile 0437 166 602.

Yours sincerely
Dean Preddy
Charles Darwin University
Appendix C – Copy of Questionnaire Poster

International Students

HAVE
YOUR
SAY!

UNIVERSITY
experience
education
FRIENDSHIP
culture

FUN participate involvement accommodation

W: surveymonkey.com/s/IntStudentInvolvement
Appendix D – Explanation of the Regression Equation

A simple linear model or bivariate model (Stolzenberg 2004) considers the impact of one independent variable on the dependent variable.

The equation for a simple linear equation is:

\[ y = \beta_0 + \beta_1 x_i \]

This represents the equation for a straight line, where \( y \) is the dependent variable, \( \beta_0 \) represents the \( y \) intercept, where \( y \) equals zero and \( \beta_1 \) represents the slope of the relationship between the dependent variable and \( x \) the independent variable (Cottrell 2011). It is unlikely however that all data from a sample data set fits directly on a single linear line; therefore, the regression analysis identifies the one line that best represents all measured data (Sykes 1993). Since this line does not specifically represent the exact data, the regression equation line is represented using a circumflex, or hat (Stolzenberg 2004), over the \( y \) as indicated here: \( \hat{y} \). This shows that it is a predicted value, not a true value.

The equation for a simple linear regression therefore includes an amount of error or ‘noise’ (Sykes 1993) which explains the sum of the variation not explained by the regression line (Weiss 2012). This is known as the error sum of squares (SSE).

Given this dissertation is looking at the relationship between the dependent variable and a number of different independent variables, multiple regression analyses was selected. According to Sykes (1993, p. 8) multiple regression is a “technique that allows additional factors to enter the analysis separately so that the effect of each can be estimated”. This differs from the simple regression equation which only considers the relationship between one independent variable and one dependent variable.

The indicative equation for the multiple regression to be used in this project is:

\[ y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \ldots + \beta_n x_n + \epsilon \]
Where 'n' represents the number of independent variables and \( \mathcal{E} \) represents the error (Simon 2003).

In the multiple regression equations, \( \beta \) is the coefficient of the variable (Sykes 1993). This describes the change in \( \gamma \) that is associated with a unit change in \( x \) (Hutcheson 2011).

In determining how well the multiple regression equation fits the data set, a number of additional tools can be used. The total sum of squares (SST) measures the total sum of the variation in the observed values of the independent variables from the mean of those variables. The equation for SST is therefore:

\[
SST = \sum (y_i - \bar{y})^2
\]

While the SST explains some of the difference between the observed values and the regression line, it does not explain all. The remainder of the variance is referred to as the regression sum of squares (SSR) (Stolzenberg 2004; Weiss 2012). This measures the sum of the squared value of the difference between the predicted \( \gamma \) value (\( \hat{\gamma} \)) and the mean value of \( \gamma \) (\( \bar{\gamma} \)). The equation for SSR is therefore:

\[
SSR = \sum (\hat{y}_i - \bar{y})^2
\]

From these two equations, the coefficient of determination can be calculated. For a multiple regression equation, this is commonly referred to as the coefficient of multiple determination (Lewis-Beck 2004). The coefficient of determination is the descriptive measure of usefulness of the regression equation in making predictions. The coefficient of determination is represented by \( r^2 \). The \( r^2 \) value is the regression portion as a share of the total. Therefore the equation for the coefficient of multiple determination is:

\[
r^2 = \frac{SSR}{SST}
\]
Multiple regression analysis is the primary tool used to analyse the relationship between the dependent variable, student involvement and the independent variables. Calculation including the total sum of squares, regression sum of squares and the $r^2$ coefficient of multiple determination is used to validate the multiple regression equation of this project.

Simon (2003, p. 4) notes that “the most valuable (and correct) use of regression is in making predictions.” By knowing the relationship between the dependent and independent variables, a prediction can be made of one, based on data for the other (Brace, Kemp & Snelgar 2012). This section will identify factors that indicate the strength and validity of the prediction capabilities of a multiple regression analysis.

In the previous section, the concept of $r^2$ coefficient of multiple determination was introduced. The $r^2$ calculation will range from 0 to 1 (Weiss 2012). This figure identifies the usefulness in the prediction calculation between the variables. While it is unlikely that the calculation will reach the extremes of this range (Lewis-Beck 2004) the closer the calculation is to 1, the more useful the equation is in making a prediction. For example, an $r^2$ value of 0.756 explains 75.6% of the variance in the equation. On the opposite side, the closer the $r^2$ calculation is to 0, the less useful the equation is at making predictions (Cottrell 2011; Weiss 2012). This is often referred to as a ‘goodness of fit’ of the model (Lewis-Beck 2004).

Another test that will be calculated using the SPSS statistics software package is the null hypothesis test for the regression line equation. This test starts by stating that there is no relationship between the independent variables and the dependent variable. If the null hypothesis is true, the relationship would equal 0 and the null hypothesis is accepted. If the regression equation does indicate a relationship between the dependent and independent variables, the relationship would not equal 0; therefore, the null hypothesis would be rejected. For this project with multiple
independent variables, the first null hypothesis test would state that there is no relationship between any of the variables in the equation. This would be represented as the following:

\[ H_0 : \beta_1 = \beta_2 \ldots = \beta_n = 0 \]

The alternate hypothesis to state that there is a relationship between at least one of the independent variables and the dependent variable is displayed as:

\[ H_1 : \text{At least one } \beta_i \neq 0 \]

Once this has been determined, the individual variables will be tested in a similar manner to identify if they contribute to the predictive power of the overall equation. This process may remove some of the independent variables from the equation.

The final test that was used in this study determined the inferential power of this model on the total population. As described previously in the sampling section, data used in this project aimed to be representative of the total population. The t-test helps to explain if the mean differences between the sample variables are reflective of the predicted mean differences of the population variables (Shapiro 2008).

Once these tests are completed, it is expected that a refined equation will be presented which will be useful in predicting the level of international student involvement in out-of-class activities for the sample data using students’ background information. It will also be a useful tool that is relevant to the total international student population.
7 References


AEI – see Australian Education International.


Amole, D 2009, 'Residential satisfaction and levels of environment in students' residences', *Environment and Behavior*, vol. 41, no. 6, pp. 866-879, viewed 12 January 2015, via Sage online.


Chaney report – see International Education Advisory Council.


DET – see Department of Education and Training.


DFAT – see Department of Foreign Affairs and Trade.

DIBP – see Department of Immigration and Border Protection.
DIICCSRTE – see Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education.


Hare, J 2015, 'Foreign students bring in $16bn’ The Australian, February 4, p. 3.


IHWW – see International Houses Worldwide.

IIE – see Institute of International Education.


Mahoney, JL, Cairns, BD & Farmer, TW 2003, 'Promoting interpersonal competence and educational success through extra-curricular activity participation', *Journal of Educational Psychology*, vol. 95, no. 2, p. 409-418, viewed 22 April 2014,


McEwan, B & Guerrero, LK 2010, ‘Freshmen engagement through communication: Predicting friendship formation strategies and perceived availability of network resources from communication skills’, *Communication Studies*, vol. 61, no. 4, pp. 445-463, viewed 30 March 2013, via aph (EBSCOhost).


OECD – see Organisation for Economic Co-operation and Development.

O'Keefe, P 2013. 'A sense of belonging: Improving student retention', *College Student Journal*, vol. 47, no. 4, pp. 605-613, viewed 18 March 2015, via Gale online.


Rienties, B & Tempelaar, D 2013, 'The role of cultural dimensions of international and Dutch students on academic and social integration and academic performance in the


Schaufeli, WB, Martínez, IM, Pinto, AM, Salanova, M & Bakker, AB 2002, 'Burnout and engagement in university students a cross-national study', *Journal of Cross-Cultural Psychology*, vol. 33, no. 5, pp. 464-481, viewed 7 October 2013, via Sage journals online.


SPSS – see Statistical Package for Social Science.


Terenzini, PT, Pascarella, ET & Blimling, GS 1996, ‘Students’ out-of-class experiences and their influence on learning and cognitive development: A literature review’, *Journal of College Student Development*, vol. 37, no. 2, pp. 149-162, viewed 13 October 2013, 2013,


Trowler, V 2010, 'Student engagement literature review', *The Higher Education Academy*, November 2010, viewed 10 September 2013,


Weiss, NA 2012, Elementary statistics, 8th edn, Addison-Wesley, Boston.

Wilcox, PS-GM 2005, "It was nothing to do with the university, it was just the people": The role of social support in the first-year experience of higher education', Studies in


Zhang, Y & Begley, TM 2011, 'Power distance and its moderating impact on empowerment and team participation', The International Journal of Human Resource

