

A Study of Real Estate Student Satisfaction in Australia

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Abstract

The paper aims to establish an overall review of satisfaction of real estate students in Australia. The Course Experience Questionnaire within the Australian Graduate Survey is used for this paper. Dimensionality reduction was used to prepare the information on the real estate courses used in this paper. Exploratory factor analysis was used to produce the list of student satisfaction factors. Six student satisfaction factors were identified, including *Quality of staff and course* (F1), *Student learning environment* (F2), *Personal development of students* (F3), *Student services* (F4), *Appropriate assessment* (F5) and *Clear expectation* (F6). Multiple and hierarchical regression analysis are used to identify the level of influence of demographic variables on each of the student satisfaction factors and the level of statistical significant prediction of individual student satisfaction factors on overall student satisfaction. Quality of staff and course is the most important predictor of real estate student satisfaction. Age is reviewed as the only demographic factor which is statically significant but has a negative impact on real estate student satisfaction. This paper identified some important elements for enhancing student satisfaction which universities can take on board for developing a strategy to enhance student satisfaction.

Keywords: Australia, Course Experience Questionnaire (CEQ), Real Estate, Student Satisfaction

Introduction

Student satisfaction is important for universities for different reasons, such as quality assurance, student retention and reducing attrition, enhancement of university's reputation and as a result, influencing student numbers (Arambewela and Hall, 2009; Douglas *et al.*, 2008; Kara and DeShields, 2004; O'Driscoll, 2012; Thomas and Galambos, 2004). Student satisfaction is also an internationally-concerned topic. There have been various studies on student satisfaction in different countries such as Australia, the UK, Republic of Ireland, Italy and Romania. These studies focused on different subjects such as property education and hotel/ hospital management etc. (see Douglas *et al.* 2006; Munteanu *et al.* 2010; Newell, 2013; O'Driscoll, 2012; Petruzzellis *et al.*, 2006; Rogers and Smith, 2011). Previous research also identified demographic backgrounds, such as age, gender, mode of study and nationality, as having impacts on student satisfaction (Arambewela and Hall, 2009; Douglas *et al.*, 2006; O'Driscoll, 2012; Rogers and Smith, 2011).

In Australia, student satisfaction has become central to recruitment and retention strategies in the higher education sector (Bradley *et al.*, 2008). The final report of the Review of Australian Higher Education (Bradley *et al.*, 2008) has made a recommendation, which is funding to

universities should be driven by student demand. In other words, the funding mechanism in the higher education sector has shifted from the system of block funding for an allocated number of full-time equivalent students to linking to the performance of student recruitment and retention. In other words, development of successful strategies in both attracting and retaining students has become crucial for universities on securing government funding.

A number of countries have conducted student satisfaction surveys nationally, for example, the Course Experience Questionnaire (CEQ) in Australia and the National Student Survey (NSS) in the UK. Lamond *et al.* (2013) also conducted a comparison analysis on the student satisfaction in three main areas including teaching quality, quality of feedback, and student support and advice among different built environment disciplines, including real estate, in the UK. However, there is yet to have been any research focusing on an overall review of student satisfaction for real estate courses in Australia at a national level.

The aim of this paper is to conduct an overall review of student satisfaction of real estate students in Australia. It will do this by addressing the following research questions:

- What are the factors affecting satisfaction of real estate students?
- What factor or factors contribute most on explaining and predicting real estate student satisfaction?
- Are there any differences in the factors which predict real estate student satisfaction, based on different demographic factors including mode of study, gender, country of origin and age?

This paper consists of four sections. The first section is the literature review. The second section is to discuss the research method while the third section is to review the result and discussions. The final section is the conclusion.

Literature Review

Dimension and Measurement of Student Satisfaction

One of the most important measures for student satisfaction is teaching performance, including educational activities and the course materials employed (Munteanu *et al.*, 2010; Sanderson, 1995). Petruzzellis *et al.*'s (2006) identified that despite student services and support being important elements for student satisfaction, how well the courses are taught is still the key determinant for student satisfaction. Teaching performance is also important for overseas students. Arambewela and Hall's (2009) research highlighted the fact that overseas students who study in Australia rated teaching performance and the role of teaching staff as having the biggest influence in terms of generating student satisfaction. In this paper, they identified that academic staff are not only the main point of contact for academic issues, but also for non-academic issues too.

The physical environment and student services are other key factors which influence student satisfaction. Douglas *et al.* (2006) note that the physical environment, layout, lighting, classrooms, the appearance of buildings and grounds and the overall cleanliness significantly contributed to how students viewed the quality of service provided. Petruzzellis *et al.* (2006) shared Douglas *et al.*'s (2006) view. They identified nineteen variables which are important to student satisfaction under four headings. The four headings are facility (such as lecture halls,

laboratories, equipment, libraries, refectories, accommodation and internet access), students services and support (such as language courses, scholarships, educational offerings, examination booking, administrative services and counselling), teaching services (such as contact with teachers, tutoring, internship and placement) and student life (such as leisure and sports facilities). Library is the variable which received divided opinion from high performing and low-performing students. Library facilities are more important for the high-performing students whilst the low-performing students are more concerned with examination evaluation and the opportunity to communicate with academic staff when they need to (Munteanu *et al.*, 2010).

Price *et al.*'s (2003) study surveyed a number of UK universities over a 2-year period of time to determine the reasons for their choice of courses, eight reasons were identified. These are whether the university has the right course, availability of computers, quality of library facilities, good teaching reputation, availability of quiet areas and availability of areas for self-study. Although Price *et al.* (2003) classified these eight areas under the category of a university's facilities, these also can be classified within the scope of categories such as teaching quality, student services and support, study environment and equipment.

Assessment and feedback is another important factor underpinning student satisfaction. Smyth *et al.* (2012) identified that student learning experience is enhanced when the expectation of assessment is stated clearly and prompt feedback is provided. Previous research further established that students would become anxious and frustrated when feedback was delayed (Aspden and Helm, 2004; Welker and Berardino, 2005). Timely and informative feedback is particularly important to older students as they commonly see feedback as a self-evaluation tool (Rogers, 1992).

Staff enthusiasm and its impact on creating a supported learning environment is another important factor for student satisfaction. Rogers and Smith (2011) identified the best joint predictors of overall satisfaction as the academics' genuine interest in the individual's learning needs and progress, development of understanding of concepts and principles, and clear expectation of the course. Arambewela and Hall (2009) and Keeley *et al.* (2006) suggested that a staff's genuine interest in a student's work is shown by having an encouraging and supportive attitude, praising good work and providing additional assistance to students who need it. Ramsden's (1991) research cited several studies that acknowledged the importance of empathy. Teven and McCroskey (1996) shared this view. They found that courses were much more likely to be evaluated positively if they were delivered by lecturers who were perceived as caring. Rogers and Smith (2011) concluded that the best joint predictors of overall satisfaction for student satisfaction in health science discipline in the University of South Australia were staff's genuine interest in students' learning, understanding of concepts and principles, clear idea of expectation, staff interest in teaching and reasonable workload.

Other important factors affecting student satisfaction are class size and the opportunity to take optional modules. Student satisfaction decreases when class sizes have increased and when students are only allowed to take compulsory modules rather than optional ones (Coles, 2002; Douglas *et al.*, 2006). The availability of contact with a tutor also has a strong influence on student's evaluation of service quality and as highlighted by the male Saudi Arabian students studying at the King Fahd University of Petroleum and Minerals (Sohail and Shaikh, 2004). Personal behaviour of academic staff is another important factor for student satisfaction and it

is particularly important in Eastern European countries, such as Romania (Munteanu *et al.*, 2010).

Petruzzellis *et al.* (2006) concluded that universities have to concentrate their efforts on the improvement of both teaching quality and non-teaching services in order to enhance overall student satisfaction, and that doing this would also help to foster student recruitment in a competitive environment. The review of the previous literature supported the conclusion that it can conclude the key factors affecting student satisfaction are: teaching performance, physical environment, student services, university facilities, staff enthusiasm and the creation of learning environment.

Demographic Background Affecting Student Satisfaction

Age is a demographic factor affecting student satisfaction (Rogers, 1992; Rogers and Smith, 2011). Rogers and Smith (2011) conducted a survey among the students studying in the health sciences division at the University of South Australia. One of the findings is that age has a statistically significant impact on overall student satisfaction. The older students, aged 36-45 years, are least satisfied. This finding reinforced Rogers's (1992) study which identified that providing timely and informative feedback enhanced older students' satisfaction of their courses.

The mode of study also has an impact on student's satisfaction. Full-time students ranked the importance of IT services in third position, considerably higher than part-time students who ranked its importance in tenth position (Douglas *et al.*, 2006). It is because part-time students usually study off-campus and are more likely to use IT facilities at home and/ or at work. In contrast, part-time students ranked virtual learning environment, such as Blackboard, in a higher position of seventh place as compared to tenth place rated by full-time students. This may be because part-time students are more likely to spend more time off-campus as compared to full-time students, therefore, their dependence on using systems such as Blackboard to support their study is higher (Douglas *et al.*, 2006).

Overseas students also expressed different preferences with regard to the factors contributing to their satisfaction (Arambewela and Hall, 2009; O'Driscoll, 2012). Safety, economic considerations (such as the availability of casual jobs, cost of living and opportunities for migration), life-style, public image and prestige of the university, and standard of accommodation, are more important to international students as compared to local students. International students also are more concerned about the issues directly related to their study, such as receiving quality feedback from lecturers, and being able to communicate with lecturers when necessary, a high standard of teaching using up-to-date technology, and the availability of modern facilities (Arambewela and Hall, 2009). O'Driscoll (2012) identified that there is a statistical significance between EU and non-EU students on academic and welfare support. Non-EU students are more likely to be dissatisfied with the placement element of their course. One of the explanations for this is that non-EU students paid substantially higher fees as compared to the EU students and therefore they may feel they are entitled to a higher level of service relating to identifying placement opportunities and support on gaining placement.

O'Driscoll's (2012) study found some differences between male and female hotel and hospitality management students. Male students have a lower level of satisfaction than the

female students on the placement support elements. On the other hand, female students identified emotional and welfare support services offered by the college as having a higher impact on their student satisfaction. Rogers and Smith's study (2011) reinforced the impact of demographic factors on students' satisfaction. They identified that international students who study on-campus on a full-time basis are more likely to be satisfied with their courses, while mixed study-mode students are the least satisfied, despite none of these findings were significantly associated with overall satisfaction from a statistical point of view.

Research on Student Satisfaction in Australia

Arambewela and Hall's (2009) research focused on studying the factors affecting overseas students' satisfaction in Australia. Their conclusion is that overseas students have special interest in the factors affecting student satisfaction and they have a higher concern on teaching performance. This study has a narrower focus and only concentrates on overseas students studying a Marketing Degree within universities in the Victoria States.

Newell (2013) investigated the satisfaction of property and business students at the University of Western Sydney (UWS) in Australia over a six-year period from 2005 to 2011. His research finding stated that property students had a consistently higher level of satisfaction than the other business disciplines such as Economics and Finance, Accounting, Law, Marketing and Management, across the thirteen student satisfaction factors which were considered in the study and over the six years period of time. The area which property students have lower levels of satisfaction is feedback on assessment while the property students demonstrate a high level of satisfaction on teaching quality.

Poon and Brownlow (2015) have completed a recent study on student satisfaction of real estate students in Australia. The data used in this paper has been collected from the Course Experience Questionnaire (CEQ) within the Australian Graduate Survey (AGS). Descriptive analysis, such as mean, mode, median, standard deviation and statistical analysis, such as Pearson r, Cronbach's alpha coefficient, Kruskal-Wallis and Mann-Whitney, were used to analyse student satisfaction variables and identify the extent to which demographic factors influenced overall student satisfaction. Their findings showed that real estate students in Australia have a higher level of satisfaction than the built environment students overall, especially on the areas including appropriate assessment and learning community. Demographic factors, such as age and mode of study have an impact on the overall satisfaction level of real estate students,

Poon and Brownlow's (2015) study has identified the student satisfaction variables stated in CEQ which have the highest correlation relationship with the overall student satisfaction. However, Poon and Brownlow's (2015) study did not categorise the student satisfaction variables into groups of factors, which would provide more useful information for universities to develop strategies on enhancing student satisfaction. Furthermore Poon and Brownlow's (2015) analysis identifying the impact of demographic factors on satisfaction variables is independent from the study on identifying the important student satisfaction variables. In other words, there is no connection between the identification of the student satisfaction variables and the demographic factors which affect student satisfaction.

Research Method

Data Source and Preparation of Dataset

The data used in this paper has been collated from the Course Experience Questionnaire (CEQ) within the Australian Graduate Survey (AGS) (AGS, 2015). AGS is a national census of newly-qualified higher education graduates that has been in operation since 1972. The survey is conducted approximately four months after the students have completed the requirements for their awards. The AGS sends the survey questionnaire to new graduates from all Australian universities, as well as a number of higher education institutes and colleges. The data used in this paper dates from 2010 to 2012. The CEQ questions have been changed from 2009 to 2010; therefore, the questions are not compatible and cannot combine with the 2010 onwards data in one dataset. The data for 2013 and 2014 were not made available to the author therefore they cannot be added to this study.

Dimensionality reduction was used to prepare the information on the real estate courses as identified in the AGS document, in order to present a simplified classification of the courses used in this paper. Dimensionality reduction is a tool which enables all of the columns in a data field to be replaced by a smaller number of columns or even one column with a unique value for every row (Field, 2013).

There is a comprehensive list of courses and relevant course codes in the AGS data (AGS, 2015). In addition, students can also enter information on up to four course majors in text boxes when they complete the Course Experience Questionnaire. The real estate students identified in this paper includes students who study real estate related subjects, such as Real Estate (course code 080503) and Valuation (089903). In addition, the author also analysed the information contained in the columns, which states the students' course majors (up to four majors can be identified) and identified the students who studied real estate-related courses and grouped them together. If the student has indicated that they studied more than one course major, the author grouped them according to information based on their Course Major One.

Responses from 1258 real estate graduates were analysed. The distributions of the students by different classifications are:

- By Mode of Study: 11.92% study by distance learning, 77.91% study on-campus and 10.17% study at mixed mode
- By Gender: 67.33% are Male and 32.67% are Female
- By Country of Origin: 90.86% are from Australia and 9.14% are from Overseas
- By Age: 52.54% are below 24 years old and 47.46% are 24 years old or below

There were 48 student satisfaction questions asked in CEQ. Nine student satisfaction questions were not included in the factor analysis of this paper due to the low number of responses, four have no responses at all and five had only two responses. Subsequently, 39 student satisfaction questions were analysed in this paper, these aim to measure student satisfaction levels across a range of area such as teaching qualities, appropriate workload and student support etc. All were measured on a five point Likert scale (1 = strongly disagree to 5 = strongly agree). Sample questions include:

- The staff put a lot of time into commenting on my work
- I was generally given enough time to understand the things I had to learn
- Relevant learning resources were accessible when I needed them

Please see Table 2 for the detailed information of the 39 student satisfaction questions analysed in this paper. These questions were asked in a Course Evaluation Questionnaire and this paper has reported the exact wording of these questions.

These questions serve as potential independent variables for multivariate analyses and were derived from a combination of institutional requirements and the service quality literature. Overall student satisfaction serves as the primary dependent variable and is measured with one global estimate: 'Overall, I was satisfied with the quality of this course'. The responses abstracted from CEQ are coded and input into SPSS version 22 for all subsequent analyses.

The internal reliability of the instrument returned a Cronbach Alpha of 0.916 which is above the standard accepted threshold of 0.7 (Nunnally and Bernstein, 1994).

Data Analysis

Factor Analysis

Exploratory factor analysis was applied to identify elements that explain and contribute to student's satisfaction with the course they studied and overall student experience in university. Factor analysis is a data reduction technique that group items into clusters or factors which have similar psychometric characteristics (Field, 2013). The factor analysis method is a multivariate technique that explores the structure of the interrelationships among a large set of observable measures and creates a set of highly correlated factors known as factors (Fabrigar *et al.*, 1999; Hair *et al.*, 2006). These factors represented the latent dimensions of the construct being investigated and allowed for a more parsimonious representation of the phenomena (Fabrigar *et al.*, 1999; Kline, 1994). Previous research has utilised this approach to uncover the hidden or latent dimensions of quality in academia (for example: Debnath *et al.*, 2005; Gallifa and Batalle, 2010; Gruber *et al.*, 2010; Navarro *et al.*, 2005; Soutar and McNeil, 1996). Factor analysis is also a proven method to analyse student satisfaction (see Lamond *et al.*, 2013; O'Driscoll, 2012). Factor analysis has the added benefit of mitigating the problems of multi-collinearity that exist when variables are highly correlated with each other (Hair *et al.*, 2006; Miles and Shevlin, 2006).

There are requirements on the data for the use of factor analysis as an analysis method (see Table 1). A minimum sample size to item ratio of 5:1 is usually deemed acceptable for factor analyses (Hair *et al.*, 2006). This level was satisfied for the present study. An important criterion on the efficacy of factor analysis is the quantity and strength of correlations between the measured items.

INSERT TABLE 1 HERE

The present study indicated that all inter-correlations between the questionnaire items were greater than the 0.3 minimum thresholds. This result is further reinforced by the level of sampling adequacy of the data which was above the minimum acceptable level. The presence of a sufficient number of significant inter-item correlations as indicated by Bartlett's test of significance ($P < 0.001$) confirmed the applicability of factor analysis. The communalities of the variables reached the minimum acceptable level of 0.4 (Hair *et al.*, 2006) indicating that all variables in the analysis explain a reasonable amount of factor variance. The Kaiser

criterion for selecting factors with an eigenvalue greater than 1 was employed. The purpose of this rule ensures that only factors which account for a meaningful level of variance greater than or equal to 1 are retained (Hair *et al.*, 2006). Only those factors that contributed between 50 per cent to 60 per cent or more to explained variance were retained. As a final selection criterion, items which had a factor loading of 0.4 or less were excluded from the analysis (Hair *et al.*, 2006; Kline, 1994). There is only one factor which has a loading of 0.4 or less, which is 'My lecturers were extremely good at explaining things' at 0.382 and it was an element in Factor 1 Quality of staff and courses.

Regression Analysis

Multiple regression analysis is used to identify the level of influence of demographic variables on each of the student satisfaction factors. The demographic factors are considered as independent variables while the student satisfaction factors are considered as dependent variables (Field, 2013).

Hierarchical regression then is used for further analysis. Hierarchical regression is the process of building successive linear regression models, each adding more predictors (Field, 2013). In hierarchical regression, predictors are selected based on past work and the researcher decides in which order to enter the predictors into the model (Field, 2013). As a general rule, known predictors which are usually derived from other research should be entered into the model first in the order of their importance in predicting the outcome (Field, 2013). After known predictors have been entered, the experimenter can add any new predictors into the model (Field, 2013). New predictors can be entered either all in one go, in a stepwise hierarchically manner.

The demographic variables, such as mode of study, gender, country of origin and age, are entered into the model first as they are predictors and have been identified in previous research as having an influence on student satisfaction.

Results and Discussions

Factor Analysis

Table 2 provides the details of the relevant eigenvalues, variances and factor solutions. Six factors with eigenvalues greater than one were extracted from the data available, accounting for a variance of 86.729%. The following labels were given to those data:

- Factor 1: Quality of staff and course – it considers the areas including the quality of course content and delivery, and also the development of students' transferable skills as part of the curriculum
- Factor 2: Student learning environment – it focuses on the environment which is created to facilitate and support students' learning; and develop their sense of belonging to the university and the course, and its related identity
- Factor 3: Personal development of students – it relates to the issues which develop the students as independent and confident learners and be able to apply their learning skills in their future career

- Factor 4: Student services – it relates to the supporting services provided by the universities, such as library, information technology, healthcare and counselling services
- Factor 5: Appropriate assessment – it relates to the nature and the focuses of the assessment methods
- Factor 6: Clear expectation – it relates to the expectations on the different aspects of the course, including workload and course learning outcomes

The first four factors contribute to more than three quarters of the total variance in student satisfaction dimensionality of which Quality of staff and course (F1) accounted for the highest percentage at 28.094%. This correlates with Munteanu *et al.* (2010), Petruzzellis *et al.* (2006), Sanderson (1995)'s findings. Arambewela and Hall (2009) also found teaching performance was an important measurement for student satisfaction in Australia. Student learning environment (F2) represented 21.267% in variance with Personal development of students (F3), Student services (F4), Appropriate assessment (F5) and Clear expectation (F6) accounting for the balance in variance. Summated scales were created for each dimension and internal reliability measures were calculated using Cronbach's Alpha (Field, 2013). This test determines whether or not the scale items are measuring the same construct. An accepted minimum threshold for scale reliability is 0.7 (Hair *et al.*, 2006). All satisfaction dimensions reached acceptable levels and the range is 0.959 to 0.99. In other words, it is considered the current research finding is reliable.

The student satisfaction factors identified in this research has reinforced the findings from some previous studies. Price *et al.* (2003) concluded that university facilities, including elements such as availability of computers, availability of quiet areas, availability of areas for self-study, are some of the key factors for student satisfaction. The variables identified in Price *et al.*'s (2003) within Student services (F4) were considered in the current research. Petruzzellis *et al.*'s (2006) also considered facilities as an important factor for student satisfaction. Assessment, which is identified as Factor 5 (F5) in the current research, are also a well identified student satisfaction factor in previous literature. Smyth *et al.* (2012) stated clear expectation of assessment and prompt feedback are important factors for enhancing student experience. Arambewela and Hall (2009), Keeley *et al.* (2006) and Roger and Smith (2011) also discussed the importance of staff enthusiasm in the creating of a supportive learning environment, which is considered within Factor 2 (F2) of the current study. Factors 1, 2, 4 and 5 identified in this paper supported the findings of previous literature.

There were two new factors identified by this research. These are Personal development of students (F3) and Clear expectation (F6), which accounted for the 14.212% and 4.264% of student satisfaction dimension respectively. The identification of these two student satisfaction factors reflected that the real estate students in Australia are somewhat more likely to take control of their learning and more likely to play an active role in their personal development. The variables identified under the personal development of student factor are those relevant to the students' interest in the application of their existing learning, development of their confidence and simulation of their future learning. This implies the real estate students in Australia are deep learners and they are more inclined to reflect on their learning. The Clear expectation satisfaction factor includes the variables which are associated with the expectations of the workload related to the course. In classical marketing literature, the expectation of services is an important element affecting satisfaction (Arambewela and Hall, 2009; Douglas *et al.*, 2006; Petruzzellis *et al.*, 2006). The principle is that customers' satisfaction is higher if the real satisfaction matches with their expectation of the services.

This expectation affecting satisfaction principle applies to the real estate students in Australia as Clear expectation was identified as a student satisfaction factor.

INSERT TABLE 2 HERE

Regression Analysis

A series of multiple regressions were run to determine the explanatory power of individual demographic factors, including mode of study, gender, country of origin and age on overall student satisfaction (see Table 3).

INSERT TABLE 3 HERE

The four demographic factors, including mode of study, gender, country of origin and age, are statistically significant to the six student satisfaction factors on an individual basis. Quality of staff and course is the student satisfaction factor which explained the highest percentage of real estate student satisfaction, mode of study is the only demographic variable which is statistically significant relating to it. In other words, only mode of study is statistically significant on explaining Quality of staff and course as a factor influencing student satisfaction and its significant value is 0.000. On the other hand, mode of study, gender and age are statistically significant, their significant values are 0.000, 0.000 and 0.010 (see Table 3), relating to Student services despite it is only the fourth most important factor for real estate student satisfaction. This finding demonstrates an interesting situation which is the three out of the four identified important demographic factors, i.e. mode of study, gender and age, are statistically significant on explaining the fourth most important student satisfaction factor identified in this study. In other word, despite Quality of staff and course, Student learning environment and Personal development of students are more important student factors identified in this study, but they are less likely to be influenced by the commonly identified demographic factors affecting student satisfaction which were stated in previous literature such as Arambewela and Hall (2009), Douglas *et al.* (2006), O'Driscoll (2012) and Rogers and Smith (2011).

Subsequently, a hierarchical regression was run to examine the overall effects of the six student satisfaction factors while controlling individual demographic factors (see Table 4).

INSERT TABLE 4 HERE

In the hierarchical regression model (see Table 4), demographic variables were entered as the first step and explained only 1.8% of the variance in student satisfaction ($R^2 = 0.018$), with mode of study, gender and country of origin having positive coefficient while age has negative coefficients. Country of origin has the significant value of 0.999, while the mode of study has the significance of $p < 0.01$ level and its Beta value is 0.076 and t-value is equal to 2.634 while gender and age have the $p < 0.05$ level and their Beta values are 0.069 and -0.069 and t-values are 2.438 and -2.380 respectively. Country of origin does not have a statistically significant impact on real estate student satisfaction in Australia. The finding of this research contrasts with Arambewela and Hall's (2009) research which showed there is a difference on the determinants for student satisfaction between Australian and overseas students. Moreover, mode of study, gender and age have a statistically significant impact on real estate student satisfaction, which support the findings of previous studies such as those undertaken by

Rogers and Smith (2011), Douglas *et al.* (2006) and O'Driscoll (2012). Mode of study and gender have positive statistically significant relationships with student satisfaction factors. The result showed that students who study on-campus and are male have higher levels of satisfaction, while students aged 24 or more have a higher level of satisfaction as age has a negative relationship with student satisfaction factors.

In step two of the hierarchical regression model, the six student satisfaction factors identified in this research were block-entered into the regression equation and explained 86.6% ($R^2 = 0.866$), of the variance in student satisfaction, representing a 84.9% increase in explanatory power over and above the variance explained by mode of study, gender, country of origin and age. Age is the only factor which has a statically significant but negative impact, with the Beta value of -0.024, t value of -2.218 and significant level of 0.027. Quality of staff and course, Personal development of students and Clear expectation were the factors which are statistically significant. Quality of staff and course is indeed the most important predicting factor for real estate students' satisfaction as it is the factor which contributes the highest percentage of student satisfaction at 28.09% and is statistically significant. However, there is a mixed picture for Learning environment and Clear expectation. Learning environment is the second highest rated factor; contributed 21.267% in variance, but it is not statistically significant, while Clear expectation is the sixth important factor having 4.264% of variance but it is statistically significant.

Figure 1 depicts the final model of student satisfaction along with overall variance values and factor Beta scores, with the summary of the research findings combined in Table 5. The four factors identified in this paper, Quality of staff and course (F1), Student learning environment (F2), Personal development of students (F3), Student services (F4), Appropriate assessment (F5) and Clear expectation (F6), explained 86.6% of real estate student satisfaction in Australia, while other factors explained 13.4% of student satisfaction. These six identified satisfaction factors have a positive relationship with overall student satisfaction of real estate students as their beta values are positive. Quality of staff and course (F1) showed the highest positive impact as its beta value is highest among six factors, which is 91.8%.

INSERT FIGURE 1 HERE

INSERT TABLE 5 HERE

Conclusion

This research investigated the student satisfaction of real estate students in Australia. The overall results confirmed that student satisfaction is a multi-dimensional construct, composed of a number of interrelated factors. Exploratory factor analysis revealed a multidimensional; six-factor solution accounting for nearly 87% in explained variance linked to the student satisfaction concept. This is compatible with previous studies, which emphasised the complexity of the concept such as Navarro *et al.* (2005) and Gruber *et al.* (2010). The real estate student satisfaction factors identified in this paper are Quality of staff and course (F1), Student learning environment (F2), Personal development of students (F3), Student services (F4), Appropriate assessment (F5) and Clear expectation (F6).

Multiple regression analyses revealed certain commonalities in explanatory power among the satisfaction dimensions. Across all student satisfaction factors, Quality of staff and course is

the most important predictor of real estate student satisfaction. This result reflects similar findings from previous research such as Arambewela and Hall (2009), Munteanu *et al.* (2010), Petruzzellis *et al.* (2006) and Sanderson (1995). Staff and students' interaction and teaching quality contributed to a better learning environment which is the second most important factor for student satisfaction and has an impact on student experience (Umbach and Wawrzynski, 2005). Mode of study was found to be the most important demographic variable influencing real estate student satisfaction and it has a statistically significant relationship with four out of six satisfaction factors which are Quality of staff and course, Student services, Appropriate assessment and Clear expectation. At step two of hierarchical regression, age was found to be the only demographic factor with a statically significant but negative impact on real estate student satisfaction. Only three out of the six student satisfaction factors identified in this paper, which are Quality of staff and course (F1), Personal development of students (F3) and Clear expectation (F6), are statistically significant.

This paper added to the literature by identifying important elements for enhancing student satisfaction which universities can take on board for developing a strategy to enhance student satisfaction. The most important demographic variable and the most important factor affecting real estate student satisfaction are age and Quality of staff and course. Students aged 24 or above usually have a higher student satisfaction for their courses. Therefore, universities should consider of allocating more resources on enhancing teaching quality as it is the most determinant for student satisfaction. It is recommending that universities should consider implementing measures to improve student satisfaction amongst younger students. As part of this strategy, it is important to identify the most important factors affecting the student satisfaction of younger students. One of the ways to obtain this information is to conduct further analysis of the raw student satisfaction data and identify the further information from it. Also, universities can consider recruiting a higher percentage of older students. At the moment, the percentage of aged 24 or older students are 5% less than those aged below 24. It will be vital for universities to invest further on ensuring and improving the quality of staff and course as it is proven to be the most important factor affecting real estate student satisfaction.

This research is not without limitation. The major limitation is the short-span of the data. The data used in this paper has been taken from 2010-2012 inclusively. This is a relatively short time-span so the ability to establish a trend is limited. The second limitation is that only quantitative data for the Course Experience Questionnaire (CEQ) has been obtained for this study. The qualitative is not made available in the public domain. Therefore, this research does not have opportunity to put the verbal comments into context and establish the whole picture regarding student satisfaction.

There are also suggested areas for future research. The first future research area is to conduct this research again with more years of data in order to establish a more comprehensive view on the factors affecting real estate student satisfaction in Australia. The second research area is to replicate this research in another country and compare with Australia and identify if the real estate graduates in a different country have a different level of student satisfaction. The third research area is to conduct further detailed analysis of the student satisfaction and identify the difference on the factors which affect the student satisfaction of students from different demographic backgrounds and use these findings to develop more tactical strategies on enhancing student satisfaction.

References

- Arambewela, R., & Hall, J. (2009). An empirical model of international student satisfaction. *Asia Pacific Journal of Marketing and Logistics*, 21(4), 555-569.
- Aspden, L., & Helm, P. (2004). Making the connection in a blended learning environment. *Educational Media International*, 41(3), 245-252.
- Australian Graduate Survey (AGS) (2015). *Australian Graduate Survey* [WWW document]. URL <http://www.graduatecareers.com.au/research/surveys/australiangraduatesurvey/>.
- Coles, C. (2002). Variability of student ratings of accounting teaching: evidence from a Scottish business school. *International Journal of Management Education*, 2(2), 30-39.
- Debnath, R. M., Kumar, S., Shankar, R., & Roy, R. K. (2005). Students' satisfaction in management education: study and insights. *Decision*, 32(2), 139-155.
- Douglas, J., Douglas, A., & Barnes, B. (2006). Measuring student satisfaction at a UK university. *Quality Assurance in Education*, 14(3), 251-267.
- Fabrigar, L. R., Wenger, D. T., MacCallum, R. C., & Strahan, E. S. (1999). Evaluating the use of exploratory factor analyses in psychological research. *Psychological Methods*, 4(3), 272-299.
- Field, A. P. (2013). *Discovering statistics using SPSS, 4th ed.* London: Sage.
- Gallifa, J., & Batalle, P. (2010). Student perceptions of service quality in a multi-campus higher education system in Spain. *Quality Assurance in Education*, 18(2), 156-170.
- Gruber, T., Fub, S., Voss, R., & Glasser-Zikuda, M. (2010). Examining student satisfaction with higher education services: using a new measurement tool. *International Journal of Public Sector Management*, 23(2), 105-123.
- Hair, J. R., Anderson, R. E., Tatham, R. L., & Black, W.C. (2006). *Multivariate data analysis, 8th ed.*, Englewood Cliffs, NJ: Prentice-Hall International.
- Kara, A., & DeShields, O. W. Jr. (2004). Business student satisfaction intentions and retention in higher education: an empirical investigation. *Marketing Education Quarterly*, 3(1), 1-25.
- Keeley, J., Smith, D., & Buskit, W. (2006). The teacher behaviours checklist: factor analysis of its utility for evaluating teaching. *Teaching of Psychology*, 33(2), 84-91.
- Kline, P. (1994). *An easy guide to factor analysis.* London: Routledge.
- Lamond, J., Proverbs, D., & Wood, T. (2013). *What matters to built environment students.* York: Higher Education Academy.
- Miles, J., & Shevlin, M. (2006). *Applying regression and correlation: A guide for students and researchers.* London: Sage Publications.

Munteanu, C., Ceobanu, C., Bobalca, C., & Anton, O. (2010). An analysis of customer satisfaction in a higher education context. *International Journal of Public Sector Management*, 23(2), 124-140.

Navarro, M., Inglesias, M. P., & Tores, P. R. (2005). A new management element for universities: satisfaction with offered courses. *International Journal of Educational Management*, 19(6), 505-526.

Newell, G. (2013). Assessing property student satisfaction with their property education experience in an Australian University. *Pacific Rim Property Research Journal*, 19(2), 133-150.

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory*, 3rd. ed. New York: McGraw-Hill.

O'Driscoll, F. (2012). What matters most. An exploratory multivariate study of satisfaction among first year hotel/hospitality management students. *Quality Assurance in Education*, 20(3), 237-258.

Petruzzellis, L., D'Uggento, A. M., & Romanazzi, S. (2006). Student satisfaction and quality of service in Italian universities. *Managing Service Quality*, 16(4), 349-364.

Poon, J. and Brownlow, M. (2015). Real estate student satisfaction in Australia: what matters most?. *Property Management*, 33(2), 100-132.

Price, I., Matzdorf, F., Smith, L., & Agahi, H. (2003). The impact of facilities on student choice of university. *Facilities*, 21(10), 212-222.

Ramsden, P. (1991). A performance indicator of teaching quality in higher education: The Course Experience Questionnaire. *Studies in Higher Education*, 16(2), 129-150.

Rogers, J. (1992). *Adults learning*, 3rd ed., Milton Keynes: Open University Press.

Rogers, J., & Smith, M. (2011). Demonstrating genuine interest in students' needs and progress Implications for student satisfaction with courses. *Journal of Applied Research in Higher Education*, 3(1), 6-14.

Sanderson, G. (1995). Objectives and evaluation, in Truelove, S. (Ed.), *Handbook of training and development*, 2nd ed., Oxford, Blackwell, 113-144.

Smyth, S., Houghton, C., Cooney, A., & Casey, D. (2012). Students' experiences of blended learning across a range of postgraduate programmes. *Nurse Education Today*, 32(4), 464-468.

Sohail, M. S., & Shaikh, N. M. (2004). Quest for excellence in business education: a study of student impressions of service quality. *International Journal of Educational Management*, 18(1), 58-65.

Soutar, G., & McNeil, M. (1996). Measuring service quality in a tertiary institution. *Journal of Educational Administration*, 34(1), 72-82.

Teven, J. J., & McCroskey, J. C. (1996). The relationship of perceived teacher caring with student learning and teacher evaluation. Paper presented at the *Annual Meeting of the Speech Communication Association*, San Diego, CA, 23-26 November.

Thomas, E. H., & Galambos, N. (2004). What satisfies students? Mining student-opinion data with regression and decision tree analysis. *Research in Higher Education*, 45(3), 251-269.

Umbach, P. D., & Wawrzynski, M. R. (2005). Faculty do matter: the role of college faculty in student learning and engagement. *Research in Higher Education*, 46(2), 153-184.

Welker, J., & Berardino, L. (2005). Blended learning: understanding the middle ground between traditional classroom and fully online instruction. *Journal of Educational Technology Systems*, 34(1), 33-55.

Figure 1: Theoretical model of real estate student satisfaction

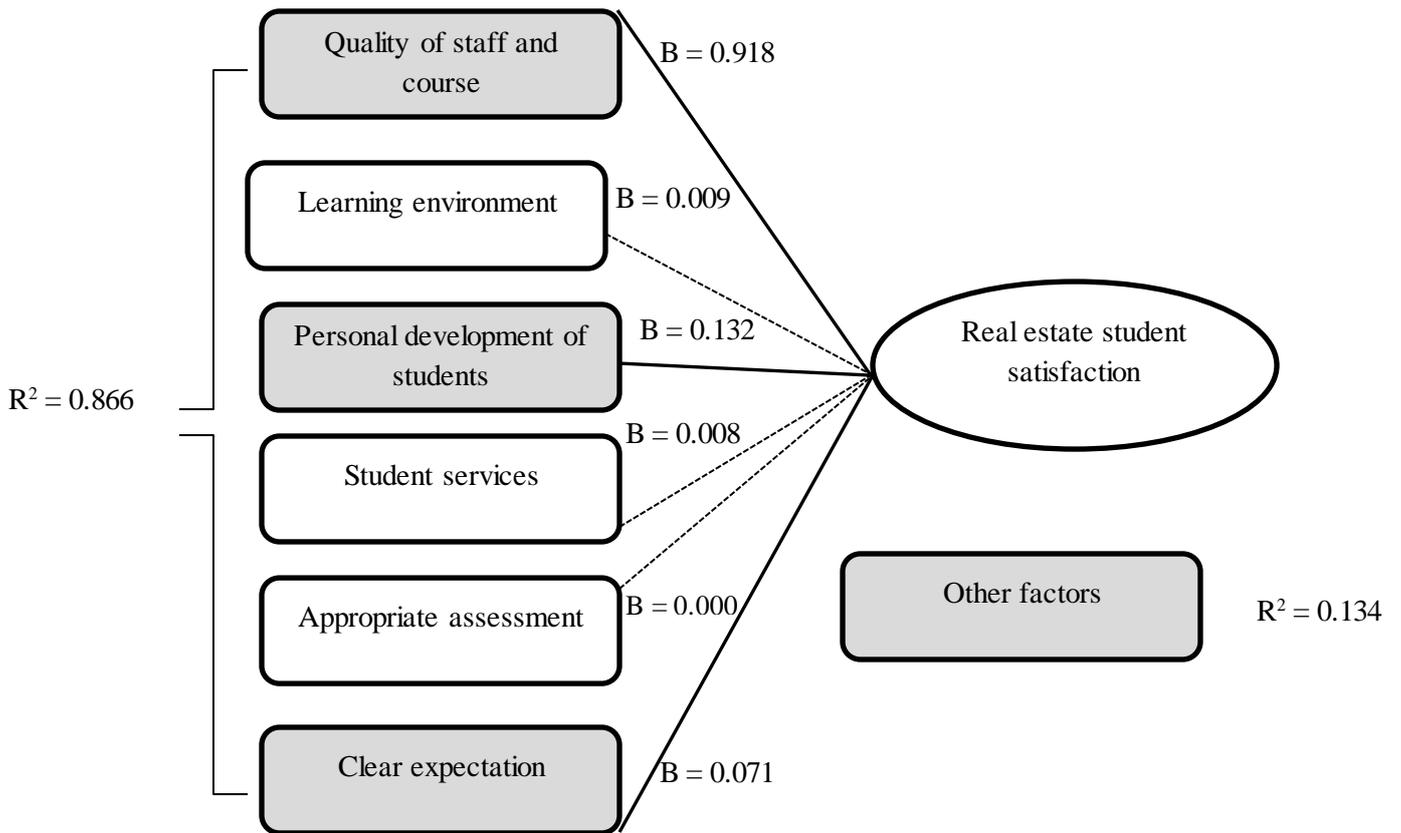


Table 1: Criteria for using factor analysis

	Acceptable level	Current study
Cases – item ratio	5:1	25:1
Minimum number of cases	100	991
Minimum Inter-item	≥ 0.3	≥ 0.91
Bartlett’s test of Significance	P < 0.05	P < 0.001
KMO sampling adequacy	≥ 0.7	0.936
Minimum communality	≥ 0.4	≥ 0.69

Table 2: Result of factor analysis of real estate student satisfaction

	F1 - Quality of staff and course	F2 - Learning environment	F3 - Personal development of students	F4 - Student services	F5 - Appropriate assessment	F6 - Clear expectation
The staff made it clear right from the start what they expected from students	0.906					
The course developed my problem-solving skills	0.886					
As a result of my course, I feel confident about tackling unfamiliar problems	0.876					
My course helped me to develop the ability to plan my own work	0.876					
The course sharpened my analytic skills	0.871					
The teaching staff of this course motivated me to do my best work	0.867					
The teaching staff worked hard to make their subjects interesting	0.860					
The teaching staff normally gave me helpful feedback on how I was going	0.856					
The staff put a lot of time into commenting on my work	0.851					
The course improved my skills in written communication	0.849					
The course helped me develop my ability to work as a team member	0.834					
The staff made a real effort to understand difficulties I might be having with my work	0.832					
I learned to explore ideas confidently with other people		0.941				
I felt part of a group of students and staff committed to learning		0.937				
Students’ ideas and suggestions were used during the course		0.932				
I found the course motivating		0.930				
I found my studies intellectually stimulating		0.930				
I was able to explore academic interests with staff and students		0.929				
Overall, my university experience was worthwhile		0.926				
The course has stimulated my interest in the field of study		0.926				
I felt I belonged to the university community		0.901				
I learned to apply principles from this course to new situations			0.948			
I consider what I learned valuable for my future			0.947			
My university experience encouraged me to value perspectives other than my own			0.941			
The course provided me with a broad overview of my field of knowledge			0.939			
The course developed my confidence to investigate new ideas			0.939			
University stimulated my enthusiasm for further learning			0.930			
The library services were readily accessible				0.985		
Health, welfare and counseling services met my requirements				0.983		
I was able to access information technology resources when I needed them				0.982		
Relevant learning resources were accessible when I needed them				0.978		
I was satisfied with the course and careers advice provided				0.953		
To do well in this course all you really needed was a good memory					0.943	
The staff seemed more interested in testing what I had memorised than what I had understood					0.941	
Too many staff asked me questions just about facts					0.929	
It was always easy to know the standard of work expected						0.913
I usually had a clear idea of where I was going and what was expected of me in this course						0.904
It was often hard to discover what was expected of me in this course						0.882
Eigenvalue	10.957	8.294	5.543	4.462	2.906	1.663
% of Variance	28.094	21.267	14.212	11.440	7.452	4.264
% Cumulative variance	28.094	49.361	63.573	75.014	82.465	86.729
Cronbach α	0.959	0.981	0.988	0.990	0.964	0.963

Notes: Extraction method: Principal component analysis; Rotation Method: Varimax with Kaiser Normalization; Rotation converged in 6 iterations; n = 1258

Table 3: Multiple regression by demographic factors

Student satisfaction factors	Mode of study			Gender			Country of Origin			Age		
	Beta	t	Sig.	Beta	t	Sig.	Beta	t	Sig.	Beta	t	Sig.
Quality of staff and course	0.097	3.584	0.000	0.055	1.972	0.049	-0.048	-1.736	0.083	-0.064	-2.287	0.022
Student learning environment	0.048	1.788	0.074	-0.066	-2.355	0.019	0.046	1.657	0.098	0.029	1.035	0.301
Personal development of students	0.012	0.463	0.644	0.040	1.450	0.147	0.149	5.393	0.000	-0.072	-2.564	0.010
Student services	-0.139	-5.155	0.000	0.101	3.615	0.000	-0.010	-0.352	0.725	0.072	2.586	0.010
Appropriate assessment	-0.077	-2.849	0.004	0.067	2.386	0.017	-0.048	-1.746	0.081	-0.051	-1.838	0.066
Clear expectation	0.232	8.618	0.000	-0.041	-1.462	0.144	0.107	3.876	0.000	-0.030	-1.072	0.284
R		0.302			0.159			0.202			0.137	
R ²		0.091			0.025			0.041			0.019	
R ² Change		0.087			0.021			0.036			0.014	
F		20.868			5.406			8.839			4.015	
Sig.		0.000			0.000			0.000			0.001	

Note: **Significant at the $p \leq 0.01$ level; Significant at the $p \leq 0.05$ level

Table 4: Hierarchical regression

Demographic Variables	Model 1			Model 2		
	Beta	t	Sig.	Beta	t	Sig.
1 Mode of Study	0.076	2.634	0.009**	-0.020	-1.811	0.070
Gender	0.069	2.438	0.015*	0.013	1.279	0.201
Country of Origin	0.000	-0.001	0.999	0.010	0.931	0.352
Age	-0.069	-2.380	0.017*	-0.024	-2.218	0.027*
Student Satisfaction Factors						
2 Quality of staff and course				0.918	87.953	0.000**
Learning environment				0.009	0.860	0.390
Personal development of students				0.132	12.570	0.000**
Student services				0.008	0.782	0.435
Appropriate assessment				0.000	-0.041	0.967
Clear expectation				0.071	6.640	0.000**
R		0.133			0.931	
R ²		0.018			0.866	
R ² Change		0.018			0.849	
Sig. F. Change		0.000			0.000	

Note: **Significant at the $p \leq 0.01$ level; Significant at the $p \leq 0.05$ level

Mode of Study = On-campus; Gender = Male; Country of Origin = Australian, Age = Below 24

Table 5 Summary of research findings

<p>Research question 1: What are the factors affecting satisfaction of real estate students?</p> <ul style="list-style-type: none">• Factor 1: Quality of staff and course• Factor 2: Student learning environment• Factor 3: Personal development of students• Factor 4: Student services• Factor 5: Appropriate assessment• Factor 6: Clear expectation
<p>Research question 2: What factor or factors contribute most on explaining and predicting real estate student satisfaction?</p> <ul style="list-style-type: none">• Quality of staff and course is statistically significant on predicting real estate student satisfaction. This is also the factor weighed the most (28.094%) on explaining student satisfaction.• Personal development of students is also statistically significant on predicting student satisfaction. This is also the factor weighed the third most (14.212%) on explaining student satisfaction.• Clear expectation is only the sixth most important factor explaining student satisfaction, which represented 4.264 % in variance. It is statistically significant in predicting student satisfaction.
<p>Research question 3: Are there any differences in the factors which predict real estate student satisfaction, based on different demographic factors including mode of study, gender, nationality and age?</p> <ul style="list-style-type: none">• In the multiple regression analysis, only mode of study is statistically significant to predict the quality of staff and course, which is the highest weighted factor influencing student satisfaction.• In step one of the hierarchical regression model, demographic variables explained only 1.8% of the variance in student satisfaction ($R^2 = 0.018$). Mode of study and gender are of positive statistical significance while age is of negative statistical significance.• In step two of the hierarchical regression model, age is the only demographic factor which is statistically significant but has a negative impact on real estate students' satisfaction. Quality of staff and course, Personal development of students and Clear expectation are the factors which are statistically significant on predicting student satisfaction.